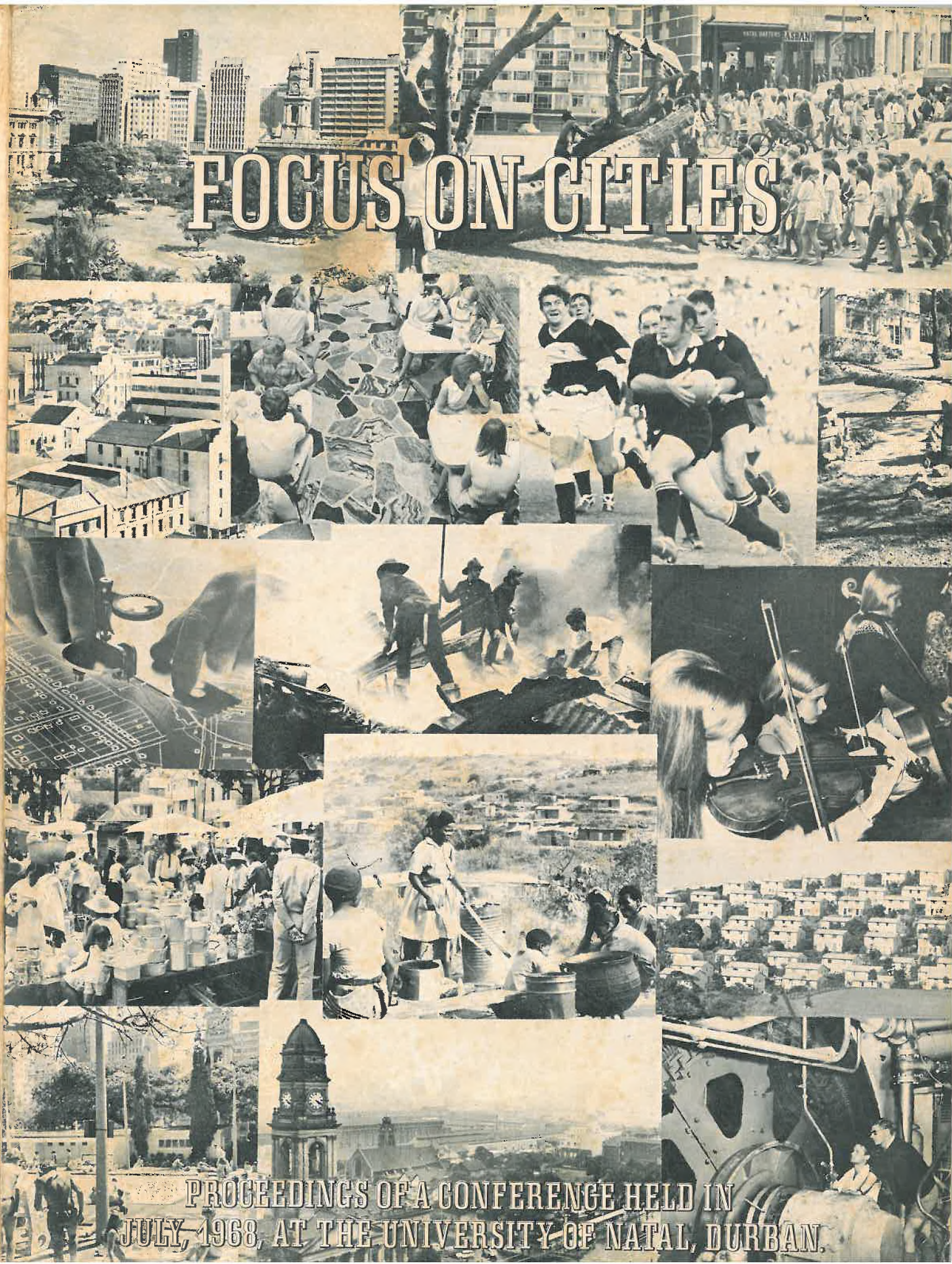


FOCUS ON CITIES

H. L. WATTS

FOCUS ON CITIES



PROCEEDINGS OF A CONFERENCE HELD IN
JULY, 1968, AT THE UNIVERSITY OF NATAL, DURBAN.

FOCUS ON CITIES

PROCEEDINGS OF A CONFERENCE
ORGANISED BY THE
INSTITUTE FOR SOCIAL RESEARCH,
AT THE
UNIVERSITY OF NATAL, DURBAN,
8th - 12th JULY 1968

EDITED BY: H. L. WATTS.

INSTITUTE FOR SOCIAL RESEARCH
UNIVERSITY OF NATAL
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1970

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FOREWORD

Eighty-five years ago Josiah Strong wrote: "The city is the nerve center of our civilisation. It is also the storm center". This is still true, and the present volume focuses upon many dimensions of this nerve and storm center.

Ever since man formed states and began to escape the trammels of the village, he sought a distribution of population in space compatible with the "good life". Man's solution has always consisted in the establishment of cities - the city-state in ancient Mesopotamia, China, and Hellas; large agglomerations (e.g., Rome, Changan) in temporarily dominant empires of the past; and metastasizing megalopolises in today's world (e.g., Tokyo, New York, London). Yet, never has a specific urban solution proved satisfactory; never has man's city continued to serve as a stable base for the persistent striving that is non-philosophic man's life. Even Pericles's Athens failed. The city, Oswald Spengler observed, frees men of the grip of ground and countryside and generates "civilisation" only to bring about its ultimate ruin.

Unfortunately, as man conglomerates, he continues to be beset by problems of ancient vintage. While cities may no longer be consumers of men, they continue to fail to supply water fit to drink. Within cities the struggle of man with man, a major consequence of population growth, is intensified. Many city dwellers remain poorly housed, victims as well of anonymity and anomie, albeit not confined to so cramped quarters as those of which Juvenal and Cicero complained. Today traffic is more congested than in Nero's Rome, and hooligans are more numerous and deadly now that so many cities have lost the will and the capacity to govern their inhabitants effectively. Even as De Tocqueville feared, the ascendance of one or several cities into preponderance has undermined the political and economic security of nations. The very network of reciprocity that undergirds the modern state appears to be cracking up in the wake of urban failure.

Yet there is no running away from the problems of which the melancholy history of man and his cities warns him. The millenia-old village is on the way out. Population concentration proceeds apace. For man's agricultural productivity is outstripping his demand for produce, while improvement in his means of communication and transportation is making ever greater demographic concentration possible. Man must, therefore, discover how to control the drift from country and village to city and make it subserve the requirements of healthy, good, and aesthetically satisfying life.

In the present volume gotten together with great effort and skill by Professor Watts and his associates, many aspects of this drift and resulting problems are examined. Solutions are put forward. Moreover, alternative modes of population distribution are considered, together with the possibility that there exist limits beyond which any particular city had best not be allowed to grow. Fortunately, the Republic of South Africa retains most of its options - options to the effective exercise of which this rich volume points even as it suggests answers to urban difficulties in other lands.

JOSEPH J. SPENGLER
Duke University, 1970.

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- African Explosives and Chemical Industries Ltd.*
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- University of Natal - the Principal, the Council, the
Officers of the University, the Department of
Geography, the School of Architecture, and the
Town Planning School*

Sincere appreciation is expressed to all of the above for their most valuable aid and support.

During the conference the various Chairmen and Discussants played an important part in ensuring the smooth functioning of the proceedings. The following were Chairmen of various sessions, in order of session:

*Professor O.P.F. Horwood, Principal and Vice-Chancellor,
University of Natal;*

*Professor Eileen J. Krige, Head of the Department of
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Mr. G.C. Hands, referred to above;

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Mr. H. Hallen, referred to above;

Mr. P.E. McManis, Head of the Town Planning School, University of Natal;

Miss Jessie Birss, of the Central Planning Project, Durban.

To each and all of these Chairmen and Discussants, deep appreciation is expressed for their contribution towards the conference.

Grateful acknowledgement is made for permission to publish certain photographs and diagrams. In Councillor Tanser's paper, the views of Salisbury in 1898, 1910, and 1935 are by courtesy of the *National Archives in Salisbury*, the 1965 view of the city is by courtesy of the *Rhodesian Ministry of Information*; while the plan of Salisbury in 1891 is from a publication on the city by *the author*. In Professor Croft's paper, the aerial view of Colesburg is by

courtesy of *Air Survey Company*.

The photographs used for the cover are by courtesy of *The Natal Mercury*, Durban.

In connection with the conference excursions, the Institute is most grateful to the guides for all the time and preparation they put in: *Mr. J. Greyling* of the University College, Durban, and *Mr. D. Rajah* of the University of Natal led the North Coast excursion; *Mrs. M. Sugden* and *Miss H. Rouillard* of the University of Natal conducted the Durban City excursion; and *Professor R.J. Davies* and *Mrs. E. Preston-Whyte*, also of the University, guided the excursion to a Bantu Homeland. In the latter instance *Mr. C. Elsdon*, Chief Bantu Affairs Commissioner, Durban, very kindly acted as an expert informant during the excursion. The overall planning of the excursions, and the preparation of guide-books, was in the hands of *Professor R.J. Davies*.

While reference has been made to the great contribution made by the officers of the University, I would like to particularly express my own personal thanks to the *Principal, Professor O.P.F. Horwood*, for his encouragement and support; to the *Public Relations Officer, Mr. P.E. Patrick*, who was a constant source of friendly assistance and advice; to *Mr. J. Greyling*, and *Mr. Gordon Swain and his team*, who helped with the financial aspects of the conference; and to *Mr. P.A. Achurch*, who gave very valuable advice on the recording methods to be adopted during the proceedings, and helped obtain and adapt the necessary equipment.

To the *Staff of the Institute*, who assisted so willingly with the preparations for, and the actual running of, the conference, and also assisted subsequently with the preparation of the proceedings for publication, I owe a tremendous debt of gratitude. Such an undertaking involves teamwork, and the team from the Institute performed magnificently over a long period of time, often under great pressure. To *Mrs. E. Frange and her team*, who dealt with transport; to *Mr. P.W. Johnston and his team*, who arranged the recording of the proceedings; to *Miss Lorna Geils*, who helped with the exhibition and the excursions; to *Mrs. R. Bowie*, who prepared maps and diagrams; and to *Nancy Pratt and her team of assistants*, particularly *Livinia Slogrove, Patsy Wickham, Joan Booth and Marie Lupton*, I express my very great appreciation and gratitude.

The final tasks have involved the publication of the proceedings. To *Nancy Pratt*, and also *Patsy Wickham* and *Livinia Slogrove* of the Institute, I would like to say a big 'thank you' for painstaking, accurate work, often of a very exacting nature. The final manuscript for lithographing was typed by *Nancy Pratt, Livinia Slogrove* and *Patsy Wickham*. Proof-reading was undertaken by *Nancy* and *Patsy*. To *Mr. T.M. Allan and his team*, who undertook the lithographing, my appreciation is extended.

Finally, last but not most certainly not least, there is a particular personal acknowledgement which I wish to make. This is to the other two members of the Conference Organising Committee - *Professor G.J. Trotter* and *Professor R.J. Davies* - who gave so freely of their time, and helped me both when I fulfilled the role of Organising Secretary, and subsequently that of Editor. *Ron Davies*, with his rich imagination, and experience of conference organisation, was a great inspiration to *George Trotter* and me. To both *Ron* and *George*, who laboured long with me in planning and organising the conference, I owe the deepest debt of gratitude. A man is indeed fortunate to have colleagues and friends such as these to assist in such an undertaking.

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INTRODUCTION

From the 8th - 12th July 1968, the Institute for Social Research at the University of Natal in Durban held a conference entitled *Focus on Cities*. The aims of this conference were to bring together from Southern Africa and overseas both academic research workers and applied practitioners in the field of urban life with a view to:

- (i) Promoting dialogue between basic and applied workers, and between workers from differing disciplines;
- (ii) Widening horizons and perspectives of workers in the urban field, and by confronting individuals with specialisms other than their own, to sensitize them to a wider range of issues and problems than they normally consider;
- (iii) Sharing techniques of research;
- (iv) And to stimulate and generate new ideas, with a view to expanding and improving basic and applied research undertaken in Southern Africa in regard to urban problems.

With all this in mind, the conference was planned accordingly. It opened with a plenary session on the first day, dealing with the pattern and trend of urbanisation. This was followed on the three succeeding days by a pair of sessions held in parallel each morning and afternoon on different aspects of urban life - *The History and Development of Towns*; *Urban Man - Some Social Science Viewpoints*; *Urban Man - Health Aspects*; *Urban Man - The African and City Life*; *Community Development and Services*; *The City - Its Form, Architecture and Housing*; and *The City - Its Politics, Government and Goals*. The closing day of the conference consisted of a plenary session dealing with economic and planning considerations in regard to towns and cities.

Inevitably the conference delegate was forced to select which sessions to attend. The wide spectrum of papers was deliberately intended to help bring home the complexity of urban life and problems to workers who often operate with blinkers on within the narrow confines of their own discipline.

In this publication of the proceedings, no attempt has been made to produce an overall coherence or sharp focus for the conference. Rather an attempt has been made to record accurately what took place, and like a book of readings to offer at least something of interest and relevance for different workers in a variety of disciplines within the urban field. If the focus is somewhat diffuse rather than narrow and sharp, this is necessarily so in view of the aims of the conference.

Keeping the length of this volume down to reasonable proportions has been a problem. With long papers it necessitated cutting for length where this was possible without materially altering the paper concerned. Drastic cutting of the discussions proved necessary, and instead of verbatim reporting throughout, the reports on the discussions are mainly a summary of the essential points made.

The full conference is dealt with in this publication, except for the three-hour discussion groups held in parallel on the afternoon of Thursday 11th July. The topics dealt with on that occasion were *The Impact of the Freeway on the City*, *Bantu Labour in Towns*, and *Are Our City Developmental Bye-Laws Out Of Date?* These discussion groups were not based on prepared papers, but consisted of free discussion following a lead-in by a panel. As reports on the discussions giving the flow and counter play of ideas presented would have had to be lengthy, it was decided to cut this part of the conference out of the published proceedings.

On Wednesday 10th July after morning tea, three excursions were organised, covering *The City of Durban*, *The Natal North Coast*, and *A Bantu Homeland*,

respectively. Excursion handbooks were prepared, giving a range of information about the areas covered. These handbooks are not included herein, but copies are available separately.

Several times during the proceedings reference is made to 'Bantu townships' or 'non-White townships' in South African cities. For the benefit of the overseas reader not acquainted with South African conditions a word of explanation in regard to the morphology of South African cities would not be amiss. Typically in overseas cities the poorest sections of the community live in deteriorating zones adjacent to the centre or adjacent to industrial areas. In South Africa, both as a result of the need for the housing of shanty populations which developed around cities during the war when industries developed and building was limited, and also during the last two decades as the result of legislative control and planning under the Group Areas Act, townships or housing estates have been built for non-Whites in certain sectors of the peripheries of the cities. What is found thus is very often a city composed in its inner core of White residential areas, following very much a type of ecological pattern which one finds in overseas cities, and then further out the well-to-do White suburbs, and right on the periphery in certain sectors vast non-White townships. Nearly all of the houses in such townships are low-cost mass-produced dwellings put up by the local authority or the central government, as few non-Whites are able to afford building a private home. So it is that typically most non-Whites have to travel further to work than most Whites, and residential segregation of the races has been almost completed. (Incidentally I should point out that within the South African context the word 'suburb' does not necessarily refer to areas outside the jurisdiction of the central city, but is used to include all White residential areas beyond the central business district and the large blocks of 'flats' or apartments built around the centre.)

No attempt has been made in editing the conference proceedings to produce an overall synthesised view of either the city or urbanisation. There are almost as many views of the city and urbanisation as there are of research workers, and certainly far more views than there are disciplines involved. This reminds us that reality is always more varied, and always richer than the abstractions which men produce in their attempts to understand that reality. So it is that I must leave it to you the reader to produce whatever gestalt of impressions from the proceedings is relevant for your own particular concern and frame of reference.

H.L. WATTS
Editor

Durban
1970

OPENING ADDRESS

OPENING ADDRESS

The Principal of the University of Natal, Professor O.P.F. Horwood, welcomed delegates and visitors to the University of Natal. A welcome on behalf of the City of Durban was extended by Her Worship the Mayor, Councillor Mrs. Margaret Maytom.

His Honour, the Administrator of Natal, Mr. T.J.A. Gerdener, after some introductory remarks, opened the Conference with the following address:

Although more than 1.3 billion people (about 38% of the world's population) are today living in cities, and although the whole of our modern industrial civilization is in fact dominated by the birth and expansion of cities, and although the organisation of mankind over the last 100 or 150 years has had a more profound effect upon his thought and behaviour patterns than any other single event in the world's history, there are still some remarkable gaps in our knowledge of urban sociology and psychology. Some of the papers to be read at this conference, for instance, deal very adequately with the reasons for urbanisation, with its history and growth, and the effects it had on the socio-economic, social-politic fabric of contemporary society. Others analyse its physical environment, its changing social determinants, its inter-relativeness with labour patterns and juvenile behaviour, cultural and religious institutions, with housing, with industry and commerce. It is clear that much is known, and has been written about, the numerous facets of urbanisation - the most dominant socio-economic force in the century in which we live. But it is equally clear that there are still some significant differences in sociologists' evaluation of urbanisation, and its effects upon man himself - upon his personality and his mentality. The question is will urbanisation in the time to come change man? Can he last mentally and morally if he has to live in cities for another thousand years? It is this part of the problem which I want to refer to in particular today - viz. our ability to create in the city of the future such environmental determinants as would be conducive to man's personal development, his happiness and his efficiency.

Numerous books have already been written about the subject - some good - some rather superficial, but it must be immediately admitted that most deductions rest principally on the broad insight of the instinct of the authors, rather than on systematic research. Much of what is said to be known about the alleged influence of urbanisation on the personality should therefore, at present, still be regarded as interesting and stimulating hypotheses to be tested, rather than as proved conclusions which have to be unreservedly accepted. There is, nevertheless, despite the lack of precise scientific data, general agreement that city living has had some marked effects upon personality and mentality. Some, such as the accelerated development of urbanites' intelligence quotient being to his advantage, and others, such as the equally accelerated development of neuroticism, to his disadvantage. Most authors today agree that the following are among the main processes and problems afflicting urban man:

1. Tensions caused by the multifarious physical limitations which characterize urban life: excessive noise; the constant cacophony of mechanical sounds; the incessant visual attacks on the eyes by glaring, changing multi-coloured lights; mass congestion in public conveniences, restaurants, departmental stores and amusement places; and the strain caused by daily commuting.

2. Tensions caused by excessive competition: Psychologists and education-
alists today agree that a certain amount of competition is essential
for the full development of the character and the personality, but
incessant competition, which has become a well-known urban phenomenon,
often has a detrimental effect and leads to mental derangements.
Competition is no longer confined to the physical sphere, but has
been extended to the social and economic spheres - finding jobs and
business orders; to membership of clubs and to contests. In many
instances success is vital for survival. Excessive competition nearly
always leads to excessive nervousness.
3. Conflicts so varied that the individual often loses faith in his
fellowmen and in himself: Throughout history conflicts have been
common sociological phenomenon - a factor in the development of per-
sonality and a stimulant in the achievement of better and higher
ideals. The conflicts were rarely more than incidentals, and the
conflict-contacts of the average rural dweller were not so numerous
that they led to incessant struggle. By contrast, today conflicts
have become part and parcel of the existence of those who have to live
and die in cities. Because of the daily numberless contacts of urban
life, and competitiveness with its many social, economic and political
facets, in urban areas conflicts can result in court litigation, in
loss of jobs and business opportunities, in numerous lasting personal
enmities, in riots, crimes and police actions, in untold frustrations
and family tragedies. Peace of mind is often the exception, rather
than the rule. Psychiatrists and psychologists assure us that
incessant conflict is one of the main causes of the neurotic personality
found in all spheres of contemporary urban life.
4. Equally devastating in its effects upon the human mind can be the very
extent and nature of cultural diversity found in modern cities. In
urban South Africa, only to a slightly lesser extent than in the highly
developed urban societies such as those in certain cities of the United
States, we today find a variety of sub-cultures, with no less than 17
languages, numerous institutionalised attitudes, many contradictory sets
of moral values, many complicated racial problems, and powerful con-
flicting claims of group cultures. When antagonisms between language
and racial groups cannot be sublimated, or cannot be held at a level
which permits outwardly peaceful contacts, and the conviction that it is
possible to live together happily in the same society and country, the
results can often be extremely harmful. Racial groups in all parts of
the world today are juxtaposed in cities more often than ever during the
centuries of rural living. As was seen in the United States recently,
this often leads to smouldering hostility which cannot but break out
again at some time in the near future. Because of the cultural
diversity found in modern cities, there has developed a new individual,
often referred to by sociologists as marginal men, or cultural hybrids,
or, if that is considered misleading, as a transitional man. He is an
individual in the process of assimilation, changing from one culture to
another, often oscillating between the two poles, and often extremely
frustrated and resentful because he feels at home in neither. Invari-
ably, the modern cities are breeding an increasing number of these
individuals, who have either guilt feelings for having deserted their
own group, or may hate everything for which their group stands.
5. Of considerable importance amongst those factors associated with urban
existence which harass the personality is the emotional insecurity which
springs mainly from financial factors - the constant reminder that
nobody can really be financially secure in a competitive society.
Again and again in the past thirty or fifty years have we learnt the
lesson that in times of financial stress, of periods of conflict between
the employer and the employee, there is a far greater sense of security
amongst the rural population than in the cities, where a sudden strike,
or decline in the business activities of the industrial and commercial
employer cause emotional strain. What follows can do untold harm to

the individual's confidence, self-reliance, and his attitude to life generally. In times of inflation and rising costs, such as South Africa and many other Western countries have experienced during the past three or four years, an understandable fear grips hold of the lower and the middle income groups, whereas the inhabitant of the rural areas will derive strength and emotional stability from the knowledge that he will be able to get through whatever financial disaster may strike him. The city dweller quickly suffers from feelings of insecurity - will he be able to finance the increase in rates and taxes, the increasing costs of transport to his place of work, rising grocer's and butcher's bills, the hospital and doctors fees (which seem to double every few years), and the clothes which his children must wear if they are to get the education and training which a competitive city will demand of them? Hounded constantly by the spector of financial crisis, which the city dweller feels he cannot determine or control, he soon becomes irritable, negative in his approach, and weak in his resistance - his potential for becoming a neurotic is easily increased.

6. The real or imaginary feeling of isolation which urban man experiences when he is amongst thousands or millions of others, makes a determined onslaught on his personality. Loneliness, lack of friendship and isolation, seldom plague the rural man, for the simple reason that he is at home in his particular society; that he is recognised as an individual, and that he has a sense of belonging. In the city the individual rarely makes more than fleeting contacts, seldom has life-long friends who are interested in his wellbeing, and seldom becomes deeply involved in cultural or spiritual activities which are strong and wholesome to him.

Although sociologists, moralists and psychologists differ greatly as to the precise effects which the above six factors have on the urbanite's personality; and the so-called goodness or badness of any personality changes which may occur through urbanisation, most authorities today accept the following:-

- (a) That city life does change the personality and character of man;
- (b) That some changes enhance his mental and intellectual capacity while others undermine them and bring about moral and spiritual disintegration.

Before dealing with the tremendous challenge which the latter, the negative forces, will throw out to the leaders of the future, I wish to state very clearly that I do not belong to those who see nothing but evil, disintegration, and chaos in the cities. There have been, and there still are, many prophets of doom. Oswald Spengler, the most uncompromising of its accusers, indicates clearly in his monumental work, 'Decline of the West', that he regards a city as an evil and that it will inevitably, in the ultimate, destroy itself. 'The birth of the city', he writes, 'entails its death'. This line of thought, as you well know, comes straight from Marx and Hegel, and is well-known in contemporary thinking. But I say without fear of contradiction that the advantages of urbanisation can, and will in time, outweigh the disadvantages in respect of man's personality, his intellectual growth, and the products of his mental activities. This, I believe, will be true in respect also of the development of technological and scientific skills, and economic and social politic systems resulting from man's organisational abilities.

In respect of the advantageous impact of urbanisation on personality, one need only refer to the greater tolerance and cosmopolitanism of the city dweller; to his greater and increasing contribution to learning and the scientific approach; to his accelerated mental development which flows from a more stimulating environment; to his often greater general knowledge, and sharper powers of perception; to his wider intellectual interest field; to his keener sense of competitiveness and finesse; and to his greater

objectivity and rationalism at a higher degree of individualism which accompany the pronounced segmentation of his social world. Contrary to numerous dire predictions, and despite the prevalence in all cities of the world of the worst products of human decay and disintegration, of vice and crime, of political corruption and mental derangement, of base exploitation and slum behaviourism, it is an indisputable fact that a large proportion of the people in all cities in the world are showing strength and vitality, resourcefulness and ingenuity. Numerous facets of cultural and intellectual achievements can be directly related to the advantages and effects which urbanisation has had upon the human personality and mentality. Not only has it been proved conclusively that all that has been done to man's mind and behaviour in the city is not bad, but it has also been proved conclusively that under the stress and the competitiveness of urban living, man can achieve more and better things. Man can live as happily, and as full of life, in the city as anywhere else. The fact that we are living in a stage of transition, with much of what is called 'evil' and 'chaotic' in city life still overshadowing much of what is termed 'good' and 'orderly', must never blind us to the fact that city life has come to stay; that it is indeed going to expand, that man is going to thrive, succeed, and to develop as never before - if only the formula for all forms of good city living can be found - the challenge faces us.

From what I have already said it must be abundantly clear that the greatest challenge which faces the leaders of our time is to create cities which will bring forth the best in men and women - cities which are socially and physically planned, and which do not simply grow. New cities are needed which in time can and will replace either partially or wholly, many of the old ones which have simply 'come about' over the last hundred or two hundred years. Even if it takes another hundred years or more to plan new cities to replace the old, it will be well worthwhile. After all, as long as the contemporary industrial civilization lasts, man will live in cities. The process of urbanisation can never again be reversed. What then are the factors which have to be taken into account for improving the existing cities or creating new cities? What are the basic planning concepts? It is abundantly clear that the ideal is to create cities which combine social and human considerations with functional and economic efficiency. The city dweller must not only work under the most favourable circumstances but he must also live under them. The most fundamental need is to create conditions in which individuals feel and realise that they are members of some meaningful and recognised human society - not so many ciphers lost in a mass of amorphous housing. Clearly the most obvious approach in our planning to humanise cities lies in the sphere of physical and social planning. About this, at least, we can and should do something; about this at least a great deal is known, and a great deal of unanimity exists between people who otherwise may differ profoundly on the effects of urbanisation of man's personality.

On looking at the urbanisation problems of the Republic of South Africa, one is immediately struck by the large number of factors which favour effective planning. They are:-

1. All South African cities are relatively young and the degree of urbanisation in the country is relatively low, particularly insofar as the non-White population is concerned.
2. With one or two exceptions South African cities do not suffer from the urban squalor left over from the worst days of the industrial revolution.
3. As yet there are relatively few large cities in South Africa. In the 1970's South Africa will have only 11 urban areas exceeding 100,000 people each, and of these only three will, by then, have exceeded the one million mark.
4. South African cities have not inherited (as have most European and Asian cities), mediaeval road systems and narrow winding lanes running through their centres. Neither are they limited in their layout by such things as canals, rivers, and centuries-old sewerage networks.

5. The sprawl of most South African cities is relatively small, and they have in and around them sufficient land for urban parkways, for the creation of proper community centres, for the provision of new transport facilities, and for large open spaces in industrial, as well as residential areas.
6. The centres of most South African cities have as yet not become cluttered up, and are not as soulless and as grim as many old and new world cities.
7. In most South African cities there is already a considerable amount of community grouping, and the outlook of the population as a whole facilitates such further grouping.
8. Before the turn of the century relatively more new cities will have to be created in South Africa than in most other countries. It has been estimated that another 40 cities, with more than 100,000 people each, will have to be in existence by the turn of the century in South Africa. All this adds up to one conclusion and a very important one at that: South Africa is in a more favourable position than most countries in the world to renew its existing cities and to plan its new cities; and to ensure that conditions are created which are conducive to optimum human happiness and achievement together with optimum economic and social effectiveness.

Of particular importance in the South African setup are the attempts to organise the country's cities into communities of comprehensible size, and paramount within this framework of course is the grouping of communities by race. Separate development is, whether one agrees with the ideology or not, basically sound and scientific, if carried out properly in its humanistic, and social complexes. If properly applied, the establishment of separate and identifiable racial communities in South African cities will overcome some of the most basic problems of contemporary urbanisation. The rural migrant in the city (who by virtue of his new occupation is divorced from his rural background and customs), is isolated, lonely, depersonalised and anonymous. Nonetheless, because he lives in an identifiable racial community, he will at least for some part of the day be able to identify himself with some meaningful, comprehensible and recognisable human society which he regards as his own.

The size of these separate racial communities in South African cities will have to be watched. Already some cities have racial groups running into hundreds of thousands of individuals, and they are still increasing rapidly. There is an urgent need for research into the organisation of these large homogeneous communities, the question being, whether an attempt should not be made to organise them as a series of communities? If the latter should appear to be the more satisfactory arrangement, other questions which will have to be determined are: On what basis should these smaller communities be determined? How large should they be - 5,000, 20,000 or 40,000 people?

By and large, South African cities have so far been relatively free from the social disadvantages flowing from the lack of culturally homogeneous communities, or neighbourhoods, but here too, much more will have to be done if we wish to permanently ward-off the ill effects of isolationism. Visible expression can be given to a city's component communities by the establishment of community centres, comprising a main hall, where the larger social and cultural activities can take place, surrounded by a cluster of smaller halls or rooms, for the activities of sub-groups. Particularly in many non-White city areas, such community centres are still badly needed. To be comprehensibly planned, to function efficiently, and to act as a visual and tangible symbol of the community, such a centre needs to occupy a substantial acreage. It is not to be expected that such a complex should come into existence without the active participation of the local authority, which in the South African society is the planning authority.

It is to be regretted that in the rebuilding of South African cities the provision of some facilities (such as the construction of houses, flats, shops and factories), constitutes a profitable venture, while the provision of other vital necessities (such as open spaces, sports centres, halls and community places), is either an outright liability or at best a dubious economic proposition. The result is disasterous. Houses, flats, shops and factories are provided at a much faster rate than some of the communal facilities for which they create a demand. With the passage of time, the backlog of open space within the flat zones, for example, is likely to grow ever larger, and the possibility of remedying the effects becomes progressively more impracticable. It is by this process that the crisis in the cities of the West has grown out of hand - the gradually increasing deficit of open space does not create a sensational crisis, as would be caused by, for instance, the lack of a school. It can, however, be equally disasterous.

South Africa's old and new cities will in future have to be humanised to a far greater extent than in the past, in respect of the following:-

- a) Consideration will now have to be given to clearing certain city centres of all private transport, reserving such areas for pedestrians only. Likewise, new business centres will have to be planned in such a manner that they can only be entered on foot, or by public transport.
- b) Since the planning of transportation systems is not an end in themselves, but subsidiary to the overall planning of cities, it is most important that the alignment of roads, railways and airports, should be sensitive to the organic structure of the city as a whole.
- c) South Africa's planning regulations encourage the bringing about of beautifying features in city centres - a few trees, a fountain here and there, some grass in front of a building. As our cities are rebuilt, they will have to be enriched in many more such imaginative ways.
- d) The impact of South Africa's thoroughways on the existing fabric of our cities can be softened by parkway treatment on the road frontages. A modest start has already been made in Cape Town and in Durban, with a reservation of land for future development of urban parkways.
- e) In addition to the urban parks which most South African cities are blessed with, large regional open spaces reasonably near the metropolitan areas, are still very much needed.

I have indicated that I firmly believe that cities have come to stay; that city living can be good, stimulating and enriching; that man's intellectual and personality characteristics can be enhanced through living under a certain amount of stress and competitiveness; and that man has an entirely satisfactory future if he can blend functional effectiveness with humanising factors in the cities which he creates for his future. If all this is sufficiently realised by the leaders of our time, we need have no fear - but is it?

South Africa, fortunately, has had time to prepare itself - to contemplate the problems of planning for the most satisfactory forms of urbanisation. However, one would be justified in claiming that the task of renewing existing cities and creating new ones has, until very recently, been relegated to a place of far lesser importance than should have been the case. The reasons are obvious. The problems of urbanisation per se have been over-shadowed by other and more urgent matters - for instance, the drift of millions of non-Whites to our towns; the need for the physical and social separation of no less than four large racial groups which have spread to practically every urban area in the country; and the decentralisation of industrial growth-points, to areas which are labour intensive,

without being urban imperative. Due to these problems the question of urbanisation is, for South Africa at least, in a number of significant respects even more important than for other countries. Within the complex fabric of factors affecting our cities' futures, there are also those flowing from racial differences, the profoundness of which we still have to fathom. If what is known about the social and personal impacts of urbanisation upon contemporary man is still vague and primarily the product of guesswork, it is ten times more so in the case of those non-White people who have simply drifted to our cities without having had the good fortune, as Whites have had, of centuries of civilised living. Today already there are millions of these non-Whites living under urban conditions, and it must be accepted that most of them have come to stay. The ultimate future of South Africa's cities will therefore not be determined only by our ability to plan more satisfactorily their physical and social patterns - to so humanise them that a satisfactory inter-relatedness between environment and man will be ensured - but will be determined also by our ability to create conditions in which the millions of non-Whites who have become city dwellers will find health and happiness, economic security and a satisfactory degree of social standing. This will in time be the most important factor which will determine the future life or death, of South Africa's existing and new cities.

Upon us rests the great responsibility, the responsibility to apply ourselves in future with ever greater enthusiasm and effectiveness to the matters which in the ultimate will determine our very existence. Obviously, far more research and probing and thinking will be necessary before we can feel assured that we are in fact on the right track, and that we are well on our way to solving the problems of contemporary and future urbanisation. However, this conference is an important step in the right direction and indicative of the interest taken in this matter. In my own mind, there is no doubt South Africans have the ability and the will to work out their own salvation. We can and shall find the formula which have, in certain respects, so far been eluding the people of numerous other countries, for we realise too well, (and on this note I wish to end), that the future of our cities is also the future of our people. On what happens in our cities will depend the future of our children and their children.

I now have great pleasure, Mr. Chairman, in declaring your conference open. May the blessings of the Almighty rest upon your deliberations.

The Chairman of the Committee of Control of the Institute for Social Research, Professor Eileen J. Krige, proposed the vote of thanks to His Honour, the Administrator.

Inter alia she made the following observation:

Mr. Gerdener has emphasised the need for social and human considerations in our urban planning - the idea that we should try to have cities socially and physically planned so as to bring forth what is best in man.... he has stimulated in my mind all sorts of questions.... what struck me is how little thinking there is at present about social control in our urban areas, particularly in the new townships that are envisaged for Africans alone - the border industry townships which are going to be within African Reserves, but will nevertheless be urban areas. Now a remarkable feature of our rural African reserves is the prevailing law and order there. You have thousands of people living together under their own institutions, living a life of order with virtually no police control. But, we cannot assume that when these people are put into closer settlement, their institutions will nevertheless work automatically. Their instruments of social control are closely associated with existing spatial arrangements - with both kraals and kraal heads, with kin groups, and with districts. These cannot be transplanted into the new urban areas. Consequently there will have to be very careful planning and thinking.

THE UNIVERSITY OF TEXAS
AT AUSTIN
DEPARTMENT OF CHEMISTRY
3681 BRANDED DRIVE
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INVITATION LECTURES

The Department of Chemistry at the University of Texas at Austin is pleased to invite you to participate in a series of invitation lectures on the topic of *Electrochemical Energy Storage*. The lectures will be held on the campus of the University of Texas at Austin, Texas, from October 15 to 17, 2013. The speakers for this series are:

- October 15: Professor [Name], [Institution]
- October 16: Professor [Name], [Institution]
- October 17: Professor [Name], [Institution]

The lectures will be held in the [Building Name] at the University of Texas at Austin. For more information, please contact the Department of Chemistry at the University of Texas at Austin, 3681 Branded Drive, Austin, Texas 78792. We look forward to your participation.

CHANGING DETERMINANTS OF POPULATION
DISTRIBUTION AND URBAN GROWTH

Joseph J. Spengler
Duke University

'I see, long after A.D. 2000, cities laid out for ten to twenty million inhabitants, spread over enormous areas of country-side, with buildings that will dwarf the biggest of today's and notions of traffic and communications that we should regard as fantastic to the point of madness.'

'This, then, is the conclusion of the city's history; growing from primitive barter-centre to Culture-city and at last to world city, it ... moves on to final self-destruction.'

Oswald Spengler¹⁾

'In physical science the scale of absolute magnitude becomes a very real and important thing; and a new and deeper interest arises out of the changing ratio of dimensions when we come to consider the inevitable changes of physical relations with which it is bound up.'

D'Arcy W. Thompson²⁾

Four criticisms may be directed against much of current writing on the development of urban concentrations. First, a post-mortem-like emphasis is put upon how urban society got where it is. Second, when there is discussion of taming this process, the taming proves to be the kind of taming which the mouse-mahout imposed upon its elephant by programming its commands to *follow* those of its giant steed³⁾. Third, urban growth is considered too much apart from the forces shaping the distribution of population in space. Fourth, too little thought is given to the optimizing of man's habitat, nearly four-fifths of which could well be found in urban areas 30 years from now.

It was not always so. Aristotle expressed a widely held view when, writing of the city-state more than two millenia after the Sumerians had invented it,⁴⁾ he declared that 'every community is established with a view to some good', and the city-state with a view to 'the highest good'⁵⁾. To serve this purpose, however, Aristotle added, that it must be of the right size. 'You cannot make a city of ten men, and if there are a hundred

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- 1) Quotations from Oswald Spengler (1939): *The Decline of the West* (C.F. Atkinson trans.), II, Knopf, New York, Chp.4, pp. 101,107.
 - 2) D'Arcy Wentworth Thompson (1961): *On Growth and Form* (J.T. Bonner, ed.) Cambridge University Press, Cambridge, p.17. This book was first published in 1917.
 - 3) See Clive Entwistle's highly critical review of *Taming Megalopolis* (H. Wentworth Eldridge, ed., New York, 1967), in *New York Times Book Review*, Dec. 31, 1967, p.1.
 - 4) Samuel Noah Kramer (1963): *The Sumerians*, Chicago, Chp.3 and pp. 288-89.
 - 5) Aristotle's *Politics*, 1252^a.

thousand it is a city no longer. But the proper number is presumably not a single number, but anything that falls between certain fixed points¹⁾. He thus recognized a principle which Thompson found ubiquitous. 'Everywhere Nature works true to scale, and everything has its proper size accordingly', though, as he adds, the 'effect of scale' depends upon the relation of a thing 'to its whole environment or milieu'²⁾. This principle seems to underlie the distribution of a nation's population and the formation of its organizing centres, the city and systems of cities. What is both possible and desirable respecting cities is conditioned by the dimensions of the economy and polity within which cities and population distribution assume form. These dimensions are subject to change, with implications of which this essay is concerned.

We shall proceed by assuming that the geographical distribution of a nation's population is the product of sets of factors, namely, the range of choice confronting men and acts of 'collective' choice made by them. The first set of factors fixes the range of population distributions from among which a people may choose, if not immediately, then over time. The second set of factors determines what particular distribution is selected and helps to explain why it is selected.

Control of a nation's population distribution turns on control of these two sets of factors. In the shorter run the range of choice is exogenously determined in the main, depending as it does largely upon current technological conditions and upon a people's past response to past technological conditions. In the longer run, however, the range of choice is conditioned by the sequence of choices made over the preceding sequence of intervals. One may say, therefore, that the geographical distribution of a nation's population at any time depends in marked degree, though by no means entirely, upon the particular choices made through the past under the joint guidance of consumer sovereignty and collective action.

In this paper I shall identify components of the two sets of conditions and show how they constrain a people's options and, within broad limits, fix their choices respecting the geographical distribution of their numbers. The advantages and disadvantages associated with alternative distributional patterns will be noted at the close.

I. Conditions Affecting Range of Choice.

These conditions may be gathered into two categories, those which are operative mainly within urban centres and those which are essentially external to urban centres but incident upon these centres. It is more convenient, however, to assemble these conditions into three groups: those relating to the organizational structure of a state and its economy; those relating to the degree to which power of decision is concentrated; and those which constitute the current parameters or dimensions of state and economy. Some of these conditions overlap; some affect what we define as demand as well as what we are calling supply.

(1) Intra-urban Organizational Structure

Urban growth has been dominated by three factors which make themselves felt *within* urban centres, economies of scale, economies of complementarity and proximity, and external economies and diseconomies. The scope for each of these is conditioned, of course, by the state of transportation and communication both of which are essentially extra-urban in character.

1) Aristotle: The Nicomachean Ethics, 1170^bff.

2) Thompson, D.W. (1961): op. cit., p.17.

Economies of scale are operative at three levels, within plants, within business firms, and within agencies of the state, most of which supply services. Increase in economies of scale concentrates workers in plants experiencing such economies and hence in sets of plants or activities which are highly complementary to, or beneficiaries of, proximity to plants experiencing economies of scale. During the nineteenth century and in much of the present century, economies of *plant* scale increased and, aided by various multiplier effects, made for the concentration of economic activities and population. Under currently developing technological conditions, however, a reversal may be under way. Economies of scale seem to be diminishing, in that plants of *optimum* size often employ fewer workers than formerly. Moreover, as a society grows in affluence, an increasing fraction of aggregate demand is directed toward goods and services in which economies of scale are of limited significance. For these reasons and because economies of proximity are less important now than formerly, the advantages associated with population concentration are diminishing and opportunities for the dispersal of activities into less congested areas and even into the countryside are increasing. Whether this is generally true of operating governmental service agencies is not yet clear, though after the marginal cost of a service levels off there is no further economic advantage in the growth of its supply so long as acceptable provision is made for meeting total cost. Presumably it is size of community far more than economies of scale as such which governs the growth of governmental agencies in particular cities.

Economies of scale associated with business *firms*, as well as those connected with collectives (e.g. foundations) and administrative branches of government, had best be called economies of organizational size since, even though they are increasing, they need not make for concentration of population. Each of these three types of units is engaged in little more than the assembly, correlation, and analysis of relevant information and the formulation and selection of preferred policies and courses of action. Yet, with the development of computer techniques and improved modes of communication, authority and responsibility for the execution of policy may be devolved to lower levels of organization, at little or no cost in terms of overall co-ordination and with benefits ensuing from the involvement of lower echelons of management in the overall decision process¹⁾. Economies of organizational size need not, therefore, make for population concentration.

In the past the presence of external economies has made for conglomeration of activities and population. These economies may be limited or decreasing, however, given diminution in economies of scale and propinquity. Moreover, external diseconomies may and finally do increase faster than external economies as cities grow in size and congestion increases. Accordingly, those upon whom these diseconomies are incident must respond to them by shifting them elsewhere (if possible), or by attempting to escape them. Since these diseconomies seem to be associated in the main with concentration of activities in space, escape from them lies either in the spreading-out of existing communities, or in dispersal of activities to new centres.

By way of summary we may say that the conditions included under organizational structure made for conglomeration of population in the nineteenth and much of the present century. Now, however, at least some of these conditions are changing, and in ways conducive to population dispersal, though within limits. We are moving, or are on the verge of moving, into a post-industrial age.

1) See Brzezinski, Z. (1968): 'America in the Technetronic Age', *Encounter*, 33, 16-26 (January issue). Whether the new developments will favour 'participative management' is not clear. See Albrook, R.C. (1967): 'Participative Management: Time for a Second Look', *Fortune*, May, pp. 167ff.

(2) Distribution of Decision-Making and Effecting Power.

Decision-making power resides mainly with private entrepreneurs and the state, and secondarily with foundations, eleemosynary institutions, and other collectives. Even so, it may be variously *distributed*, often with ill effects. The objectives sought by decision-makers reflect either demands registered in relevant markets, or by electorates, or by clients of publicly-oriented collectives. Decision-making power was widely dispersed until relatively recently. It was widely dispersed in the ancient world when, as a rule, only the state could mobilize large quantities of 'capital'¹). It was widely dispersed in the Middle Ages and in early modern times; entrepreneurs operated on a small scale and had quite limited access to developmental funds. Even in the nineteenth and early twentieth centuries decision-making power remained dispersed except in times of war. Under these circumstances, therefore, the distribution of numbers in space and their assembly in cities of various sizes are likely to proceed stochastically, free of overriding plans or guiding rules, and under circumstances permitting much disparity between marginal social costs and marginal social benefits²).

By now, however, at least in some countries, the power to make and execute decisions has become quite concentrated. Accordingly, if a stochastic process has been operative, it can be greatly constrained. Consider the United States. In 1965, of all persons at work about 21 per cent were employed by the nation's 750 largest industrial firms, 17 per cent by government, and 62 per cent otherwise³). These 750 corporations, together with perhaps another 50-100, are more than mere employers of some 21 per cent of the persons at work. They are also Key Job-Makers in that they largely determine where the nation's employment is carried on. A significant proportion of the remaining 79 per cent of those working supplies the needs of the employees of these 750 corporations or meets the wants of other workers. Their employing firms may, therefore, be viewed as Secondary Job-Takers and Job-Makers.

Over a period of time the Key Job-Makers can establish new cities or enlarge small towns and cities by locating enterprises there. On the assumption that roughly two persons out of five are gainfully employed, a city of 100,000 needs about 40,000 jobs. Of this number perhaps 10-20 thousand constitute its economic base; they supply the goods and services produced for export outside and in exchange for required imports of goods and services and perhaps investments elsewhere. Multiplier effects will add something like 20-30 thousand to this basic number, most of whom will service the latter or one another⁴). Of course, if either the basal labour force, or the remainder of those working, should increase beyond the current equilibrium ratio, the under-represented category of workers would probably expand because the demand for their services had risen.

The data presented prompt the following inference. Perhaps 10

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- 1) Finley, M.I. (1965): 'Technical Innovation and Progress in the Ancient World', *Economic History Review*, 18, 31-37.
 - 2) On the role of concentrated and dispersed force see Berry, B.L. (1961): 'City Size Distributions and Economic Development', *Economic Development and Cultural Change*, 9, 573-88 (Pt. I, July 1961); also my 'Africa and the Theory of Optimum City Size', in Horace Miner, ed., *The City in Modern Africa*, (1967), New York.
 - 3) Chase Manhattan Bank (1966): *Business in Brief*, 70, 2-3 (Oct. 1966).
 - 4) On urban development see Thompson, W.R. (1965): *A Preface to Urban Economics*, Baltimore; Walter Isard, et. al., (1960): *Methods of Regional Analysis*, New York; Pfouts, R.W. ed., (1960): *The Techniques of Urban Economic Analysis*, West Trenton; Tiebout, C.M. (1962): *The Community Economic Base (CED)*, New York.

thousand individuals make the locational decisions for the 750 key corporations. While these individuals are not free to locate anywhere, they do have a wide range of choice regarding where to locate both new undertakings designed to meet increments in aggregate demand and old undertakings subject to relocation. They can, therefore, introduce a process of population distribution subject to much more direction than is produced by a blind stochastic process. Moreover, their efforts can be reinforced by the actions of governmental agencies bent upon giving direction to population distribution as well as by corporations interested not only in establishing new *urban economic bases* but also in creating, financing, and carrying through the construction of New Towns, mainly in exchange for the capital gains realizable through enhancement of land values¹). In the future, therefore, unlike in the past, population distribution could pass under the increasing control of a rational and powerful economic minority.

Whether the potential I suggest to be existent will be actualized is another matter. Modern Western man, Robert Dahl points out, has 'so far failed most profoundly in our cities', above all in the United States. 'City-building is one of the most obvious incapacities of Americans. We Americans have become an urban people without having developed an urban civilization ... We do not know how to build cities'²). Within the American city the power to decide has been subdivided and dispersed, in a manner neglectful of the regional context of urban growth and problems, and too dominated by 'an unbridled laissez faire profusion of governments' to cope with the problems emerging³). So the question rises: What is the relevant unit of government? Must a new one be devised, now that the representative nation-state has failed the city even as its predecessor, the much eulogized city-state, failed its urban population, when subjected to the combined impact of emerging empire and the growth and concentration of population. The answer, of course, as Dahl suggests, is the city, not a completely autonomous city, but a city endowed with authority co-terminous with most of the urban problems in need of solutions. The city in question will, for reasons examined later, normally be relatively small and yet quite capable of meeting in the main the issues which largely determine the good life as most conceive of it.

(3) Parameters or Dimensions of State.

Among the parameters of state, the conditions of which and changes in which affect the range of options open to a nation in respect of population distribution, the following may be noted:

(a) Natural Resources. Today these constitute less of an anchor upon population than in the past. First, in advanced countries one agriculturalist can or could supply as many as 20-40 persons, with the result that as few as five per cent of a nation's population need be tied to the soil. Second, the relative amount of labour tied to mineral resources has declined. Output per man in some mineral industries has risen greatly. Input of minerals per unit of output has declined in many instances. More ubiquitous sources and substitutes have replaced or may replace the less ubiquitous. Finally, while mineral consumption per caput is unlikely to fall, even in affluent countries, the ratio of mineral consumption to Gross National Product is continuing to fall in such countries. Nor is this trend likely to be halted even though

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- 1) See my 'Africa and the Theory of Optimum City Size', loc. cit.
 - 2) Dahl, R. (1967): 'The City in the Future of Democracy', *American Political Science Review*, 61, 953-70, esp. p.964.
 - 3) Ward, R.C. (1959): *Metropolis Against Itself*, CED pamphlet, New York, March 1959, p.45.

technological progress gives rise to increase in the demands for raw materials hitherto not of much use (e.g. heavy elements). To this statement there is one exception, namely, that as affluence increases the demand for amenities rises and with it the demand for land and environments productive of these amenities.

It is evident that employers now enjoy a wider range of locational options than they did 30-40 years ago. For example, in the United States in 1935 about 11.5 million jobs, or 28 per cent of all employees, were located close to resources¹⁾. Today the corresponding number is about 6.5 million jobs, or eight to nine per cent of the labour force. The upshot of these data is that in advanced countries resource-oriented activities immobilize only a small fraction of the population. The remainder can locate where they will, subject to constraints flowing from the manner in which activities get distributed in space.

(b) Transport. Both intra-urban and extra-urban transport have continued to improve. The former has enabled workers to become increasingly separated from their places-of-work, a condition that became necessary as factories replaced craft and other shops and cities became repositories of factories. In contrast, even in New York City as late as 1800-1840, most industrial workers, being handicraft artisans, had a place-of-work that was identical with, or in close proximity to, their place of residence²⁾. Today, in contrast, workers may travel many miles to work, particularly if they are not remunerated for travel time as they would be if paid on a portal-to-portal basis.

As a result of improvements in intra-urban transport, modern cities have become much more spread out, far more than in the Orient 75 years ago or in medieval or ancient times. Moreover, the daytime population of the central business district and other districts where economic activities are concentrated is much larger than their night-time population. Overall population density within American cities has not declined, however. It has, in fact, risen gradually over the past 150 years (though density has declined in some cities or parts of the cities), and it is not expected to decline. Indeed, freeways, mammoth passenger planes, and similar current transport developments favour the growth of larger at the expense of smaller cities despite the costs of congestion resulting³⁾. Yet even in American cities of a million or more, overall density is only a small fraction of what it was in some late medieval cities, in Aleppo and Damascus around 1900, or in some Middle Eastern cities three to four thousand years ago. It is much below what it was in some American cities in the nineteenth century.

Improvement in extra-urban transport has had two main effects. First, it has made possible the carriage of a city's imports and exports over ever longer distance. This enlarges a city's commercial area which roughly corresponds to πr^2 and tends to grow as the square of r , the radius running in any direction from a city's centre. In consequence, a given city can house an ever larger population as its external transport and r increase.

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- 1) National Resources Committee (1939): *The Structure of the American Economy*, I, Government Printing Office, Washington, D.C., p.36.
 - 2) Pred, Allen R. (1966): *The Spatial Dynamics of U.S. Urban-Industrial Growth, 1800-1914*, Cambridge, p.207.
 - 3) On American density see Marion Clawson, et. al., (1960): *Land for the Future*, Baltimore, pp. 108-110. Density approximated 22 per acre in American cities over a million in 1960, and 160 and over in Aleppo and Damascus around 1900. Woolley, L. (1957): 'The Urbanization of Society', *Journal of World History*, 4, pp. 246-47. See also Breese, G.W. (1949): *The Daytime Population of the Central Business District of Chicago*, Chicago University Press, Chicago.

This became generally possible only with the development of railways in the nineteenth century and later of other forms of ground transport as well as of air transport. Earlier, most cities were small and only those situated on seas, lakes and navigable rivers could attain large size. Even so, as late as 1800 only 36 of the world's cities housed more than 100,000 inhabitants; by 1930 there were 678 such cities. Only three per cent of Europe's population lived in such cities in 1800; by 1930 this fraction had risen to 29 per cent¹). As late as 1900 not a single American city of over 250,000 was situated away from a waterway²). Second, as these data on water transport imply, the development of efficient and cheap land transport finally freed man of the confinement of both his major areas of settlement and his points of concentration to the vicinity of waterways. He now is free to settle almost anywhere that he would. The implications of this enlarged freedom are discussed under (c) and (d) below.

Increase in the quality and decrease in the cost of external transport give rise to somewhat countervailing effects. In the main they permit fuller realization of the economies of scale, conglomeration, etc., supposedly realizable within the urban sector, for they serve to reduce what amounts to a transport 'tax'. In some measure, however, they increase occasional access to urban advantages sufficiently to make residence there unnecessary. They may also permit a double life, within the city part of the time and away from it part of the time, as affluence increases and the number of days worked per year declines.

(c) Ratio of Rural Non-Farm to Total Rural Population. A modern nation's rural population consists of two main parts, its rural non-farm and its rural farm population. The relative as well as the absolute size of the latter depends almost entirely upon output per agriculturalist. Today, as has been noted, with as little as three to four per cent of a nation's labour force required to supply its agricultural needs, its agricultural or rural farm population may comprise as little as five per cent or even less of its total population. In relatively under-developed countries the agricultural and the rural populations coincide roughly but by no means completely. With the development of transport and the spread of towns and cities, however, a considerable and perhaps growing fraction of the rural population came to consist of persons not engaged in agriculture and designatable as a rural non-farm population. In the United States, between 1920 and 1960, the total rural population increased from 51.6 and 66.3 million while the farm population was declining from 32 to 15.6 million. Today four-fifths or more of the rural population is non-farm. The pressure of population to settle in cities is cushioned, therefore, by the alternative of settling in rural non-farm areas, an alternative that may become much more important in the future. The rural population, of course, draws upon nearby towns and cities for most of the goods and services which it consumes.

(d) Urban Pattern and Urban Growth. The pattern of urban growth - i.e. the distribution of a nation's urban population among cities of varying size - is in part an outcome of the development of intra-urban and extra-urban transport which conditions the number and location of a nation's cities. It is affected also by the rate of growth U' of the urban population U whose growth depends upon the rate of growth P' of the total population P and the net number i migrating each year from rural to urban areas. The size of i in turn is conditioned by P' , by the size of the rural population R (a result of its past rate of growth R'), by the rate of increase in output per agriculturalist, and by the volume as well as the rate of increase in the stock of

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- 1) Woytinsky, E.S. and W.S. (1953): *World Population and Production*, New York, p.118.
 - 2) Hawley, A.H. (1956): *The Changing Shape of Metropolitan America*, Free Press, Glencoe, p.92. See also Gilchrist, D.T. (1967): *The Growth of Seaport Cities, 1790-1825*, Charlottesville.

capital available for financing the housing and employment and related needs of immigrants into the city.

Assume a closed economy. U' will approximate $(P'U + i)/U$. At a time when the ratio U/P is very small, the size of i is limited by the smallness of the capacity of urban centres to absorb immigrants. Then the fraction $i/(P'R)$ will be very small even though U' is high. As U grows, however, this capacity increases and $i/(P'R)$ rises until it approximates 1.0, at which time $U' = P'(P/U)$. Thereafter, if agricultural progress continues, $i > P'R$ and $U' > P'(P/U)$. Because of the decrease in R and the increase in U , however, U' will finally decline to a level falling (say) between $1.05 P'$ and $1.25 P'$. The ratio U'/P' thus falls as a country develops economically. It declined about one-third in the United States between 1910-20 and 1950-60.

Urban growth thus is subject to two constraining forces, one or the other of which will be ascendant, namely, the rate of growth of the stock of urban capital and the rate of technical progress in agriculture. The former of these forces is apt to be ascendant in a country's early developmental stage, at which time capital available to urban centres may support only a two to four per cent rate of increase in the urban population. Later on, however, agricultural progress and growth in the number of persons releasable from agriculture may become ascendant. In the past it has taken many decades to transform economies by reducing the agricultural population to something like a minimum and thereby diminishing the impending rate of urban growth to easily supportable levels.

Urban growth can proceed so rapidly that it limits the capacity of urban centres to perform their functions effectively. In the 1940's and 1950's in 34 under-developed countries the urban population grew about 4.5 per cent per year, close to the rate at which the urban population grew in a relatively wealthy United States in the nineteenth century. To equip an urban population growing so rapidly and improve conditions as well calls for an increase of much more than 4.5 per cent in the stock of urban capital, an amount hard to supply in suitable form. Whence it is not surprising that urban capital shortage becomes acute, crowded slums emerge, and urban unemployed emerge. Indeed, Colin Clark observes that 'attempts to raise non-agricultural labour force at rates as high as five per cent per year or more are likely to result in low or even negative rates of growth of industrial productivity'¹.

How will the increase in U , given some rate U' , be distributed among cities of various sizes? The answer depends significantly and immediately upon the behaviour of the ratio C'/U' and ultimately upon the determinants of this behaviour. Here C' denotes the rate of increase in C , the number of urban centres, and U' has the meaning assigned it above. If C'/U' remains near 1.0 or descends below 1.0, population will tend to crowd into larger as well as into smaller centres. As this ratio rises above 1.0, new cities will absorb much of the increase in U and thus ease the pressure of numbers into the larger centres. The effect of change in C'/U' is conditioned, of course, by other circumstances that are present. In the United States when in 1910-30, C'/U' approximated 0.63, the fractions of the population in cities of over and under 100,000, respectively, grew 34 per cent and 13 per cent. In 1930-60 when C'/U' approximated 0.92, the corresponding percentages were -5 and 30²).

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- 1) Compare Kingsley Davis (1965): 'The Urbanization of the Human Population', *Scientific American*, 213, pp. 41-53. See also Colin Clark (1967): *Population Growth and Land Use*, New York, p.259.
 - 2) U.S. Bureau of the Census (1965): *Statistical Abstract of the United States: 1965*, Washington, D.C., p.15. I have employed the definition of 'urban' in use before 1950; a comparison based on the new definition adopted in 1950 would be misleading.

(e) Computerization and Communication. Improvement in communication facilitates the transmission and assembly of information and the transmittal of decisions while computerization facilitates the analysis of information and the co-ordination of decisions. Improvement along these two lines enlarges the set of population distributions which are acceptable.

(f) Other Channels. Mention has already been made of transport and of information-communicating channels. There are other channels and media as well. Indeed, an urban centre may be viewed as the focus of a network of channels for the conduct of men, matter, and information within an urban centre and between this centre and the outside world. Of particular importance besides individuals and information are products, waste, water, and effluents¹⁾. The capacity of any channel is limited as is the number of channels that can be introduced into a finite area or environment. Moreover, the demands on channels increase at least as fast as, and sometimes faster than ($P' + g'$) where P' denotes the growth of an urban centre's population and g' denotes the rate of growth of the per caput production of that which is in need of conveyance²⁾. Accordingly, as a city grows in size, the rate of flow F_c of c , that in need of conveyance, outstrips channel capacity K_c and c accumulates unless reduced in volume, destroyed, or otherwise disposed of *within* the urban centre. Current studies suggest the possibility of reducing much urban refuse to a liquid slurry easily piped as far as necessary, together with the possibility that organic material may be separated out of this slurry and converted into compost³⁾. Even so, if F_c continues to grow, limits to an urban centre's size are reached, and long before the unit cost of handling c rises⁴⁾.

(g) Life and Fixity of Urban Capital. Today decisions respecting city development tend to be frozen in concrete, in corridors of structures, in throughfare patterns, and so on. It has always been so in some degree, but never so much as today. It is true, of course, that the capital/output ratio may be lower in present-day than in past urban sectors and that today's equipment makes possible a much faster transformation of an urban structure than did yesterday's. Yet such transformation is expensive, and it is seldom possible to concentrate enough expenditure to effect a suitable transformation. Desirable change may, therefore, be retarded, and this retardation tends to be accentuated when the burden of urban taxes is differentially incident upon the undertaker of improvements. The way out consists in part in so constructing cities that they may be changed easily, an objective sought by Spilhaus in his *Experimental City*⁵⁾. In proportion as flexibility is

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- 1) Man must rid himself not only of 'the products of his own metabolism' but also of 'the metabolites of his labour-saving slaves'. Athelstan Spilhaus (1967): 'The Experimental City', *Daedalus*, 96 (4), p.1129. See also Abel Wolman (1965): 'The Metabolism of Cities', *Scientific American*, 213, (3), pp. 178-93.
 - 2) Illustrative is the movement of traffic through the centre of a metropolitan area. This traffic increases nearly as the square of the population. See Baumol, W. (1963): 'Urban Services : Interactions of Public and Private Decisions', in H.G. Schaller, ed., *Public Expenditure Decisions in the Urban Community*, Baltimore, pp. 7-8.
 - 3) Tom Alexander (1967): 'Where Will We Put All That Garbage?', *Fortune*, pp. 149ff, 194.
 - 4) Athelstan Spilhaus (1967): op. cit., p.1129. 'Even bacterial cultures stop growing when their size is such that they can no longer get rid of their waste metabolites'. As a city and its average consumption grow, its 'waste metabolites increase' and eventually make a decrease in size necessary.
 - 5) Spilhaus, A., op. cit., pp. 1129-41. See also Wolf Von Eckardt (1968): *A Place to Live : The Crisis of the Cities*, New York.

achieved, man's power to locate cities freely and keep them adapted to his emerging needs will rise, perhaps to levels much greater than exist today.

(h) City Form. The form which a city assumes is highly varied, reflecting as it does both past history and natural barriers of variable constraining power. This form in turn conditions a variety of a city's aspects, how buildings are spaced, where activities are located, how lines of circulation are disposed, and so on. We have here, in other words an illustration of the general principle that 'growth creates form, but form limits growth'¹). Of major concern, therefore, is the degree to which a city's actual form differs from what would be its optimum form, given the functions it is supposed to perform and the values it is supposed to express²). For, given a form that is optimum, input per unit of output of that which is sought will be minimized. Solution of the problem of form resembles that discussed under (g), in that both call for flexibility and anticipatory planning.

(i) Disposable Income. A nation's gross disposable income approximates the increment in annual income plus released depreciation and obsolescence allowances. The flow of funds embodying these two components of Gross-National-Product flow, not yet being committed to specific purposes, may be used to finance a variety of purposes, among them improvement in the urban environment. This flow will be greater per caput if a nation's population is stationary, since when it is growing it absorbs resources at a rate approximating something like four per cent of national income for each one per cent of population growth.

(j) Urban Finance. The mode of financing a city's operations and/or growth affects its form, the disposition of activities within it, and the degree and direction of its growth. Taxes tend to discourage activities on which they are incident while subsidies (whether ostensible or hidden) produce an opposite effect. Decision-makers behave in keeping with the relationship between their marginal private costs and benefits. What happens to a city, however, depends also on the extent to which marginal social costs and benefits coincide. When this point of coincidence differs from that of private marginal costs and benefits, the affected residents of a city suffer a net actual or potential disadvantage, the actual or potential losses of some outweighing the gains of others. Because of its diverse effects, therefore, urban finance can narrow or enlarge the range of population distribution realizable. When, as is now true of New Towns in the United States, builders of these towns count upon rising land values for most of their gross returns, the tax system adopted must accommodate this arrangement or an equivalent mode of compensation.

(k) Urban Network. A city is not a completely autonomous unit. Itself a product of specialization, it is related complementarily, as supplier or as market, to other cities situated in its region. It is thus an element in a network which imposes a system of order upon sets of cities in which some play relatively dominant roles. Two types of theories, different but compatible, have stressed the presence of an organizing system, namely the central-place-theory

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- 1) Boulding, K.E. (1956): 'Toward A General Theory of Growth' reprinted in J.J. Spengler and O.D. Duncan, eds., *Population Theory and Policy*, Free Press, Glencoe, Illinois, p.120.
 - 2) See Kevin Lynch (1961): 'The Pattern of the Metropolis', *Daedalus*, 90 (1), pp. 79-98; also *idem*, 'The City as Environment', *Scientific American*, 213 (3), Sept., 1965, pp. 209-19; papers by Wheaton W.L.C. and Stephen Carr (1967), together with discussion, in W.R. Ewald, ed., *Environment for Man*, Bloomington, pp. 157-231; also Britton Harris (1967): 'The City of the Future : The Problem of Optimal Design', *Papers of Regional Service Association*, 19, pp. 185-98; Harris, C.D. and E.L. Ullman (1945): 'The Nature of Cities', *Annals of the American Academy of Political and Social Science*, 242, pp. 7-17.

and the rank-size rule and its variants. Of relevance here is the constraint imposed on the *ex ante* planning of cities and encompassing regions by the conditions which give rise to networks, size-ordering, and other manifestations of system in the world or region of cities¹⁾.

II. Dimensions of Demand.

Having noted in Section I the constraints which bound and delimit the range of population distributions from among which a nation's population may 'choose', we shall inquire why one distribution is actually 'chosen' rather than another. The main immediate 'cause', of course, is the market which, together with governmental constraints, generates the set of prices and costs that underlie the decisions of business firms and households and cause each to behave in such a way that one urban and regional pattern rather than another comes into existence and drifts in one direction rather than another. Our discussion is confined to a few factors. The alternative is a detailed historical study contrived as well to describe the growth process as to isolate and evaluate the mechanisms believed by theorists to be at work²⁾. Among the dimensions of demand the following seem particularly important:

(1) Rate of Growth of Aggregate Urban Income.

The demand for urban land will grow roughly at the rate $U'+ai'$ where U' designates the rate of increase of the urban population U , i' designates the rate of increase of average urban income i , and a is a constant representing income elasticity of demand for urban land and bearing a value normally <1.0 . Now let K' designate the rate of increase in K , man's consciousness of crowdedness, and A' , the rate of increase in the area A accessible to urban population U . K increases when the increase A' in A falls short of $(U'+ai')$. K' corresponds roughly to $(U'+ai')-A'$.

Man is a space-eater, *ceteris paribus*. The increase in his demand for urban land associated with increase in i is of both direct and indirect origin. It is direct in that land is a superior good. It is indirect in that man's mobility increases as i increases, with the result that K increases *ceteris paribus*; the pressure of shortage of space is intensified even though the ratio of population to area P/A is unchanged.

Increase in i , together with other changes, also produces change in the intra-urban density pattern. With C. Clark³⁾ let us write $y=De^{-bx}$ where D denotes level of density at a city's centre, y is density x miles from the centre, b measures rate of decline in density, and e is a constant. Then as average income rises and/or the cost of transport falls, b declines and, as a rule, city limits are extended resulting in an increase in urban area A . As a rule, however, A/U does not decline, U' tending to exceed A' . In the United States, for example, A/U has steadily fallen. Population per square mile in cities rose from 2,400 in 1790 to 3,380 in 1890, and 3,780 in 1950; and between

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- 1) E.g. see August Lösch (1954): *The Economics of Location*, New Haven, Parts 2 and 4; Walter Isard (1956): *Location and Space-Economy*, New York, Chp. 3, pp. 239-42; Chp. 11; Otis Dudley Duncan, et. al. (1960): *Metropolis and Region*, John Hopkins Press, Baltimore; Brian J.L. Berry and Allen Pred (1965): *Central Place Studies*, Philadelphia. This is an annotated bibliography.
 - 2) E.g. see Eugene Smolensky and D. Ratajczak (1965): 'The Conception of Cities', *Explorations in Entrepreneurial History*, II (2), pp. 90-131.
 - 3) Clark, C. (1951): 'Urban Population Densities', *Journal of the Royal Statistical Society*, 114, pp. 490-96.

1890 and 1950 from 4,400 to 6,225 in places of 100-500 thousand and from 8,225 to 11,850 in places over 500,000¹).

Constraints on choice apparently prevent an increase in A from being accompanied by enough of a decrease in D to result in an increase in A/U . While enlargement of A must exercise a substitutive influence upon D and reduce it *ceteris paribus*, it tends also to exercise a complementary effect, sometimes powerful enough to nullify the substitutive effect.

Maintenance of a relatively low density and hence of a low value for D probably entails holding city size down, below 500 or 250 thousand. In the United States in 1960, population per square mile averaged 1,950-2,811 in places of 10-50 thousand; 3,909-4,272 in places of 50-250 thousand; 4,486-5,885 in places of 250-1,000 thousand; and 13,870 in places of over one million. Beyond a point, increase in A is accompanied by too little (if any) decline in D and too much in b to reduce A/U greatly.

Let the desiderata be cities of 50, 25, and 15 thousand families of four, respectively, averaging one acre per family for residential purposes and two per family for all other purposes. The length of the radius required to support each of these three types would be, respectively, 8.65 miles, 6.13, and 4.75 miles. The implied density, 853 persons per square mile, is much below that encountered in American metropolitan centres, 1,009 to 24,679 per square mile in 1960. If overall urban density in the United States had approximated 853 miles in 1960, the number of square miles required would have been about 114,000 instead of just over 24,000, but still only 3.2 per cent of the total land area.

(2) Structure of Demand.

The structure of demand changes over time, mainly in response to increase in average income and only secondarily in response to changes in the price structure. Of primary significance is increase in that fraction of the income which is not committed to what nineteenth-century economists called necessities and convenience. This fraction - *discretionary* income - is increasing and, together with *discretionary* time (or leisure), is augmenting the relative importance of amenities, recreational opportunities, etc. At issue, therefore, is how *ease* of access to these amenities, recreational opportunities, etc., varies with city size, patterns of population distribution, and so on. If *ease* of access diminishes with city size and acceptable substitutes are not available, this lack of ease will have to be compensated for, with the result that monetary costs and margins of transference will shift to the disadvantage of population distributions responsible for diminution in ease of access. For example, if the supply of some amenities (e.g. the performing arts) is limited by their non-amenability to technological progress, they tend to be priced out of the market unless they are financially subsidized²) or can be made available under amateur (i.e. time-subsidized) auspices, an arrangement easier to effect in smaller than in very large communities.

A minor sequel to the emergence of discretionary income is increase in the relative amount of demand for differentiated products at the expense of standardized products. This shift in demand may be accompanied by an increase in the input of urban land per unit of output³). It also reduces the degree to which families may buy products on a continuous flow basis that makes 'shopping' less necessary.

1) Clawson, et. al., op. cit., p.108.

2) The economic problem involved is treated by Baumol, W.J. and W.G. Bowen (1966): *Performing Arts : The Economic Dilemma*, New York.

3) See my 'Monopolistic Competition and the Use and Price of Urban Land Service', *Journal of Political Economy*, 54, Oct. 1946, pp. 385-412.

(3) The Composition of Demand by which a city is shaped reflects the class composition of a community. Here is manifest a universal conflict, that between the vulgar mass and the sensitive, aesthetically-oriented minority. This conflict may be hidden in the form it assumes. Thus the United States, it is said, has few if any completely great cities, mainly because they lack 'a large middle-class population residing near downtown, possessing the purchasing power and the tastes to help sustain "the cathedral of the city", an exciting downtown filled with a great variety of shops, theatres, museums and other attractions, and laid out as a place of great beauty'¹⁾. Instead at night and on week-ends the middle-class flee from the uninspiring complexes of glass-and-steel towers which they occupy during the day to distant cathedral-less suburbs and dormitory towns. In the United States, for example, between 1950 and 1965, metropolitan population growth has taken place mainly outside instead of inside central cities, which have been experiencing replacement of their White population. A solution thus has not been found to Wildavsky's question: "How shall society be organized so that the preferences of the morally or aesthetically sensitive minority will triumph?"²⁾

A satisfactory answer is not easy to come by. Most people are indifferent to improving the quality of man's environment drastically. Perhaps they reflect the truth of R. Dubos's observation regarding the 'frightful threat posed' by man's adaptability, by his often 'passive acceptance of conditions which really are not desirable for mankind'³⁾. The market place cannot provide an answer, since it is not organized to give expression to options exercisable in that future whose significance we systematically underestimate⁴⁾. Perhaps this significance can be provided for through institutional arrangements, but even then the presence of an adequate aesthetic orientation will turn on the triumph of the elite over the vulgar mass.

(4) Population Growth.

So long as population continues to grow, most cities will experience growth unless city sizes are limited. Should a nation's population become stationary and its age composition stabilize, the propensity of most cities to grow would be checked and it would prove easier to accommodate each city's housing structure to the stable age composition of its population and the movement of individuals through the family and the life cycle. At present the composition of the supply of housing does not usually fit and continue to fit the composition of the demand for housing; but it could do so if, though a nation's population grew, the populations of its individual cities remained relatively constant.

(5) Attitude Toward Urban and Regional Planning.

Three conditions are likely to render the attitudes of populations more favourable to urban and regional planning, even in countries where consumer sovereignty and freedom of choice prevail:

First, the relative amount of resources devoted to public and quasi-public goods, normally supplied by agencies of the state or by private collectives, will increase and accommodate thinking to the problems involved.

Second, more power to make and execute locally oriented decisions may

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- 1) Faltermayer, E.K. (1967): 'What it Takes to Make Great Cities', *Fortune*, January, p.118.
 - 2) Wildavsky, A. (1967): 'Aesthetic Power or the Triumph of the Sensitive Minority Over the Vulgar Mass', *Daedalus*, 96 (4), p.1115.
 - 3) Dubos, R. (1965): *Man Adapting*, New Haven, p.279.
 - 4) Eugen V. Böhm-Bawerk (1923): *The Positive Theory of Capital* (trans. W.A. Smart), New York, Bk.5, Chp.3. This was published in 1888.

devolve upon cities as it comes to be recognized that here, so long as a city is not much over 250,000, local government can function most effectively if not fragmented.

Third, and possibly of greatest importance, is the effect of increase in the expectation of life at birth. It is now double or more what it was around 1800 and treble what it was in Juvenal's Rome. It is true, of course, that the margin of today's life expectancy at age ten is only 70-80 per cent above what it was before 1800, though this margin may increase. Even so, death is no longer at the centre of life as it was then, and as many as four and even five generations can co-exist today when close to half or more of a female cohort attain the age of 80. As a result, man's subjective time horizon is much longer than it was in the past, even than in 1900. The tomorrow for which he plans and in the course of which his hopes for himself or his family can be realized is a long one. His expectations, intentions, anticipations, etc., have a long 'forward reference in time'¹). Man will be much more disposed than formerly, therefore, to have his urban environment planned for the long run, for his own life and the lives of his co-existing successor generations will give promise of running many decades into the future. I am not assuming, however, that life expectancy will increase greatly above current levels and aggravate many problems now settled by death, perhaps society's greatest agent of renewal. It is not easy, of course, for the citizens of a city or a country to settle upon any one of the many available population distributions. They are not even aware, as a rule, of the range of the alternatives available. To each alternative certain costs and certain advantages are attached. Presumably that alternative is most to be preferred which yields the largest balance of advantage or benefits over costs. Unfortunately, it may not be so simple. For men differ respecting what constitutes costs and benefits, and some find to their own advantage that which is costly to others. Moreover, there is not even agreement regarding how individual preference can be aggregated and transformed into social choice, or at least brought into stable balance through bargaining²).

III. Prospect.

A prospect may be defined in one of two ways. It may refer to the probable outcome of forces now at work or expected to be at work. It may also refer to an outcome expected to be produced, in part at least, by planned action intended to bring about a specific result. At best, not even this outcome is predetermined. In Section I we drew attention to determinants of the boundaries within which available outcomes fall. In Section II we indicated some of the factors which may cause one rather than another of these possible outcomes to be realized. I shall discuss the prospect, therefore, on the supposition that planned urban growth is preferred to urban growth that is essentially under the empire of chance.

Planning urban growth requires that the objective sought be systematically defined and pursued. This urban objective cannot be a fragmented or piecemeal one. It must be inclusive and hence represent something of a compromise between three sets of interests, those of the residential population, those of the enterprises, private and public, situated in a city, and those of the suppliers of the municipal services demanded by the residential population and/or the enterprisers. Let R denote the residential component or interest, M , the municipal-service interest, and E , the enterprise component. For each of these components, there may be a range of sizes that may be called optimal. If a portion of each range overlapped a portion of that of each of the other two, there would be no problem; then the overall

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- 1) On 'subjective futureness' see John Cohen (1966): 'Subjective Time', in J.T. Fraser, ed., *The Voices of Time*, New York, pp. 262-65.
 - 2) The problem is treated by Arrow K.J. (1963) in his classic *Social Choice and Individual Value*, 2nd ed., New York.

optimum would lie in the area of overlap common to each. This may not, however, obtain and a compromise must be worked out. The size that is optimum for E is likely to be larger than that for R or M . Then a most acceptable compromise might coincide with the smallest of the sizes that is essentially optimal from the viewpoint of interest E .

In the past size has been determined by the progress of the enterprise component, in later years by those we earlier called Key-Decision-Makers. In the nineteenth century, as transport improved and economies of scale and agglomeration emerged, many cities grew in size¹). One might say that what may be pictured as an overall or aggregate supply function for E shifted downward and to the right and E expanded accordingly. City components R and M , being essentially passive, grew with E , often beyond their own optimal ranges.

It should be noted that size has two dimensions not distinguished in the two preceding paragraphs, population and area. A change in area with population given will affect costs²) as will a change in population with area given. Costs and benefits may thus be affected by changes in either dimension.

Since the growth of E is the overriding determinant of urban growth, it is upon E that attention must be focused in the main. If the growth of E is halted at the point where it enters the range that is optimal for it, given the type of city under consideration, R and M are likely to remain fairly near (if not within) their optimal ranges (which are likely to be reached sooner than the corresponding range for E as noted above).

City planning, if it is to provide much guidance, must be expressed in terms of optimum-size cities or population distributions. If we choose a number of indicators of welfare appropriate to a city's population viewed as a residential group R , we find each of these indicators to improve with size up to a point, though not at a point identical for each³). Similarly, with M , studies of municipal services find the unit cost of most begins to rise after a point⁴). Furthermore, if a city is to function effectively as that unit of local government which deals with man's household concerns, it cannot exceed a certain size; some put this size at not more than 200,000⁵). This size is in line with that of Spilhaus's *Experimental City*, designed not to exceed 250,000, to be not less than 100 miles distant from any other urban centre, and to consist in an intense population centre surrounded by ample open land⁶). It is probable that, neglecting E , the city sizes optimal from the vantage points of R and M will not exceed 250,000.

Supposing this to be true, two problems emerge. First, *all* costs and benefits associated with the expansion of E beyond a level compatible with a city of 250,000 must be examined very carefully lest such expansion take place when not warranted by the marginal cost/benefit ratio for E . Second, whatever

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- 1) E.g., see Williamson, J.G. and J.A. Swanson (1966): 'The Growth of Cities in the American Northeast, 1820-1870', *Explorations in Entrepreneurial History*, 4 (1), pp. 1-101.
 - 2) E.g., see Shechler, H.B. (1961): 'Cost-Push Urban Growth', *Land Economics*, 37, February, pp. 18-31.
 - 3) E.g., see Otis Dudley Duncan (1956): 'Optimum Size of Cities', in J.J. Spengler and Duncan, eds., *Demographic Analysis*, Glencoe, pp. 372-85.
 - 4) Some of these costs have been discussed by Neutze, G.M. (1965): *Economic Policy and the Size of Cities*, Canberra; Thompson, op. cit.
 - 5) Dahl, op. cit., pp. 968-70.
 - 6) See his address, 'The Experimental City', distinguished lecture presented to the American Association for the Advancement of Science, in December, 1967, by Athelstan Spilhaus, President of the Franklin Institute, Philadelphia, Pa.

pans out to be the optimum size reflective of interests R , M , and E , must be kept so by appropriate legal measures, by measures now non-existent.

Conclusion.

I shall not attempt to resume the argument. Four points only need to be made. (1) The bulk of the population of any and all states will be situated in cities. (2) The quality of man's life in the future turns on what he does with those cities. (3) Policies intended to guide city growth need to reflect the interests of all individuals all the time and not, as at present, those of particular interests only. (4) Such policies seem to be realizable under modern conditions.

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Focus on Cities' Conference 1968
WORLD URBANISATION AND ECONOMIC DEVELOPMENT*

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In 1968 the world had almost 3.5 billion people. Of these, more than 1.3 billion, or about 37 per cent, were living in urban places, leaving some 2.2 billion, or 63 per cent, who were rural. Among those living in urban places, approximately 776 million - representing 22 per cent of the earth's inhabitants - were found in cities of 100,000 or more inhabitants.

Obviously, by the standards of a highly industrial nation, the world as a whole is not yet extremely urbanised. The United States, for example, has about 75 per cent of its population in urban places, and 57 per cent in places (Urbanised Areas) of more than 100,000. Compared to this, the entire globe, with more than six-tenths of its people classified as rural, is still in a predominantly agrarian condition. Yet the degree of urbanisation that the entire world has achieved today is not only unprecedented on a global scale but is very recent even on a regional or national scale. The world today stands approximately where the United States stood in 1900. It stands where Great Britain, the first nation to become highly urbanised, stood in about 1850. Clearly the world as a whole is not lagging far behind its most advanced nations in the process of urbanisation.

The speed of urbanisation around the globe is demonstrated by Table I.

TABLE I
 Proportion of the World's Population Living in Urban Places
 and in Places with more than 100,000 Inhabitants

Year	World's Total Population (millions)	Urban Population (millions)	Per Cent Urban	Population in Places of 100,000 ¹ or more (millions)	Per Cent in 100,000+ Places
1950	2,502	706	28.2	405	16.2
1960	3,013	994	33.0	588	19.5
1968	3,475	1,296	37.3	776	22.3

1) Data are for Urbanised Areas - that is, the actual zone of urban settlement rather than the city proper - whenever available or capable of being estimated. When figures for urbanised areas or similar units could not be found or estimated, information for Cities Proper was used.

Source: The figures for 1950 and 1960 are summations of data on individual countries - data compiled or estimated by International Population and Urban Research, University of California. The figures for 1968 are

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interpolated on the basis of the 1950 and 1960 data and projections for 1970 also made by IPUR. Percentages are calculated from absolute figures less rounded than those shown.

The earth's urban population has almost doubled in the last eighteen years, as has the population in cities, while the total population has risen only by something more than a third. In average annual terms, the average increase per year for the entire human population between 1950 and 1968 was 1.8 per cent (a figure that is without precedent), but the rate for the urban population was 3.4 per cent and that for the city population was 3.7 per cent. It is this disparity between growth in the total population and growth in the town and city population that is producing the rapid increase in the *proportion* urban. Table II shows the change since 1950 in terms of three indices of that proportion.

TABLE II

Indices of World Urbanisation, and their Rate of Change

Type of Index	Index		Average Per Cent Growth Per Year
	1950	1968	
Percentage Urban	28.2	37.3	1.5
Percentage in 'cities' of 100,000+ persons	16.2	22.3	1.7
Davis Index*	15.4	21.6	2.1

*This index weighs larger urban places more heavily than smaller ones. As applied in the present case, it adds the percentage in urban places, in cities of 100,000 and over, in cities of 500,000 or more and divides by four.

Source: Same as in Table I.

These figures for the world as a whole are derived from data compiled or estimated by my co-workers and me at our research office in Berkeley. The data are the result of several years' effort during which, for every country of the globe, we have arrived at figures for the populations of the urban and rural sectors and for individual cities of 100,000 or more inhabitants, all at the same dates. So far as we know, these are the only world figures based on data pertaining to specific years and covering all countries¹⁾. These materials make it possible to speak with some confidence about the level of world urbanisation and its trend.

The definition of 'urban' used in the project is normally that of the country itself, but in some cases, when the definition was too lenient or too restricted, or when there was none at all, we have supplied one ourselves. For countries in which no figures on the rural-urban classification were given, we estimated it on the basis of the best data available. Sometimes such estimates could be prepared on the basis of census data or official estimates on individual towns and cities, or on towns above a certain size. In general, the definitions used by the various nations in their censuses tend

1) The basic data for all countries of the world in 1950, 1960, and 1970 are from Kingsley Davis (1969): *World Urbanisation, 1950-70, Vol. I, Basic Data for Cities, Countries, and Regions*, Institute of International Studies, University of California, Berkeley. This volume is in the Population Monograph Series jointly sponsored by the Department of Demography and by International Population and Urban Research, University of California.

to be reasonable in the light of the conditions encountered. A densely settled agrarian country in which the peasants habitually crowd together in villages will usually count a place as urban only if it has more than 4,000 or 5,000 inhabitants; while an advanced and lightly populated country, with farm families scattered out on their farms, will often count a community as urban if it has only 1,500 people in it. A uniform definition for all countries would result in more distortion than a definition that is variable and adjusted to local conditions¹⁾.

In assembling statistics on all places of more than 100,000, we can deal with the distribution of populations by size of community and can study the changes in each size-group considered separately. For instance, we can ascertain the population living in 'rural' areas, the population living in 'towns' (that is, living in places that are urban but are smaller than 100,000 inhabitants), and the population living in various size-classes of cities beyond 100,000 inhabitants. Table III shows the distribution of the world's population in four categories by size of place. Noteworthy is the fact that already nearly 12 per cent of the earth's people live in cities of a million or more inhabitants, whereas in 1950 only 7.2 per cent of them did so. The number of people in these million-plus cities, 403 million, is practically identical with the number who, in 1950, were living in places of 100,000 or over.

TABLE III

Distribution of World's Population according to Size of Place

Rural-Urban Category	Population (millions)			Percentage in Each Class		
	1950	1960	1968 ¹⁾	1950	1960	1968 ¹⁾
World Total	2,502	3,013	3,475	100.0	100.0	100.0
Rural	1,796	2,019	2,179	71.8	67.0	62.7
Towns	302	405	519	12.1	13.5	14.9
<u>Cities</u>						
100,000 to million inhabitants	224	309	373	8.9	10.3	10.7
Million and over inhabitants	181	279	403	7.2	9.3	11.6

1) The 1968 figures are estimated by interpolation between the 1950-1960 date and the 1970 projections.

Source: Same as in Table I.

Future Urbanisation of the World.

In Table II are shown three indices of urbanisation. The first is simply the proportion of the population defined as 'urban'. It is the most universal and elementary measure, but it has the disadvantage of drawing the line at a low level. In this respect it is something like literacy as a measure of educational achievement in a nation. An index of urbanisation

1) The problem of definition is more fully discussed in Davis, K. (1969): *World Urbanisation, 1950-1970* : op. cit., Vol.1, Chp.2. The chapter gives the distribution of the world's countries and the world's population according to the definition of 'urban' used.

that draws the line at a higher level is valuable, at least as a supplementary index. For this reason I have used as a second index the proportion of the population living in cities of 100,000 or more in size. One can also reason in terms of places 20,000 and over, or in terms of places 1,000,000 or over. It is also possible to use a composite index that gives more weight to cities in proportion to their size. There are several such composite indices, but I use only one here - a simple index that gives each urban size-class a weight equal to its number, starting with the lowest class. Thus, if there are four classes, the lowest class is given a weight of one and the highest class is given a weight of four¹⁾.

With the help of such indices we can describe the growth or urbanisation in the world and analyse its implications for the future. If the proportion urban were to continue to rise as it has done since 1950, the time required for the human race to become predominantly urban would be very short. As exhibited in Table IV, it would take only 19 years from 1968 for the proportion urban to reach 50 per cent, and only 64 years for it to reach 100 per cent. If the change in the proportion in cities of 100,000 and over were to continue as it did between 1950 and 1968, the proportion would reach 50 per cent in 45 years and 100 per cent in 83 years. Even more thought-provoking is the calculation that half the human species would be living in cities of over a million in 55 years and all of it would be living in them in 82 years!

TABLE IV

Years Required for World to Reach Given Levels of Urbanisation,
at 1950-1968 Rate of Change

Proportion	Estimated Per Cent in 1968	Average Per Cent Annual Rate of Change	Years to Reach	
			50 Per Cent	100 Per Cent
In urban places	37.3	1.56	19	64
In cities 100,000+	22.3	1.81	45	83
In cities 1,000,000+	11.6	2.67	55	82

At that time - in the year 2050, when most of our grandchildren would still be living (if they wanted to) - the world's total population would be about 11 billion if it keeps growing as it has been. If everybody lived in a city of at least a million, the largest city would have to be rather large by present-day standards. Indeed, assuming the world had a totally integrated economy, the largest city would contain over a billion inhabitants²⁾.

1) This composite, or cumulative type of index was first used by me in a paper with Ana Casis. 'Urbanization in Latin America', *Milbank Memorial Fund Quarterly*, Vol.24 (April 1946), pp. 2-3.

2) In the United States in 1960 there were 153 urbanised areas of over 100,000 inhabitants. The largest of these, the New York Urbanised Area, had 14,115,000 people in it. It was thus 141 times the size of the smallest UA (within the size-limit specified), and it constituted 15.5 per cent of the total population in all UA's of 100,000 or more. In the future world, with everybody in cities of more than a million, the size of the largest city would depend on the number of cities as well as the total population. If there were only 200 cities but a total population of 11 billion, the *mean* size of city would have to be 55 million! However, the cities would not, if they followed the

Another way of seeing where recent trends would lead is to ask what the world's urbanisation would be in 1985 and in the year 2000 if recent trends continue. The answer is given in Table V. By 1985, only 17 years from 1968, more than one-sixth of the world's population would be living in cities exceeding a million inhabitants, and by the year 2000 more than a fourth of them would be doing so. Another significant implication of the present trend is that the rural population would *drop* between 1985 and the year 2000, not only as a proportion of the world's population but as an absolute number as well¹⁾. It would fall from 2.44 to 2.42 billion in fifteen years. At the other end of the scale, the biggest gainer would be the biggest cities. The class of cities exceeding a million inhabitants would more than double its population in fifteen years, and almost double its proportion of the total.

TABLE V
Projected World Urbanisation, 1985 and 2000, assuming
Continuance of 1960-68 Rates

Population Category	Actual Population ¹⁾		Projected Population ²⁾	
	1960	1985	1985	2000
POPULATION (Millions)				
<u>World Total</u>	3,013	4,740	4,740	6,234
Rural	2,019	2,442	2,442	2,423
Urban	994	2,298	2,298	3,810
All cities 100,000+	588	1,356	1,356	2,474
Cities 1,000,000+	279	851	851	1,666
PROPORTION (Per Cent)				
<u>World Total</u>	100.0	100.0	100.0	100.0
Rural	67.0	51.5	51.5	38.9
Urban	33.0	48.5	48.5	61.1
All cities 100,000+	19.5	28.6	28.6	39.7
Cities 1,000,000+	9.3	18.0	18.0	26.7

- 1) From Table I.
- 2) Projected by assuming that the *world population* continues to grow at its 1950-68 rate, and that the rate of change *in the proportion urban* and *in the proportion in cities* continues at the 1950-68 rate. Other kinds of assumptions yield different projections, even when based on 1950-68 trends. See text.

2) Contd. ordinary pattern, distribute themselves equally about the mean. The mean size of UA in the United States in 1960 (excluding those under 100,000) was 596,444, but there were only 32 out of the 153 that were above the mean. New York's population was 24 times the mean size. If the world's chief city were 24 times the mean size under the hypothetical conditions being discussed, it would have 1.26 billion people.

- 1) It should be explained that this projection of future trends is based on the assumption that the rise in the urban proportion is the determining factor, and that within the urban category the growth of the biggest cities is the determining element. Some such assumption has to be made, because an extrapolation of the different urban classes on the basis of a constant rate of growth derived from 1950-1968 will wind up with more people than the extrapolation of the world population

Of course, there is no indisputable reason to think that the share of the world's population living in towns and cities will continue to increase in the future at the same rate that it has done recently. The process of urbanisation, as measured by the proportion living in urban places, tends to follow a logistic type of curve, approaching 100 per cent ever more slowly after the inflection point is reached rather early in the transition. Our first extrapolation to the absolute saturation point is therefore unrealistic, and our second extrapolation to 1985 and 2000 is uncertain because we cannot be sure where the inflection point in the trend is. Nevertheless, it is necessary to extrapolate recent trends in order to determine where they are heading. The extrapolation brings home to us how extremely rapid for the world as a whole, the current rise in urbanisation is.

A more conservative approach to estimating future urbanisation is to take as a model a now developed country (preferably a large one). For this purpose, the United Kingdom will not do, because its urbanisation was the earliest on record and was consequently very slow. On the other hand, Japan will not do either, because it was the most recent country to move through the process of industrialisation to a mature level, and its rate of urbanisation was extremely rapid. The United States would appear to offer a better possibility, and to investigate its suitability we can examine its past history. It was in 1898 that the United States had the same proportion urban (38 per cent) that the world as a whole has today (37 per cent in 1968). It was about 1912 that the United States had the same percentage in cities of 100,000 or more (22.3) that the world has now. Table VI compares the indices for the world in 1950 and 1960 with the most nearly corresponding census dates in the United States. It appears that the world as a whole is some 60 to 70 years behind the United States in the process of urbanisation, but before we can use this fact as a basis for estimating future world urbanisation, we have to ask another question.

TABLE VI

Dates when Indices of Urbanisation in United States were similar to those of the World in 1950 and 1960

Indices of Urbanisation	World		United States	
	Year	%	Year	%
Per cent urban	1950	28.2	1880	28.2
	1960	33.0	1890	35.1
Per cent in Cities of 100,000+	1950	16.2	1890	15.4
	1960	19.5	1900	18.7
Per cent in Cities of 1,000,000+	1950	7.2	1890	5.8
	1960	9.3	1900	8.5

Sources: For the world, same as Table I. For United States, computed from Bureau of Census (1960): *Historical Statistics of the United States, Historical Times to 1967*, Bureau of the Census, Washington, p.14.

1) Contd. growth will show.

The projection in Table IV and Table V are made by first extrapolating world population growth on the basis of the 1950-1968 trend; then the proportions urban and in cities are extrapolated; and finally the extrapolated proportions are multiplied by the world population to get the population projection for the urban and city categories.

The absolute loss of rural population is a typical phenomenon in the

We have to ask whether, when the United States was at the level of urbanisation recently shown by the world as a whole, its rate of change in urbanisation was also approximately the same. If the answer is negative, we cannot safely use the United States as a model for projecting the future world trend. As Table VII shows, the rate of change in urbanisation in the United States at that time was only slightly faster than that found in the world as a whole recently. Since we know that rates of change did not continue in the United States as they were moving around 1900, it appears to be a reasonably good model for projecting the future world trend in urbanisation.

TABLE VII

Similarity of Rates of Change between World in 1950-60 and United States when, in 1880-1900, the United States was at a Similar Level of Urbanisation

Population Characteristic Examined	Average Percentage Annual Growth	
	World 1950-60	United States 1880-1900
<u>Indices of Urbanisation</u>		
Proportion urban	1.57	1.73
Proportion in cities 100,000+	1.88	2.08
Proportion in cities 1,000,000+	2.52	3.82
<u>Population Growth</u>		
Total population	1.88	2.10
Rural population	1.18	1.21
Urban population	3.47	3.85
Town population	3.00	3.57
Population in cities 100,000+	3.82	4.22

Sources: For the world, same as in Table I. For the United States, same as in Table VI.

The projections made by using the American model are shown in Table VIII. Comparison with Table V shows that, for 1985, both models yield substantially the same results, but for the year 2000 the projections based on the American paradigm clearly fall behind those made by extrapolation. In other words, although the United States was moving slightly faster around 1900 than the world was moving around 1960, its trend later slowed enough to more than compensate for the difference. It is noteworthy, however, that in both projections the future process of urbanisation in the world as a whole turns out to be extremely rapid. Even by the slower model, the proportion of the world's population living in urban places will be around 55 per cent by the end of this century. In absolute numbers, the projections are even more striking. For instance, the number of people living in cities of 100,000 or more by the end of the century may equal the total population that the world had in 1950. The population living in cities of over a million may well exceed the entire urban population of today.

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- 1) Contd. process of urbanisation, and this suggests that our projection method has some justification. A separate publication will deal with the rural population specifically.

TABLE VIII

Projected World Urbanisation, 1985 and 2000, assuming
Historical Growth Rates of United States

Population Category	Actual Position ¹⁾		Projected Position ²⁾	
	1960	1985	1985	2000
POPULATION (Millions)				
<u>World Total</u>	3,013	4,586	4,586	5,231
Rural	2,019	2,440	2,440	2,380
Urban	994	2,146	2,146	2,851
All cities 100,000+	588	1,330	1,330	2,035
Cities 1,000,000+	279	752	752	1,543
PROPORTION (Per Cent)				
<u>World Total</u>	100.0	100.0	100.0	100.0
Rural	67.0	53.2	53.2	45.5
Urban	33.0	46.8	46.8	54.5
All Cities 100,000+	19.5	29.0	29.0	38.9
Cities 1,000,000+	9.3	16.4	16.4	29.5

1) From Tables I and III.

2) The projections were made on the assumption that the world as a whole will follow the trend in urbanisation that the United States manifested after it reached the world's 1960 level of urbanisation. First, the total population was projected by giving the world's 1960 population the same rate of growth that the United States population exhibited for 25 and 40 years after 1900. Then the percentages in urban categories were projected by finding the points on the United States curve 25 and 40 years after it reached the world's 1960 percentage. (The United States reached the world's 1960 per cent urban in 1888, the world's 1960 per cent in cities in 1903, and the world's 1960 per cent in cities of a million or more in 1912. The city projections for the year 2000 are probably too high owing to the influence of the definition change, a switch to Urbanised Areas, in 1950 in the United States.)

It is clear that the most fundamental difference shown by the two projection models pertains to the growth of the total population. The United States population growth slowed down noticeably after 1900, despite the help of massive immigration. Extrapolation of recent *world* growth allows for no such reduction. The difference between the two projections with respect to the urban category is therefore much greater for the population than for the proportion. In fact, since the United States model predicts a lower percentage urban as well as a slower rate of population growth, the difference in projected urban population is very great: it is almost a billion people. In Table IX the two projections for the year 2000 are compared. This comparison suggests a basic difference in the two models. The United States changed not only its process of urbanisation but also its rate of population growth. By doing so, it was able to reduce its rural population and thus help in the modernisation of agriculture (the model - Table VIII - shows a smaller rural population in the year 2000 than it does in 1885, despite a 14 per cent rise in total population during the 15-year interval). The United States accomplished this decline in agriculture without forcing an astronomically large population into the cities. If the world as a whole tries to maintain the recent trend, it will produce a fantastic increase in the population of cities. For example, the extrapolation shows that by the year 2000 the cities of a million or more may have six times as many people living in them as are living in such places now. The change in the population in various categories according to the two models is shown in Table X.

TABLE IX

A Comparison of Two Different Projections of World Urbanisation by the Year 2000

Population Category	POPULATION (Millions)			Difference as Per Cent of American Model
	Extrapolation Model	American Model	Difference	
Total	6,234	5,231	1,003	19.2
Rural	2,423	2,380	43	1.8
Urban	3,810	2,851	959	33.6
Cities 100,000+	2,474	2,035	439	21.6

TABLE X

World Urbanisation in 1960 Compared with Two Projections for the Year 2000

Population Category	Actual Population in 1960 (Millions)	Projected to Year 2000 (Millions)	
		Extrapolation	U.S. Model
World	3,013	6,234	5,231
Rural	2,019	2,423	2,380
Urban	994	3,810	2,851
Cities 100,000+	588	2,474	2,035
Cities 1,000,000+	279	1,666	1,543

If urban population growth is a potent cause of urban problems (actually it may well be the most powerful cause), then whichever model we take forecasts major urban problems during the next three decades. The forecasts can prove to be drastically wrong only by virtue of rigorous population control or a major world calamity. Of the two possibilities, the latter seems more probable.

Growth of Population by Size of Place.

There is a common myth that cities tend to grow faster the bigger they are. The myth apparently arises from an illusion created by three facts: (1) Given the same rate of growth, the bigger of two cities will show the greater *absolute* gain in population. (2) Any fixed set of size-classes has an *open class at the top* which, when population in general is growing, expands faster than the others. (3) As urbanisation progresses, there is an upwardly shifting line between the smaller places that on the average are growing slowly or declining and the larger places that are increasing rapidly. Let us deal briefly with each of these sources of confusion.

With respect to the first source we know that people tend to confuse absolute and relative growth. For example, Johannesburg during the period from 1951 to 1960 increased its population by 269,000. This increment alone exceeded the entire population (249,000) of another South African city, Port Elizabeth, and it far overshadowed Port Elizabeth's own increment (102,000) between 1951 and 1961. In a very concrete sense, then, the problem of urban growth was greater in Johannesburg than in Port Elizabeth, and this fact tends to be interpreted as meaning that the rate of growth was faster

there. Actually, however, the increase was only 30 per cent in Johannesburg as compared to 54 per cent in Port Elizabeth.

The illusion that the bigger cities have the faster growth also comes from the habit of analyzing growth in terms of fixed size-classes. If the total population is growing, the top urban class will grow more rapidly even if the relative position of the individual cities remains constant, because new cities can move into the top class but cannot move out of it. Thus, in South Africa the class of cities of more than half a million increased by 81 per cent between 1951 and 1960, while the cities of 100,000 to half a million increased by only 10 per cent. The difference is explained by the fact that one city (Durban) entered the top class during the period. A corrective is obviously to take the cities as they were classed in 1951. When this is done, the cities of 100,000 to 500,000 in South Africa are found to have increased by 40 per cent, those of 500,000 or more by only 34 per cent.

If we work with only two size-classes - 'rural' and 'urban' - then the second is an open-ended class. If urbanisation is occurring, this class is by definition growing faster than the first, or rural, class. However, as urbanisation proceeds it is quite possible - and seemingly probable - that the line between the slow-growing or declining places and the fast-growing ones tends to shift upward. It may eventually come about, therefore, that places of less than 20,000 (except those that are attached to a bigger urbanised area) will eventually decline, and that ultimately the line will shift up to near the 50,000 level.

With these considerations in mind, let us look at the world data. At first glance, it looks as though the larger places are certainly outstripping the smaller ones. As the first column of Table VII shows, the earth's rural population grew by 1.2 per cent per year between 1950 and 1960, the town population grew by 3.0 per cent, and the places of 100,000 or over grew by 3.8 per cent. It requires an act of will to refrain from concluding that the larger the size of place, the faster the population is growing. But let us break the places down into finer classes, so as to relegate the top, or open-ended, class to a relatively small proportion of the distribution. With our data, we cannot make finer gradations among the 'towns' (urban places of less than 100,000) but we can do it for the places above 100,000. Table XI shows the results. Now the interesting thing is that the biggest cities show a tendency not to grow as fast as the smaller ones. When we analyze only the size-classes as they were constituted in 1950 (the last two columns of the table), we find that the fastest increase was exhibited by the smaller cities - those in the range between 100,000 and 2,000,000. The very biggest cities (with over eight million) increased even more slowly than the rural population did.

Why this result? There are three explanations, and all of them probably have some validity. In the first place, the bigger cities - those over four million - are found primarily in the highly industrial countries. In 1950 there were ten of these cities, and eight of them were located in the most industrial areas. It is precisely in the most industrialised countries that urbanisation is proceeding least rapidly and where, as a result of low overall population growth, the urban populations are not growing rapidly. On the other hand, a higher proportion of the smaller cities is found in under-developed areas; in these areas the urban population is skyrocketing, both because urbanisation is in its rapid phase and because the overall population growth is extremely rapid. In the second place, it may be that the largest cities show the greatest amount of de-concentration and that therefore it is harder for the statistics to keep up with their actual spread. This would fit with the fact that they are concentrated in the highly industrialised countries, because it is in such countries that urban de-concentration is mainly occurring. Finally, in the third place, it may be that there is human resistance to living in places of much more than four million, with the consequence that the largest cities are attracting fewer people than the smaller and medium-sized ones. Attractive as this hypothesis may be to anti-urbanites, I am afraid it must be labeled as speculative

TABLE XI
Population and Growth Rate of Places by Size, 1950-1960

Size of Places	Population (Millions)		Average % Annual Growth	1960 Population of 1950 Size-Classes	Average % Annual Growth, 1950-60
	1950	1960			
Rural	1,796	2,019	1.18	n.a.	n.a.
Towns (<100,000)	302	405	3.00	n.a.	n.a.
100,000-500,000	151	212	3.32	209	3.27
500,000-1,000,000	72	97	2.93	99	3.19
1,000,000-2,000,000	73	100	3.20	98	2.95
2,000,000-4,000,000	38	73	6.75	52	3.15
4,000,000-8,000,000	47	91	4.21	61	2.71
Over 8,000,000	23	35	4.29	25	0.99

Note: 'n.a.' stands for 'not applicable'.

until further information is available. I attribute the relatively small growth of the places of over four million mainly to our first explanation - namely, that they are found predominantly in countries that have passed their rapid phase of urbanisation and that have a relatively slow total population increase. The second explanation probably also operates to some extent. It is very difficult to know where to draw the boundary around the New York, Tokyo, London, Chicago, or Los Angeles urban complexes. Allowing for these factors, one would have a hard time finding much room for an explanation in terms of human aversion to big cities. Apparently, human beings can become accustomed to almost anything.

Developed versus Under-developed Regions

Obviously, a correct interpretation of the pattern of change in the world as a whole depends on knowing the differential distribution of various traits, such as city size, as between the developed and under-developed parts of the globe. Let us therefore turn to the question of relative urbanisation in these parts.

If we split the world into two groups¹⁾, we see at once that the under-developed group has a far greater share of the world's total population than it has of the world's urban population. The developed regions as a whole are three to four times as urbanised as the under-developed regions. The difference is impressive. However, since the under-developed

1) For simplicity, we have defined the under-developed countries as follows: Asia (except Israel and Japan); Africa (except South Africa); Latin America (except Argentina, Puerto Rico, Uruguay, and Venezuela); and Eastern and Southern Europe (except Albania, Bulgaria, Greece, Malta, Portugal, Spain, and Rumania). The rest of the world we have classified as developed. One can quarrel with such a division. For instance Chile might well have been put into the developed category as also Hong Kong, Singapore and Spain. Fundamentally, shifting individual countries in this way makes little difference in the final result.

areas loom so large in the total picture, they have almost as many urbanites, and almost as many cities, as the developed regions do. From Table XII we can calculate the percentage of the world total that the under-developed areas have in each category.

TABLE XII

Urbanisation in Developed and Under-developed Regions, 1950 and 1960

Population Category	World	Developed Areas	Under-developed Areas ¹⁾
<u>1950</u>			
<u>Population (Millions)</u>			
Total	2,502	804	1,698
Rural	1,796	379	1,417
Urban	706	425	282
Places 100,000+	405	260	144
No. of places	961	572	389
<u>Percentages</u>			
Urban	28.2	52.9	16.6
Places 100,000+	16.2	32.4	8.5
<u>1960</u>			
<u>Population (Millions)</u>			
Total	3,013	919	2,093
Rural	2,019	361	1,658
Urban	994	558	436
Places 100,000+	588	378	241
No. of places	1,301	748	553
<u>Percentages</u>			
Urban	33.0	60.7	20.8
Places 100,000+	19.5	37.8	11.5

1) Under-developed: Asia (except Israel and Japan); Africa (except South Africa); Latin America (except Argentina, Puerto Rico, Uruguay, and Venezuela); and Eastern and Southern Europe (except Albania, Bulgaria, Greece, Malta, Portugal, Spain and Rumania). Developed: the rest of the world.

Today over four-tenths of the world's urban people and also of its cities are in areas that are under-developed. The percentage could be raised or lowered slightly by shifting the marginal countries from one group to the other; but in any case one can see that urban problems affect almost as many people in essentially agrarian nations as are affected by them in industrialised nations.

Change in the Urban Proportion versus City Growth.

It will be noticed that the under-developed countries have a higher percentage of the world's total population in 1960 than in 1950. The reason is that we have kept the areas constant. To be realistic we should have allowed some countries to change category between the two dates, which would have had the effect of equalizing the two percentages or perhaps

TABLE XIII

Some Indices of the Extent of Urbanisation in the Under-developed Countries of the World as a Group, 1950 and 1960

Variable Examined	Per Cent of World Total in Under-developed Countries	
	1950	1960
Number of Countries	79.4	79.4
Total Population	67.9	69.5
Rural Population	78.9	82.1
Urban Population	39.9	43.8
City Population	35.7	40.9
Number of cities	40.5	42.5

even making the 1960 percentage lower. Yet there is no getting away from the fact that the under-developed regions have a much higher rate of population growth than the developed regions have. Between 1950 and 1960 the total population of the two groups of countries grew as follows: developed areas, 14.3 per cent; under-developed areas, 23.3 per cent.

The higher rate of population growth, if other things were equal, would tend to make the world increasingly under-developed. Fortunately, other things are not equal. Economic development is occurring in the under-developed countries, a fact that is manifest by the rise in the urbanisation itself. For instance, between 1950 and 1960, the two groups of countries gained in urbanisation as follows:

TABLE XIV

Percentage Urban Increase in Population, 1950-1960, for Developed, in contrast to Under-developed, Countries

Type of Country	Percentage Gain, 1950-1960	
	In Proportion Urban	In Proportion in Cities 100,000+
Developed	14.9	16.9
Under-developed	25.5	35.2

The under-developed countries start from a lower level and could therefore be expected to make greater relative gains, given the logistic shape of the urbanisation curve. Nevertheless, the rise in the proportion in cities in under-developed regions is striking. There can be no doubt that these regions are urbanising faster than the developed regions at the present time. This confirms the fact that the developed regions have passed the inflection point in the urbanisation curve and are approaching a saturation point.

In both the developed and the under-developed parts of the world, however, the growth of the urban population is much more rapid than the rise in urbanisation - that is, in the proportion urban. The reason is that both groups of countries have a growing total population at the same time that they are continuing to urbanise. If there had been no overall population increase, the urban population would have grown only as fast as the urban proportion. The under-developed nations of the world could have accomplished a 25.5 per cent rise in the proportion urban with only a 25.5 per cent growth of their urban population. Since it is the rise in the *proportion* urban that

TABLE XV

A Comparison of Urban Growth in Developed and Under-developed Countries, 1950-1960

Type of Country	Per Cent Change, 1950-1960		
	(a) Rise in Urban Proportion	(b) Growth of Urban Population	Ratio a/b
44 Developed Countries	14.9	31.4	2.13
170 Under-developed Countries	25.5	54.7	2.15

is connected with economic development, over half of the growth in the urban population between 1950 and 1960 was superfluous; it need not have occurred if the total population had not grown.

The Rural Population.

Since the urban population growth in the under-developed areas was 74 per cent greater than it was in the developed areas, we could deduce that much the same was true of the total population. In fact, during the decade, the overall population growth in the under-developed areas was 62 per cent greater than it was in the developed areas. The biggest difference, however, was in another category - the rural population. In the developed countries between 1950 and 1960, the rural population *fell* by 4.8 per cent, whereas in the under-developed countries it *gained* by 17.0 per cent. In the under-developed countries, of course, the bulk of the total population was constituted by the rural contingent; therefore, the difference in growth rate between the overall and the rural population (8.5 percentage points) was not so great for these countries as it was for the highly developed nations (19.1 percentage points).

The widening economic gap between the developed and the under-developed countries is graphically revealed in these data on population growth. The under-developed countries are currently experiencing rates of overall population increase that are far higher on the average than the rates exhibited by the industrial countries during a similar period of urbanisation. Their rate of urban population growth, however, is about the same as it was historically in the industrialising nations. The main difference therefore lies in the *rural* population. Whereas the rural population of the industrialising nations grew very slowly and eventually started to decline in absolute as well as relative terms, the rural population of contemporary under-developed countries is growing rapidly; in fact, it is growing more rapidly than the *total* population grew in the industrialising nations at the peak of their urbanisation, to judge by data that I have accumulated on the history of eighteen of these nations.

The resulting pressure on agricultural resources is enormous. The 'rural' population is composed mostly of farmers or peasants in the under-developed countries. This being true, we can use it as a proxy for the agricultural population. On the resource side, we unfortunately lack data on the agricultural land for all the world's countries, but we do have the total area and can therefore relate the rural population to the land area. The ratio of rural population to the total land area in a country is of course only a rough measure of the resource level in agriculture - for this reason, we call it the 'approximate rural density' - but it does have the advantage that it can be covered on a world basis. In 1950 the under-developed countries had an approximate rural density more than three times as great as the developed nations had; by 1960, their rural density was almost four times as large as that in the developed countries. In other words, while the highly developed nations are emptying

TABLE XVI

Approximate Rural Density, Under-developed and Developed Countries, 1950 and 1960

Type of Country	Land Area (,000 Km. ²)	Rural Population (000's)	Rural Population per Square Kilometer
<u>1950</u>			
170 Under-developed Countries	74,276	1,416,716	19.07
44 Developed Countries	61,129	378,794	6.20
<u>1960</u>			
170 Under-developed Countries	74,276	1,658,204	22.32
44 Developed Countries	61,129	360,736	5.90

out their agricultural lands, substituting machinery and inanimate energy for manpower in the production of food and fibre, the under-developed countries are piling up excess population on the land. Although their urban population is growing extremely fast - as fast as it did in the industrial nations during the heyday of their urbanisation - it is not growing fast enough to remove even a major portion of the rural natural increase by cityward migration.

The New Demography of Urbanisation.

The truth is that the fundamental demography of urbanisation is different from what it used to be. In the nineteenth century the cities had a high mortality and a relatively low fertility. They had little or no excess of births over deaths and would hardly have grown at all without rural-urban migration. The vast rural masses, although they too had a fairly high mortality, nevertheless had enough natural increase to furnish the cities with numerous migrants. These enabled the cities to grow rapidly but kept the rural population growth to a minimum. Today in the under-developed countries, the death rates of both the rural and the city populations are miraculously low, and the cities generally have the lower death rates. Rural fertility remains high and that of the cities, if lower than the rural fertility, is not much lower. As a consequence, the cities of the under-developed countries are growing very fast, but most of this growth is due to natural increase within the cities themselves, rather than to rural-urban migration. The result is that the heavy natural increase of the countryside is not being drawn off; instead, it is backing up on the land. The cities are able to supply most of their own job needs through their own births; rustic migrants are not greatly needed. Finding little opportunity in the cities, many potential rural migrants remain at home in the already crowded and impoverished villages.

Between 1950 and 1960 the under-developed countries in our list added approximately 241 million to their rural population. If the urban population had absorbed all of these added people, the growth in the urban population would have been 140 per cent during the decade instead of the actual 55 per cent. The rate would have been fast enough to double the urban population every 7.9 years! Although such a rate of growth might be sustained in a particular country for a few years, it could not be sustained by the urban population of 170 countries for any time. The present-day capacity to control death rates in under-developed areas throughout the world, independently of local economic development, is coupled with an unwillingness to control birth rates. The result is a rapid growth of both the rural and the urban population, and the latter is no longer mainly a function of urbanisation (a rise in the urban fraction) as it once was.

The Case of South Africa.

To a stranger at least, South Africa seems to present some peculiarities when seen against the background of comparative urban evolution. These peculiarities arise mainly from the fact that it has two major ethnic peoples in radically different stages of development. As a consequence, the nation is unusually inappropriate for treatment as a single unit.

For instance, in terms of per caput national income, South Africa is on the borderline between the developed and the under-developed countries. It is at approximately the same level as Chile in Latin America, or Greece in Europe. In urbanisation, South Africa is also on the borderline, standing above the world average but well below the average for the developed countries, as Table XVII shows. When only the European, Asian, and Coloured¹⁾ groups are counted, however, the level of urbanisation is well above the average for the developed countries. Correspondingly, when the largest segment of the country's population (the Bantu) is considered, the degree of urbanisation is below the world figure and close to the average for the under-developed countries. It follows that the process of urbanisation in South Africa has to be viewed in two contexts at once. It has to be viewed in the context of what has occurred and is occurring in the industrialised nations, and it has to be viewed in the context of what is happening in the under-developed countries.

TABLE XVII

The Level of Urbanisation in South Africa, with Comparisons, 1960

Country	Per Cent Urban ¹⁾	Per Cent in Cities 100,000+
South Africa	44.9	26.5
European	74.1	49.7
Asian	71.5	67.5
Coloured	55.4	40.5
African	29.2	16.2
World	33.0	19.5
Developed	60.7	37.8
Under-developed	20.8	11.5
Chile	64.7	31.6
Greece	57.0	27.4

- 1) The definition of 'urban' is not the one used officially by the South African Bureau of Statistics, but rather the places called 'urban' which in 1960 had 2,000 or more in population.

The Level of Urbanisation in South Africa.

In both contexts South Africa is ahead of the average, as Table XVII demonstrates. The Republic is especially ahead in the first category, for its European and Asian populations are far above the mean of the developed countries in the proportion urban and even further above in the proportion in cities of 100,000 or more. When the Europeans and Asians in South Africa are compared with the populations in the world's most highly urbanised countries, they appear to rank fairly near the top in degree of urbanisation. Omitting from the comparison the few countries

- 1) 'Coloureds', in South Africa, are White-Black (Bantu) or Black-Asian (Bantu-Indian) hybrids.

that are 100-per-cent urban - that is, which are simply city-nations, like Hong Kong - we find the South African non-Bantu population ranks about fifth among the world's nations in degree of urbanisation.

TABLE XVIII

A Comparison of the Degree of Urbanisation of the South African non-Bantu Population with the most Urbanised Countries of the World

Country	Per Cent of Population	
	Urban	In Cities of 100,000+
United Kingdom	78.3	71.6
Australia	81.0	57.9
West Germany	77.6	51.4
Argentina	67.0	54.3
South Africa (non-Bantu)	79.0	48.7
U.S.A.	69.9	50.5
Israel	77.4	39.4
Denmark	74.1	34.2
Canada	68.6	43.0
Uruguay	72.0	37.9

In the case of the United States, one may argue that the comparison is unfair unless only the American White population is taken. Actually, however, the proportion urban among the Whites of the United States is slightly less than among the Negroes.

TABLE XIX

The Urbanisation of Whites compared with Negroes in the United States, 1960

Race	United States, 1960	
	Per Cent Urban	Per Cent in SMSA's ¹⁾
White	69.6	62.9
Negro	73.2	64.6

- 1) Standard Metropolitan Statistical Areas, made up of counties embracing one or more central cities plus additional counties judged to be attached to these central cities by commuting, density, and other characteristics.

Anyway one looks at it, the non-Bantu segment of the South African citizenry is one of the most urbanised populations in the world.

Although the Bantu population of South Africa does not rank with industrial countries in its level of urbanisation, it is well urbanised in comparison to under-developed countries. Since Africa as a whole has the lowest level of urbanisation of any continent, the Bantu population of South Africa stands out, particularly when it is compared to other countries in Africa. As Table XX shows, the level of urbanisation of the South African group greatly exceeds that of any region except the northern tier of Muslim

countries. In fact, there appear to be only two countries in Africa - Tunisia and Algeria - which exceed the South African Bantu in their level of urbanisation.

TABLE XX

The 'Bantu' Population of South Africa compared with Regions of Africa in Level of Urbanisation, 1960*

Population	Per Cent Urban	Per Cent in Cities of 100,000+
'Bantu' Population of South Africa	29.2	16.2
Northern Africa	29.6	18.3
West Africa	14.8	5.0
East Africa	7.5	2.8
Middle and Southern Africa (except South Africa)	11.6	4.5

*Data on regions are from Davis, K. (1969): *World Urbanization 1950-1970, Vol. I: Basic Data for Cities, Countries, and Regions*, Institute of International Studies, Berkeley. The countries constituting each region are given in this source.

The Rise in the Level of Urbanisation.

Since South Africa as a whole stands between the developed and the under-developed countries in its level of urbanisation, one would also expect it to lie between them in its rate of change in that level. This turns out not to be true. The country has the slow rise in the proportion urban which characterises the highly developed countries rather than the fast rise that characterises the under-developed nations.

TABLE XXI

A Comparison of South Africa with Developed and Under-developed Countries in respect of the Rate of change in the Level of Urbanisation, 1950-1960

Country	Average Change Per Year, 1950-1960 (Per. Cent)	
	In Proportion Urban	In Per Cent in Cities 100,000+
South Africa	1.38	1.15
170 Under-developed Countries	2.29	3.06
44 Developed Countries	1.40	1.57

If we divide the nation into two racial classes - the White-Asian-Coloured category on the one hand and the Bantu on the other - we can perhaps see wherein the slowness of South African urbanisation lies. As the figures in Table XXII indicate, the slowness lies with the first racial combination. The Bantu population is increasing its level of urbanisation about three times as fast as the non-Bantu population is increasing its level. This, however, is what one would expect; because at the advanced stage of urbanisation already reached by the non-Bantu population, great proportional gains

TABLE XXII

The South African Bantu Population compared with the other Races in respect of the Rate of Change in the Level of Urbanisation, 1951-1960

Population Group	Average Change Per Year, 1951-1960 (Per Cent)	
	In Proportion Urban	In Proportion in Cities 100,000+
White-Coloured-Asian Population	0.53	1.29
Bantu Population	1.43	1.76

are difficult if not impossible to make, whereas at the low level exhibited by the Bantu group in 1951, rapid gains are not only possible but very likely. The more interesting result of the calculation is the fact that the Bantu rate of urbanisation is itself slow in relation to under-developed countries. It is just about the same rate of rise as that found in highly developed countries; it is only six-tenths as great as that found in the world's under-developed countries as a whole. My finding suggests either that the Bantu movement into cities and towns in South Africa is under-estimated on the basis of census enumerations or that a policy of restraining urbanisation among the Bantu may be proving at least partially successful. On the basis of comparative world data, I would expect the Bantu rate of urbanisation to be much higher. For instance, in the African continent as a whole, excluding South Africa, the rise in the proportion urban between 1950 and 1960 was more than twice as fast as it was among the Bantu of South Africa.

Growth of the Rural, Urban, and City Population in South Africa.

The slowness of the rise in the proportion urban does not mean that the growth of the urban population has been slow. In fact, the growth of the urban population in South Africa between 1950 and 1960 was at a rate of 3.95 per cent per year. This was, as Table XXIII shows, far more rapid than the rate exhibited by developed countries generally, being indeed closer to the rate shown by the world's under-developed countries. The growth of the population in cities of 100,000 or over was not relatively so great, but it was still almost half-way between the rate shown by the developed countries and that shown by the under-developed nations.

TABLE XXIII

Growth of Urban, City, and Rural Population in South Africa, 1950-1960, compared to that in Developed and Under-developed Countries

Country	Average Annual Growth (Per Cent) in Population			
	Total	Rural	Urban	City
South Africa	2.54	1.53	3.95	3.72
170 Under-developed Countries	2.12	1.59	4.46	5.24
44 Developed Countries	1.35	-0.49	2.77	2.94

If the urban fraction has been growing slowly in South Africa but the urban population has been growing rapidly, the reason for the difference must lie in the rural population. It is in its extremely high rate of rural

population growth that South Africa stands out. It has almost as high a rate of growth of the rural population as the under-developed countries do. In this respect it is very far removed from the highly developed nations, for these experienced a *decline* in their rural population during the 1950-60 decade. In the history of developed countries, the rural population tends to decline at some point in the developmental process. The decline is strongly associated with modernisation in agriculture. The continued rapid rural population growth in South Africa raises a question concerning the potential modernisation of its agriculture, taken as a whole.

However, it is not in its rural population growth that South Africa is most unusual. It is more out of line with respect to *total* population growth. Its overall population increase is substantially greater than that of the world's under-developed countries, and it is nearly twice that of the developed countries. If the population in general were not growing so rapidly, the rate of urban and city population growth would not be so disproportionate to the rate of rise in the urban fraction (which, as we saw, is rising only slowly). With its exploding population increase, South Africa is becoming a densely settled part of the world. By 1970 its overall population density will equal that of the developed nations as a whole; its rural density will exceed that of the developed nations by approximately 55 per cent.

Growth of the Bantu and non-Bantu Urban-Rural Populations.

More light can be thrown on the trend in South Africa by again dividing the country into its highly urbanised and less urbanised racial groups. When the growth of their populations are compared, one can see from Table XXIV that the first group does not resemble the highly developed countries. In other words, the White-Coloured-Asian population, although highly urbanised, exhibits an extremely rapid population growth - probably the most rapid of any developed population in the world today. Its rise in the urban proportion is slow, as we saw previously, but not its urban, rural, or total population growth. It stands out least in urban population growth, most in total and rural population increase.

TABLE XXIV

Population Growth of Racial Groups in South Africa, 1951-1960

Population Group	Average Annual Growth (Per Cent) in Population		
	Total	Rural	Urban
South Africa: White-Coloured-Asian	2.55	0.47	2.81
44 Developed Countries	1.35	-0.49	2.77
South Africa: Bantu	2.63	1.83	4.11
170 Under-developed Countries	2.12	1.59	4.46

The Bantu group, in contrast to the under-developed countries, stands out with reference to the growth of its total and its rural population, but not with respect to the increase of its urban population. Again it appears that a damper is being placed on urban settlement among the Bantu, and that this is piling up these people in rural areas.

Conclusion.

I have tried, as a stranger, to characterise South Africa's position and trends in the light of recent developments in the world as a whole. Given the unusual degree of stratification in South Africa's social structure, the analysis seems most fruitful if the urbanised racial groups are compared to the developed countries and the less urbanised group (the Bantu) is compared to the under-developed countries. When this is done, it is still found that the first group is one of the most urbanised populations in the world, and that the second group is ahead of most of the under-developed countries. With respect to rate of change, it is found that regardless of which group is considered, South Africa is characterised by an extremely rapid population growth, a tendency to stack up people in rural areas to an unusual degree, and a consequent modest urban population growth and a sluggish rise in the proportion of the population living in towns and cities. As I see it, these trends - especially the rapid overall population growth - pose fundamental questions concerning the future development of the nation.

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 Institute of International Studies,
 University of California,
 Berkeley, California.

Year	Urban Population (Millions)	Rural Population (Millions)	Total Population (Millions)
1950	10.0	10.0	20.0
1960	12.0	12.0	24.0
1970	14.0	14.0	28.0
1980	16.0	16.0	32.0

THE PROCESS OF URBAN PARTICIPATION

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The Common Bone.

In their concern with urban problems the social sciences meet the environmental design disciplines like two well-matched dogs fighting over a common bone. A certain amount of awe plus a little anger, accompanied by a lot of barking and neither can claim the bone for his own. Nor can they work out a way of sharing it. The environmentalists (they are a varied breed: architects pure and simple, architect-planners, planner-architects, urban designers¹⁾ etc.), without as yet the training nor talent to develop their own, envy the social scientists' ability to construct systematic theory. The social scientists, a little insecure about their own partial theories, have to live in what the others build. While the one apparently calls for the city of good form, the other looks for a city of good men.

Of course the situation is not quite as hopeless as all that. We are developing a neurotic species which does not quite know in which kennel it lives; and maybe this strain will bark loudest after all. But I do believe that we are approaching a view from the bridge²⁾, forced in part by an exigent situation, in part by the dilution of professional arrogance and in part by the onslaught of a new physical and intellectual scale on the fusty strongholds of compartmentalism.

One basis for this view lies in the common ground of our progenitors. Robert E. Park³⁾ in 1916 and R.D. McKenzie⁴⁾ fifteen years later were making the same mistakes of determinism and over-simplification in their construction of theories about the city that their architectural contemporaries were making in trying to conceive new physical forms for it. Admittedly, fitting human society into an ecological model derived from Darwinian biology, is far less arrogant and exaggerated than Le Corbusier in trying to rationalise his Ville Contemporaine in 1922, suggesting that 'all culture is an orthogonal state of mind'⁵⁾; or Frank Lloyd Wright sixteen years later believing that 'the chamber music concert would naturally become a common feature at home'⁶⁾ were someone

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- 1) For a classification and an explanation of their relationships, see Denise Scott Brown (1967): 'Team 10, Perspecta 10, and the Present State of Architectural Theory', *ATP Journal XXXIII*, (January) p.42.
 - 2) For one explanation of such a viewpoint, see Mallows, E.W.N. (1968): *Physical Planning: A Social Process*, Witwatersrand University Press, Johannesburg.
 - 3) Robert E. Park (1916): 'The City: Suggestions for the Investigation of Human Behaviour in the Urban Environment', *American Journal of Sociology* 20, (March).
 - 4) McKenzie, R.D. (1931): 'Human Ecology', *Encyclopedia for the Social Sciences*, The MacMillan Co., New York.
 - 5) Quoted by Françoise Choay (1965): *L'Urbanisme, Utopies et Realites*, Editions du Seuil, Paris, p.38.
 - 6) Frank Lloyd Wright (1963): *The Living City*, Mentor Book, New York, p.197.

to build his Broadacre city. But theory building is much safer than action; and this dichotomy often presents the theorist (read social scientist) as the reasonable, and the activist (read architect) as the charlatan.

Now we can see that both theory and practice were inadequate, ecological theory because, as Reissman suggests, 'reality is never quite as simple as we would like to think it is for the purpose of our explanation'¹); architectural and planning practice, (such as that which built Brasilia), because whimsical play with little building blocks is no adequate physical reciprocal for complex social forces.

Determinism and over-simplification have dogged design attitudes to the city ever since the heroic era of modern architecture and the visionary days of early planning; and have brought upon architects and planners the righteous scorn of sociologists who have been sensitive to the good-physical-form-ergo-good-society fallacy. Leo Kuper, for instance: 'Implicit in all Town Planning is some theory of the influence of physical structures on the behaviour of residents. If this is rejected, then Town Planning is quite meaningless. It becomes an art, an aesthetic, and relevant only in this sense to the daily lives of the people'²). In the manipulation of shapes to produce lesser or more attractive neighbourhoods, the determinist fallacy is probably not particularly harmful. But it *is* when it informs an urban renewal policy which moves poor (and almost synonymously non-White) people into marginally better homes and uses the neatly arranged forms of these new houses, or the tower blocks that have replaced the former slums, to mask fundamentally misguided social values.

Equally powerful has been the criticism levelled at the architect/planner for letting his reliance on a simple visual order cloud his judgment as to the relevance of new social orders. Melvin Webber, for instance: 'We have often erred, I believe, in taking the visual symbols of urbanisation to be marks of the important qualities of urban society ... and so we have mistaken for "urban chaos" what is more likely to be a newly emerging order whose signal qualities are complexity and diversity'³). Webber is of course referring particularly to the popular distaste of so-called urban sprawl, the emerging form of cities where technological changes have reduced the relative significance of communication costs and have made possible and economic the apparent desire of people to seek suburban locations and interact over larger distances. The architect/planner's preference has always been for density achieved through face-to-face contact and pedestrian walking distances - a pattern well suited to the demands of an isolated, limited-in-size community with a slow rate of change: an Italian hilltown, for instance, or the modern archetype, the megastructure, the 'medieval hilltown with technological

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- 1) Leonard Reissman (1964): *The Urban Process*, The Free Press, New York, p.121.
 - 2) Leo Kuper (ed.) (1953): *Living in Towns*, The Cresset Press, London, p.8. In the same vein are other comments by social scientists, for example, 'The assumption of housers that planned manipulation of the physical environment can change social patterns in determinate ways seems to be only selectively true', Irving Rosow (1961): 'The Social Effects of the Physical Environment', *AIP Journal XXVII*, (May), p.127: or 'What planners fondly imagined to be the rich life of the city was a myth ... the physical arrangements of a city were not of profound importance to the style or the quality of the lives lived within it', Peter Hall (1967): 'Breaking the Myth', *New Society*, 12 Oct., p.525.
 - 3) Melvin M. Webber (1963): 'Order in Diversity: Community without Propinquity', *Cities and Space*, John Hopkins Press, Baltimore, p.25. A similar concept is expressed later in the same writing: '... some deep-seated doctrine that seeks order in simple mappable patterns, when it is really hiding in extremely complex social organisation, instead', p.54.

trappings'¹⁾. To such designers the loosening of the belt that has always kept cities to a limited girth is 'destroying the equilibrium in the human habitat'²⁾. But if society is no longer static or frozen, why, asks his critics should the designer be so aghast at this state of disequilibrium? Stephen Mullin, for instance : 'For the first time we have a society with enough technological slack to permit the disequilibrium which would have wrecked the examples of primitive society ... one of the most priceless boons our civilisation has to offer in the realisation that we do not need to know where we are provided we know where we are going'³⁾.

Such criticism has of course not come uniquely from outside. There has been no more spiked criticism of the physical design disciplines than that which the disciplines have levelled at themselves; and a healthy mood of spirited iconoclasm has thrown up a variety of directions which promise more than fly-by-night modishness. Some of these have been attempts to provide the design disciplines with an exact method and objectivity through the use of systems and computation technique : a type of design methodology aimed at making complexity manageable⁴⁾. Others, frustrated by the limitations of classic master planning, have been drawn to philosophies of change and concepts which accept partial and incremental action and allow for and even embrace the unexpected and circumstantial⁵⁾. The most eloquent protagonists of such open-ended philosophies have been the Team 10 group of European architect/planners, the inheritors of the new defunct Congress for Modern Architecture (CIAM), against whose over-rigid and simple classification of urban functions they rebelled so strongly and decisively in the middle of the 1950's. And yet others have sought to understand the nature of complexity and contradiction and the hidden and more difficult orders which most of modern architecture and planning has so far been reluctant to include.⁶⁾

Clearly much of this has rubbed off from the social sciences : the search for method, for quantification and the analysis of complex variables, the attraction to process and cybernetic thinking. It is an odd paradox however for the physical designer, on finally coming closer, to find that the social sciences have less for him than he has always imagined. For while the physical designer has floundered, the social scientist has tended to regard the physical environment as rather peripheral to his concerns. In a recent edition of the Journal of Social Issues devoted to man's response to the physical environment, one of the editors reviews the state of the social and behavioural sciences vis-a-vis the study of physical environment as follows :

'For economics, environment is traditionally viewed as land, a member of the trinity of productive inputs, and an input

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- 1) Robert Venturi and Denise Scott Brown (1968): 'A Significance for A & P Parking Lots or Learning from Las Vegas', *The Architectural Forum*, (March), p.37.
 - 2) Serge Chermayeff and Christopher Alexander (1966): *Community and Privacy*, Pelican, London, p.79.
 - 3) Stephen Mullin (1966): 'Nowhere man, don't Listen', *New Society*, 29 Dec., p.986.
 - 4) For instance, Christopher Alexander (1964): *Notes on the Synthesis of Form*, Harvard University Press, Cambridge, Mass.
 - 5) An example of this in city planning theory is the idea of 'process planning', as in *AIP Journal XIX*, (November 1965); and particularly in the contributions of Webber, Perloff, Robinson, and Davidoff; also in Mocine, C.R. (1966): 'Urban Physical Planning and the "New Planning" ', *AIP Journal XXVII*, (July).
 - 6) For example, Robert Venturi (1966): *Complexity and Contradiction in Architecture*, Museum of Modern Art, New York.

whose importance declines with increased industrialisation. In anthropology environment is, of course, important, especially as a setting for primitive cultures. But more often than not it proclaims the triumph of culture over a single physical setting. Sociology, even in its most physically oriented subdiscipline, human ecology, sees the physical city as the dependent entity, a function of social organisation and change. For many psychologists, the environment is but neutral stuff that must wait patiently for form and meaning obtained only through the mind and senses. Even in geography, with its tradition of man-environment interest the study of environment calls for apologetics'.¹⁾

The physical designer having walked the gangplank because of his uninformed activism, quite justifiably feels cheated. 'If society has no form - how can architects build the counterform?'²⁾ asks one of the Team 10 spokesmen in frustration. In a mood of resignation another says: 'to be hard-headed and objective one has to study with sociologists, but perhaps their discipline has to extend itself before it can be useful'³⁾. Clearly the social sciences have a lot of homework to do and academic purism will not help them. The view from the bridge will remain unfocussed until they, like the designers whom they have so justifiably criticised, put their house in order.

The Process of Participation.

In the stock-taking which is taking place in the physical design disciplines, attention often focusses on the proper relationship between designer and client or designer and community. The designer, particularly the architect, has traditionally viewed his function almost entirely as that of an artist: an independent creator whose task it is to make as complete or perfect an object as he is able. In this view the client is often an unfortunate but indispensable obstacle. The architect's influence has diminished however in the face of other agencies offered by the market, and as a result of the scale of his involvement with the city, and he has been forced to reassess his social role. One contemporary view sees his function as a type of social control mechanism which much like zoning, stands 'between the client's ego and society'⁴⁾. Another more vital view sees his role as having an even greater social content. He is himself, as much as his client, a participator in a social process and his role must vary depending upon the context in which he works. In any case it must be permissive, his aim being to produce objects which can be changed; and in changing them, his client - both as an individual or as a community - might be as active an agent as he. The architect Candilis suggests: 'We must prepare the "habitat" only to the point at which man can take over'⁵⁾. The Polish architects Hansen agree: 'The Open Form, unlike the Closed Form, does not exclude the energy of the client's initiative but on the contrary treats it as a basic, organic and inseparable component element'⁶⁾. A more extreme view sees the architect as a relic of a past age and suggests his complete removal: 'Modern technology

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- 1) Robert E. Kates (1966): 'Stimulus and Symbol': 'The View from the Bridge', *Journal of Social Issues XXII No.4*, (October), p.22.
 - 2) Aldo van Eyck (1962): Quoted in *Team 10 Primer*, Architectural Design, London, p.7.
 - 3) Peter Smithson quoted in *ibid*, p.41.
 - 4) J.B. Bakema quoted in *ibid*, p.11.
 - 5) George Candilis quoted in *ibid*, p.20.
 - 6) Oskar and Zofia Hansen (1961): 'The Open Form in Architecture - the Art of the Greater Number', *Documents of Modern Architecture I*, CIAM 1959 in Otterloo, Tiranti, London, p.190.

has reduced architects to the status of laymen without their knowing it - the stored knowledge of computers will eventually replace the creative process of "professional knowledge". Today non-architects from our world : their evident irresponsibility can only be curbed by the rationality of cybernetics'. Young architects are exhorted to 'try to make the consumer masses aware of the problems at hand by sneaking into the Establishment and using its weapons to express their ideas'¹⁾.

The research which forms the basis of this paper - studies of the way in which people participate in the making of their own physical surroundings - probes into a process which bears fundamentally on the relationship between designer and community. It is a process which may well be stochastic; it may on the other hand be less random and less controlled by probabilistic laws. While the results of the process are extremely palpable they are hardly ever noticed and no-one yet understands how design theory and practice can or should be altered to include such manifestations.

When I use the term participation, I am referring only to that particular activity by which people take part directly in the making of their surroundings. I am not using it in its more common political context nor to describe an aspect of social organisation. Were such participation to bear any relationship to participation as I have defined it, it would have been a series of independent hypotheses, not the central object of these studies.

Community No. 1 : Western Native Township, Johannesburg.

The first of the two communities studied was Western Native Township, an African Township, about five miles from the centre of Johannesburg. Built between the years 1918 and 1931²⁾, it consisted of over 2000 houses. The greatest majority of these houses were small (just over 300 sq.ft. of enclosed space), with two rooms and an open street-facing verandah. They were built of unplastered bricks and a corrugated iron roof. No ceilings or internal doors, nor any direct services, were provided to the houses.

Over the forty years in which this community of fifteen thousand people lived in Western Native Township they changed their houses in three basic ways. The *first* were alterations which completely changed the nature of the house : additions of up to three rooms; the installation of electricity, ceilings and concrete floors, plastering and tiling. These alterations were expensive - up to as much as five times the original cost of the house - and there were very few of them. They were always built at the cost of the owner. The *second* type were responses, as were the above, to lack of space and consisted of the addition of rooms to the back of the house. Generally only one room was added and in some cases electricity as well. These operations were carried out by the municipality and paid for through an increased rent. The *third* series of changes were by far the most common. These were changes to the front and street-facing facade of the houses only : the front verandah was either partially or completely enclosed and the front wall plastered. Over 80 per cent of the houses were changed in this way.

What distinguished these latter changes - and caused me to become aware of the township in the first place - was the fact that they were generally accompanied by wall-decorations which often completely transformed the appearance of the house and the street onto which they faced. The images and colours of these decorations were powerful and their impact on the observer difficult to avoid.

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- 1) Nikitas Patellis (1968): 'Architects and the Consumer Masses', *Baummeister* 6, June, p.618.
 - 2) From Johannesburg City Council, 'Houses for Natives authorised by the Council up to the end of September 1952', Pamphlet 326:331.83 (6822), City Council, Johannesburg.

The perception of these walls by people with less involvement with the township was not nearly as distinct however. In the early days of this study I collaborated with the Department of Psychology at the University of the Witwatersrand, testing the reactions of groups of students after they had been taken on a trip past about 200 houses in Western Native Township and an equal number in Orlando (a younger township about twelve miles from the centre of the city and similar in appearance to W.N.T.). Although about 60 per cent of the houses which they passed in Western Native Township were decorated, and none in the control group, the scores of students indicated that they had noticed little difference¹). In general students were distracted by the social problems that they noticed - few had been in a township before - and had the sample consisted of people with more visual training, the results would probably have been different.

There were too many uncontrolled factors for the above results to have much scientific value but they seem to coincide with other empirical observations. Between 1933 and 1963 over 400 news items appeared in 'The Bantu World' (later 'The World') newspaper dealing specifically with news about Western Native Township. Only about five per cent concerned housing, and of these only one item came close to mentioning the existence of decorations or the need for them :

'Mr. P.Q. Vundla had a big grouse about location houses last week. He asked Council Officials : "Can't you build houses that all do not look the same?" He continued : "The monotony of these houses is demoralising". (An official) replied that the reason was lack of sufficient money. Every pattern would be costly'²).

Inhabitants of the township, however, were very conscious of the decorations. Almost all those interviewed a few years after they had been moved out of the township could draw a reasonable facsimile of their Western Native Township houses and remembered the decorations of others accurately. Most were sentimental about their old homes, remembering particularly the fact that they had not been compensated for their improvements when they were forced to leave Western Native Township for new townships much further from the centre of the city. The compensation controversy had been one of the major frictions surrounding the demise of Western Native Township. The Municipality refused to pay compensation on the grounds that tenants had been warned that they improved their houses at their own risk, that they would be given indirect compensation through better housing in the new townships and that they could either take their improvements away with them (provided they did not destroy the houses completely) or could sell them to the new Coloured³) inhabitants. This clearly did not satisfy the inhabitants : the improvements had not only cost them money but had been the way in which they had tamed an extremely hostile and anonymous environment and made it fit their own personal needs. The alterations and decorations had become part of what Marc Fried has called the 'grieving for a lost home'⁴). In a letter to the 'Star' a tenant signing himself '20 Years a Resident' writes :

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- 1) Cohen, J. and C. Kessel (1964): 'The Effects of Racial Attitudes on Amount of Perception of Wall Decorations in Western Native Township', unpublished paper, Department of Psychology, University of the Witwatersrand, Johannesburg.
 - 2) 'The Bantu World', November 5, 1954, Johannesburg, p.3.
 - 3) The use of the term "Coloured" in South Africa refers to physical (racial) hybrids, usually the result of White-African crosses, or less frequently White-Indian crosses. These houses had originally been inhabited by Africans.
 - 4) Marc Fried (1963): 'Grieving for a Lost Home', *The Urban Condition*, Basic Books, New York.

'.... originally we were handed these houses in their bare and barren constructions and structures, in consequence of which all of us started from scratch, plastering, pounding the floors and pulverising the walls, as well as applying some paintings this incredible decision of "penalising" the Natives against compensations is that *we have made use of the ground and derived comfort of these improvements*'¹).

An official understood the problem when writing in a memo : ' *It must be remembered that the sentimental value of their homes is really more important than the intrinsic value*'²). But official perception tends to vary relative to objective. In 1947 when the Municipal Medical Officer of Health pointed out the dangers of allowing the enclosing of verandahs, his survey showed that 'the verandahs of 1877 dwellings had been totally or partially enclosed'³), but in 1961 when inhabitants were moved out one report stated that 'of 2278 houses only 88 had enclosed verandahs and installed electricity'⁴) and another that 'a survey had revealed that improvements had been made to only 500 houses - 1700 had not been improved'⁵).

One of the aims of this study was to examine the motivation, content and form of these decorations. There is no simple answer to the question of why people decorate their houses : decoration is an activity which rises from a complex substratum of human fears and requirements and the scale and quality of any decoration will vary according to how strongly any cultural group feels the need to express these through a particular medium. In Western Native Township the platform for this activity was in the first place utilitarian. The acute need of extra space initiated the closing of the front porches, and this was a first step towards a reconstruction of the whole front facade of the house. The added space was not always for domestic purposes : there were at least three tailor and four cobbler shops housed in porch enclosures. In addition to the lack of space, the lack of quality was an incentive : the original house was such an incomplete object that it demanded some initiative action from the tenant.

The tenant acted, however, for many other reasons as well, and for many of the reasons one would expect : to indicate certain kinds of status, to display religious denomination, to mark territory, even to show political affiliation - a prominent member of the African National Congress was reputed to have put its symbol and colours on his wall. One woman who ran a fah-fee saloon in her house put a horse symbol on her wall because it brought her luck. Others stressed that they had marked their wall so that visitors could find their house; others, that they wanted their house to be different from others in the same street, and so on.

With regard to the symbolic significance of these decorations there seems to be a dichotomy between a set of explanations which suggest a strong rural and primordial content on the one hand and an urban, rather banal one on the other. 'These are our traditional drawings and White people do not know anything about them' says a certain Mr. Dlamini; or 'I wanted to show typical Tswana designs' says Jacob Diloane. On the other hand Hilda Nyosi says 'I wanted something that would look modern instead of the decorations we do in the farms'. The data show no relationship between tribe and degree of decoration nor between tribe and basic shape category. One of the most common basic

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- 1) 'The Star', October 14, 1961, Johannesburg.
 - 2) From the files of the Non-European Affairs Department, Johannesburg City Council.
 - 3) From the files of the City Council Engineer's Department.
 - 4) From the files of the Non-European Affairs Department, Johannesburg City Council.
 - 5) Ibid.

shapes was the circle and its derivatives which were most often explained as having some reference to the sun or the rising sun. But one of the tenants, Edgar, says : 'The circle is typical European art. Look at the ash-tray you are using'. While sun-shapes suggest the possibility of inscrutable heliocentric origins, the sun also appears on Dandy Floor Polish tins and suburban wrought-iron gates. Certainly replies like W. Mtshali's : 'I used green and white because they are my football colours' or Mr. Phiri's 'I saw the combination on a kiddie's doll house' suggest derivation from an obvious present rather than a removed past.

There are probably many ways of explaining such an apparent or real dichotomy. What is clear, however, is the very powerful influence that emulation plays when decisions are made about the form of a particular environment and how often these borrowings become novelty as a result of our misreading of the original. One lady explained that the source of her decoration was an American architectural magazine which her husband had found in the flat where he worked in Johannesburg. She had seen a photograph, liked it, and used it as the basis for her decoration. But, she now admits, she had misread the photograph : the building in the photograph was still under construction and she had interpreted the unfinished sky part as positive, and the rest as negative. So what appeared on her wall was the reverse of what the photograph had intended.

The process did not end there. One of the magazines where aspects of this study have appeared - an architectural magazine published in New York - recently sent me a photograph of an exhibition house in New York. The theme was African and on one of the walls was a specially commissioned painting. It consisted of the elevations of the Western Native Township houses taken from the magazine. The process : U.S.A. architectural magazine, to African house wall, back to U.S.A. architectural magazine, to U.S.A. painting.

At first glance it seemed that the shapes of the decorations of the Western Native Township houses had been invented at random and that none was identical. But once the facades had been measured and redrawn, analysis showed that the whole system really consisted of adaptations and combinations of less than half-a-dozen basic shapes and that manipulation of these had produced a wide range of abstract shapes as well as recognisable objects : trees, butterflies and razor blades.

It is interesting to speculate about the causes of such a spontaneous limitation of language : the answer seems to lie partly in the nature of the community, and partly in the way people copied from one another. My experience in Western Native Township suggests that the decorations spread in the community as a result of the emulation of certain pace-setters, both as a desire for conformity and as a result of competition. My observations here would tend to agree with those of Herbert Gans who suggests that conformity was a stronger influence than competition in Levittown. I do not wish to give the impression, however, that the Western Native Township residents were engaged in a search for sameness. On the contrary their decorations were a reaction against the sameness imposed on them from outside.

In a fundamental respect the nature of emulation in Western Native Township differed from Levittown. I quote from Gans's book :

'Critics of the suburbs also inveigh against physical homogeneity and mass-produced housing. Like much of the rest of the critique, this charge is a thinly veiled attack on the culture of working and lower middle-class people, implying that mass-produced housing leads to mass-produced lives. The critics seem to forget that the town houses of the upper-class in the Nineteenth Century were also physically homogeneous; that everyone, poor and rich alike, drives mass-produced, homogeneous cars without damage to their personalities; that today, only the rich can afford

custom-built housing. I heard no objection among the Levittowners about the similarity of their homes, nor the popular jokes about being unable to locate one's own house. Esthetic diversity is preferred, however, and people talked about moving to a custom-built house in the future when they could afford it. Meanwhile they made internal and external alterations in their Levitt house to reduce sameness and to place a personal stamp on their property¹).

While Levittowners could move out when they could afford it, Western Native Township residents could not. It is one thing to sit and wait until you can achieve your goals, it is another when you can *never* achieve them. Then you have to compress all your frustrated ambitions into what you have now. As a result you make your possessions *look* like those that you will never possess, and you do this with all the intensity necessary to sustain such a myth.

Community No. 2 : Pinelands, Cape Town.

It had always seemed to me that the participation of the Western Native Township residents had been a unique and heroic effort; but this was an untested hypothesis. I have recently undertaken another study which attempted to measure the scale of participation in a community of a very different social and economic character: Pinelands, a middle to high income White suburb in the metropolitan area of Cape Town. Pinelands claims to be 'the oldest planned residential town in South Africa'²) having been founded by the Hon. Richard Stuttafard, a friend of Ebenezer Howard, and modelled after the ideas of the Garden City movement in England.

In spite of their obvious and extreme differences, Western Native Township and Pinelands share a surprising number of characteristics. While Western Native Township had just under 2200 houses, Pinelands has just over 2700; in both over 90 per cent of the population live in detached houses. Both are enclaves which are clearly distinguishable, Western Native Township five miles to the South-West of the Central Business District of Johannesburg, Pinelands five miles to the South-East of the Central Business District of Cape Town. Whereas the City Council of Johannesburg decided in 1919 to call the township Western Native Township, a special act of Parliament formed the non-profit housing utility company which built Pinelands in the very same year. Development commenced at about the same time in both places. It is said that the Western Native Township had, and that Pinelands has, a particularly large number of clubs, associations and voluntary associations.

I decided to use expenditure of money (adjusted to real terms) as the best measure of participation in both communities and the comparisons are listed in the table below.

A comparison between the behaviour of these two communities over the forty years since their inception can be summarised as follows: In the first place the hypothesis that the scale of participation in Western Native Township was unique, seems unjustified. The total cost of the housing stock in Western Native Township in terms of adjusted money (using as an index: 1947 = 100) was about R650,000; in Pinelands about R9,000,000 or fourteen times as much. The total cost of the physical changes made to the exterior of houses and to the site in the African township amounted to just under R150,000; in the White

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- 1) Herbert Gans (1967): *The Levittowners*, The Penguin Press, Allen Lane, London, p.171.
 - 2) Myers, S. (1963): *Site Planning Standards for Residential Layouts*, Vol.3, unpublished thesis submission for M.Sc., University of Cape Town, p.7.

Housing and Changes to Housing in the Two Urban Communities

(All money adjusted to 1947 = 100)

	Western Native Township	Pinelands	Relationship
Total cost of housing stock (before changes)	R650,000(a)	R 9,000,000(b)	13.8 X
Total number of houses	2,194	2,727	1.2 X
Average cost of house	R296	R3,300	11.1 X
Estimated cost of changes to houses :			
a) additions	R 30,800(c)	R 1,867,000(d)	6 X
b) gardens, fences, gates, etc.	R 15,000(e)	R 68,000(f)	4.5 X
c) decorations	R102,000(g)	-	-
<u>Total</u> :	R148,000	R 1,935,000	13 X
Average cost of changes per house	R67	R710	10.5 X
Total changes as a percentage of total cost of housing stock	22.76%	21.50%	
Total cost of housing plus changes	R798,000	R10,935,000	13.7 X
Average cost of house plus changes	R363	R4,010	11 X
Average density per house	7(h)	4(i)	X 1.8
Total population 1960	15,000(j)	9,000(k)	X 1.7
Average house cost (before changes) per caput	R44	R900	23 X
Average area of house	330 sq.ft.(l)	1300 sq.ft.(m)	4 X
Average space per person	47 sq.ft.	325 sq.ft.	7 X
Average income per annum per household over years 1930-1960	R264(n)	R1,525(o)	6 X
<u>Average cost of house</u> Average income per annum	1.12	2.1	2 X
<u>Average cost of additions</u> Average income per annum	.25	.46	1.8 X

Sources :

- a) 'Houses for Natives authorised by the Council up to the end of September, 1952', City of Johannesburg pamphlet M. Pam. 326 : 331.83 (6822) Johannesburg.
- b) From records of the Town Engineer, Municipality of Pinelands, and files and minutes of meetings of the Board of Garden Cities, Pinelands.

- c) From files of the City Engineer's Department, City of Johannesburg : additions are cost of extra rooms built by the Municipality and by tenants themselves (enclosing porches).
- d) As for b) above.
- e) Estimated from questionnaire results.
- f) Estimated from telephone responses to a sample of Pinelands residents.
- g) As for e) above.
- h) As for e) above, and from files of the Non-European Affairs Department, City of Johannesburg.
- i) From Myers, S. (1963): *Site Planning Standards for Residential Layouts*, Vol.3, unpublished thesis submission for M.Sc., University of Cape Town.
- j) Various estimates in files of Non-European Affairs Department, City of Johannesburg and 'The Bantu World'.
- k) 1960 Census figures for White population.
- l) From site measurements.
- m) As for b) above.
- n) Estimates from various sources including files of Non-European Affairs Department, City of Johannesburg; Ellen Hellman (1949): *Race Relations in South Africa*, ed. Oxford University Press, Cape Town; Sheila van der Horst (1954): 'Equal Pay for Equal Work' in *S.A. Journal of Economics* 22.2, June; Sheila Suttner (1966): *Cost of Living in Soweto 1966*, S.A. Institute of Race Relations, Johannesburg.
- o) As for b) and private sources.

township to about R2,000,000. The relationship between the total cost of the housing stock and the cost of the changes is virtually identical : 22.76 per cent in Western Native Township and 21.50 per cent in Pinelands.

The nature of the participation activity, however, appeared to differ between the two communities. In Pinelands a very large fraction of the money spent on changes was as a response to the need for extra space : in Western Native Township an equally large fraction was spent on decoration which, although in the first place related to a requirement of extra space, also satisfied a wide range of supra-functional needs, both individual and communal. It would be wrong, I think, to imply that in Pinelands residents were not motivated by other than purely practical desires. We did not set out to measure these as we had in the case of the African township; but our study of building plan records and observations in Pinelands indicated that, if these motives did exist, they were not expressed in anything like the palpable form chosen by the African residents of Western Native Township.

While the scale of participation was constant relative to investment, it varied in relation to the economic condition of the two communities. In Western Native Township the average household income over the forty year period (again reduced to real money terms with 1947 as the reference) can be estimated at about R260 per annum. The equivalent for Pinelands is about R1,500 per annum or six times as much. (This relationship varied over time, increasing in favour of Pinelands due to their obviously much greater opportunities for economic improvement). Relating the amount they spent on changes to their houses to their income, it seems that the residents of Pinelands spent twice as much on improvements relative to their income as did the residents of Western Native Township.

We should note, however, that while 90 per cent of houses in Pinelands are owner-occupied, none was in the African township and we are comparing participation of owners versus that of tenants. Clearly one expects that of owners to be higher : tenants in Western Native Township having no access to

home ownership, could do nothing else but over a period of time substitute for the concept of ownership the fact that they were tenants in the same house for a long time. Authorities in charge of South African townships are pleased to register their satisfaction at such involvement by African tenants and to publicise this as a subtle indicator of satisfaction with housing conditions. It is rather paradoxical therefore that they should react, as they did towards Western Native Township tenants, by not paying direct compensation for improvements on the grounds that the people had been warned that they were only tenants.

The last observation about the Western Native Township/Pinelands comparison is in relation to relative space and cost standards. The average house size in Pinelands was four times that of the African houses but because of lower occupancy figures (four versus seven) the average amount of space per person in Pinelands was almost seven times as much as in Western Native Township. A comparison of the total cost of housing stock in both these communities relative to their total populations, shows that while incomes in Pinelands were only six times as much as in Western Native Township, the amount spent on housing was twenty-three times as much : R44 per caput in Western Native Township and R900 per caput in Pinelands.

Conclusion.

Three ideas have been basic to this presentation. In the first place, the Western Native Township brand of participation *was* and *is* not a singular activity. The form it took was indeed unusual and approached that of a communal art, but each culture will find its own method, each with greater or lesser artistry. What is important is not this artistic content - worthy though the celebration of this undoubtedly is - but the existence of participation and its recognition by physical designers, (be its symptoms the scribbles on ghetto walls or the painted letter-boxes of suburbia). The participant has to modify, often destroy, what the professional has made; to make his environment viable, he has to subvert master plans, discompose formalism and complicate dull and puerile orders. The designer has a limited relationship with the object he makes; the user has to live with it and make it fit, cope with it as it decays, and change it as he himself changes.

And secondly, we must be careful lest we fail to understand the true relevance of the results of the kind of participation described in this paper. Designers have often been attracted by the kinds of artistic expression that the Western Native Township walls represent and have wished to impose such disciplines on societies like ours where such disciplines may well be unnatural and foreign. Jane Jacobs expresses it well :

'Under certain circumstances, the creation of art can apparently be done by general, and in effect anonymous, consensus. For instance, in a closed society, a technologically hampered society, or an arrested society, either hard necessity or tradition and custom can enforce on everyone a disciplined selectivity of purposes and materials, a discipline by consensus of what these materials demand of their organisers and a disciplined control over the forms thereby created'¹).

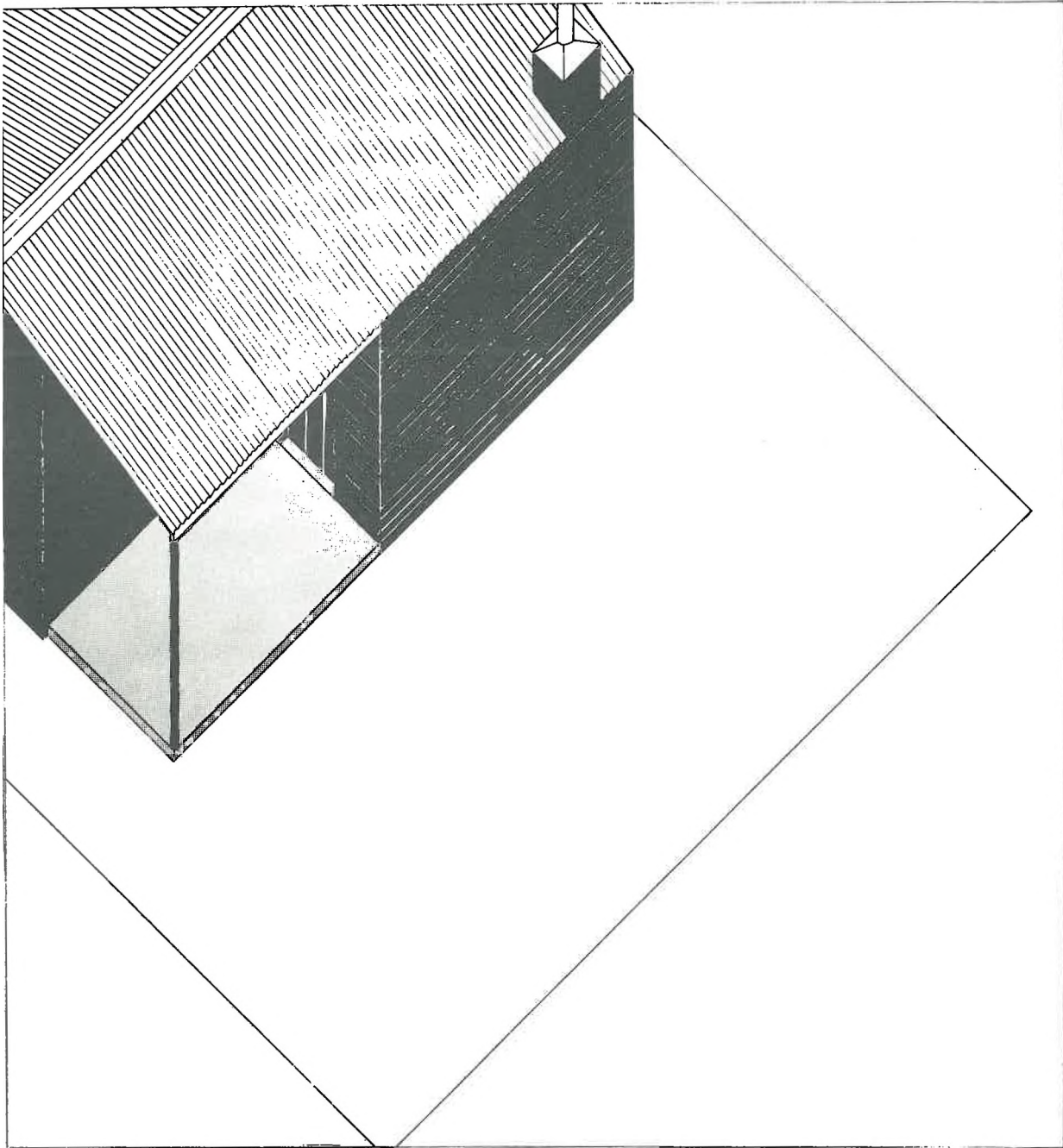
We should not, placing the high value on choice which we do, expect physical environments which deny such choice, nor should we be proud when societies which we have allowed to remain enclosed, immobile and frustrated,

1) Jane Jacobs (1964): 'The City is not a Work of Art', in C.E. Elias, J. Gillies and S. Riemer, eds., *Metropolis : Values in Conflict*, Belmont, California, Wadsworth, p.107.

attract us with the physical artifacts that they have produced as a result of these very conditions.

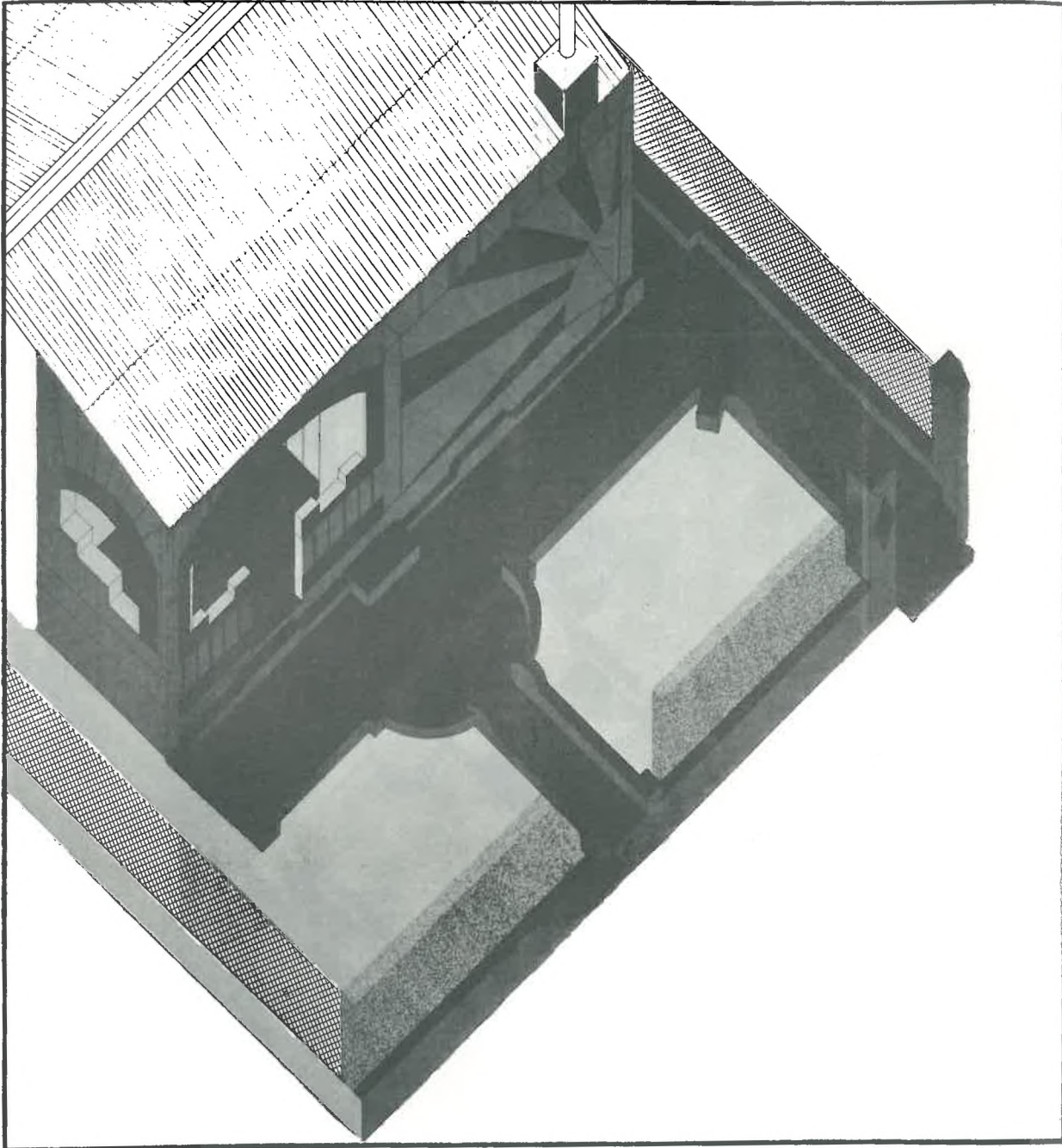
And finally, if planning our physical environment is to have any real meaning, we must not only be able to identify alternative forms and alternative societies, but more important, we must know how these relate. This can only happen if specialists in physical form can communicate with social scientists. We know very little yet and should not be afraid to admit it : those who say, it can all be solved by planning should probably not be allowed to plan. In the long run, their plans may well be more of a menace than the efforts to organise their environment of some of the people described in this paper.

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Rondebosch.



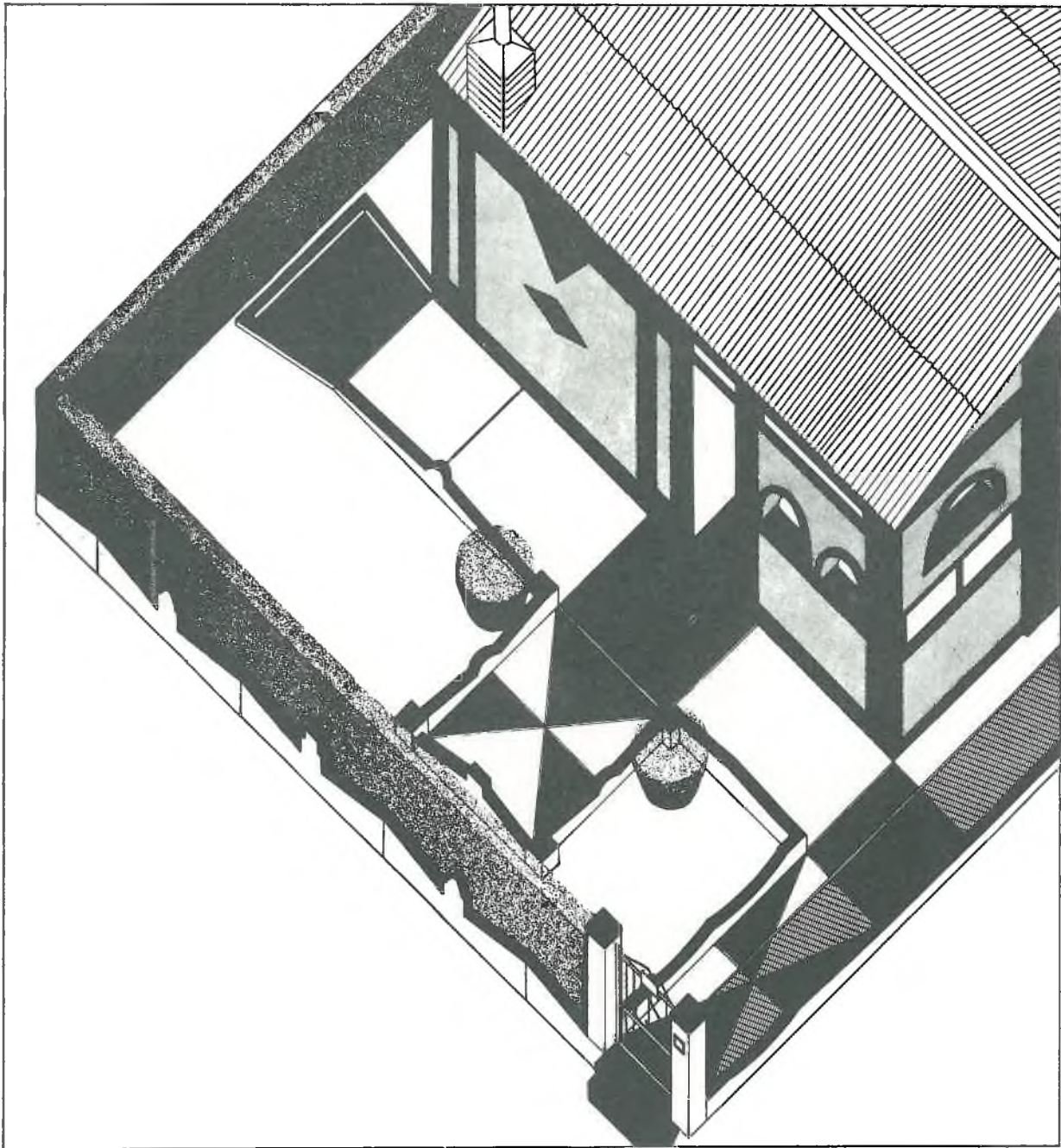
WESTERN NATIVE TOWNSHIP:

Axonometric drawing of original house



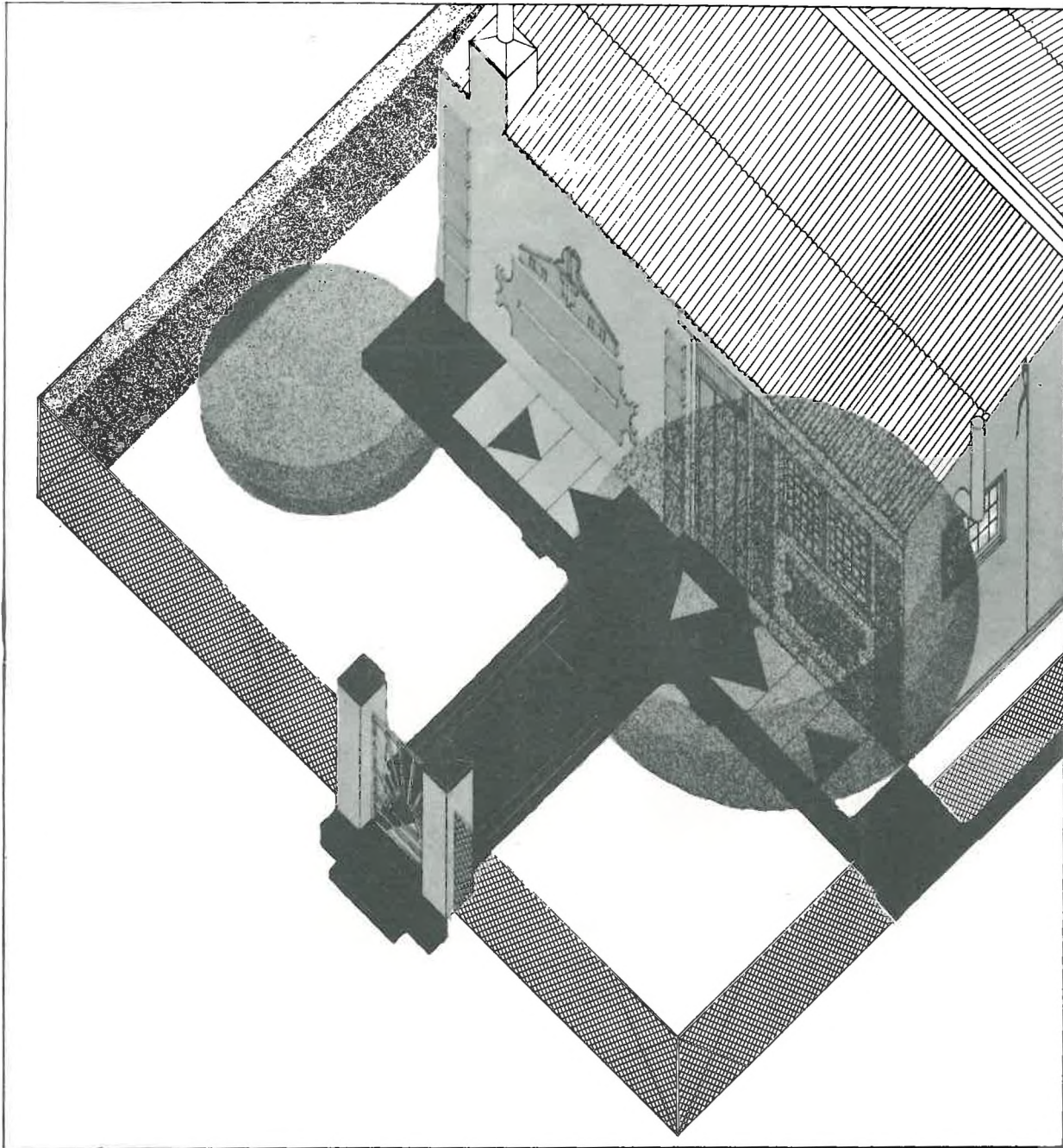
WESTERN NATIVE TOWNSHIP:

An axonometric drawing of a house
after participation by the tenant



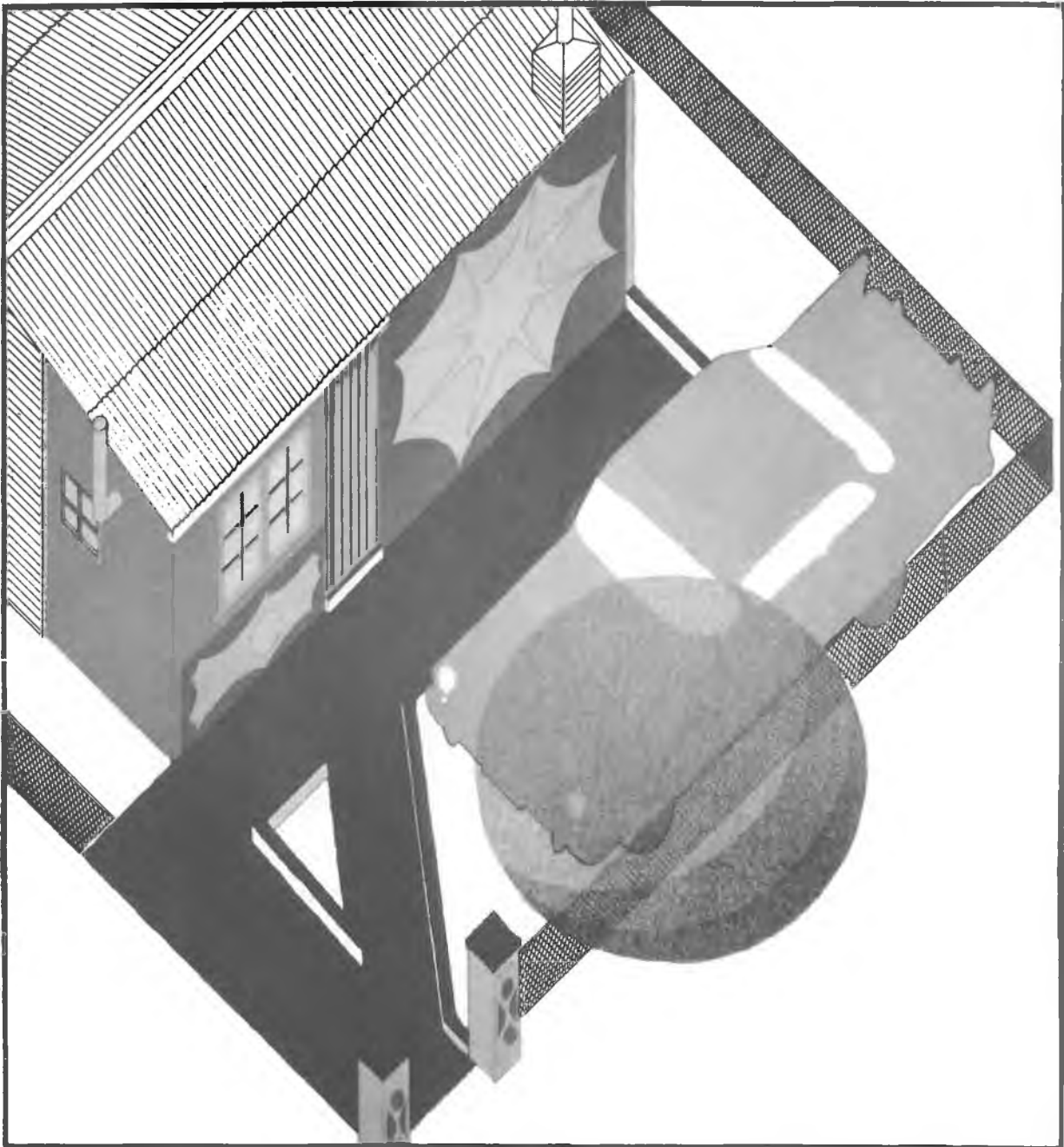
WESTERN NATIVE TOWNSHIP:

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An axonometric drawing of a house
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ILLUSTRATED LECTURE

A COMPARATIVE STUDY OF THE SOUTH AFRICAN URBAN SCENE¹⁾

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When we think about urban appearance it is usually in terms of classical and baroque concepts; axes and vistas. We will use these terms. We are all familiar with attempts that have been made to improve and beautify parts of cities. These attempts are usually sterile because they are false; they are attempts to give false expression to an urban structure in the same way that a false architectural expression can be given to a building structure.

We are also familiar with planners' misguided efforts to design the city and all its buildings. This is usually done in the form of a model. This is also false because the city is not static, and the programme for a building sets out the requirements for the building at the time it is required to be built. The planner's hypothetical programme which he uses to arrive at the form of a building is most unlikely to be the real programme for the building.

If these two approaches, just mentioned, are rejected what approach can we adopt?

Why must we find a suitable approach? There are at least two lines of argument to show that we should find an approach to bring appearance back into the planning process. The one is simply that in solving any problem we consider *all* the factors of the problem. If we omit one factor we will not get the right answer. We cannot omit consideration of appearance from the initial plan and expect the emerging town to be satisfactory. The second line of argument, briefly, is that we are all influenced in our daily lives by heredity and environment. Appearance is one aspect of the environment, and therefore we cannot ignore appearance when planning for an urban environment. On the question of appearance, particularly with reference to plants, animals and human beings, Charles Darwin had much to say. Referring to a sense of beauty he said:

'I refer here only to the pleasure given by certain colours, forms and sounds and which may fairly be called a sense of the beautiful; with cultivated men such sensations are, however, intimately associated with complex ideas and trains of thought'²⁾.

Having satisfied ourselves that appearance is of importance, even if we cannot explain precisely why, we will pursue our question. How do we deal with it in the creation of urban environment?

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- 1) This was the subject of a profusely illustrated lecture at the Conference. In this publication it has been possible to include only a limited selection, in black and white, of the illustrations presented.
 - 2) Charles Darwin (1871): *The Descent of Man*, 'Great Books of the Western World', No.49, Encyclopaedia Britannica 1952, p.301.

'The city in its complete sense is a geographic plexus, an economic organization, an institutional process, a theater of social action, and an esthetic symbol of collective unity. On the one hand it is a physical frame for the commonplace domestic and economic activities; on the other, it is a consciously dramatic setting for the more significant actions and the more sublimated urges of human culture'¹).

These words of Lewis Mumford express the complexity of the city. To find the answer we are seeking, we shall look at the city very simply and as far as possible through the eyes of that mythical person, the man-in-the-street.

The city is many things to many people. For us the city is a construction in space on a vast scale. It can be perceived only in parts and at sequences in time. For different people and at different times the sequences are changed. The world is turning; the weather is changing; cities are growing; people are moving. At every instant there is more than we can see, more than we can hear and more than we can feel in the city. In the whirl and throb of life in the city, how can we stop to contemplate the significance of what we see?

'This city now doth, like a garment wear
The beauty of the mornning, silent, bare.
Ships, towers, domes, theatres and temples lie
Open unto the fields, and to the sky'²).

Wordsworth could see beauty where others could see only muddle, ugliness and disillusionment.

Visual perception is as variable and as complex as the city itself. We see with our eyes but we are only aware of seeing when the image is recorded in the cerebral cortex. The brain conditions our recorded image by adjustments in accordance with our mental and physical condition. The image is coloured or focussed by fear, happiness, age, sex and many other factors. It is influenced by memory. The urban scene and the process of perceiving the urban scene are both complex and inconstant. Even so we will persist with this study of the urban scene. We will try to show that the appearance of cities has importance.

There are urban scenes which have formed mental images for many, and which still conjure up pleasant memories - Paris in Spring, Classical Rome, Piccadilly Circus at night, London Bridge We each have our memory-images, pleasant and unpleasant.

What has the South African urban scene for us? We shall look at it, as we said above, as the man-in-the-street may see it walking, looking and imbibing the atmosphere of the place. We have taken our study to the small town because it is less complex than the city, but we will return to the city.

We shall start with Colesberg, a small town in the Orange River basin, on the Southern and more arid margins of the interior plateau of

1) Lewis Mumford (1938): *The Culture of Cities*, Secker and Warburg, p.480.

2) Wordsworth, William: *Upon Westminster Bridge*.

South Africa. The map (Diagram 1) shows where the town is, as well as the position of some other towns to be considered; Philippolis, Graaff Reinet, Beaufort West, Stellenbosch and Swellendam.

In Colesberg we shall take a walk up the main street, Church Street, (See Diagram 2), past the market square, Voortrekker Square, to the church; after a pause at the church we will walk westward along Dwars Street, and then northwards along Stockenström Street until we find ourselves back in Voortrekker Square. We will then cross Church Street and follow a diagonal way called Murray Street, at the side of the Commercial Hotel to the Municipal Offices and then on up the hill to the east to the end of the houses. We finally climb the hill for a panoramic view of Colesberg.

The illustrations show what we see if we approach Colesberg from the north and proceed up Church Street. The church with its tower is not clearly visible at first but attracts us. (Plate 1) We continue up the street which is quiet, with little traffic, a few trees and lined with single storey buildings; shops, houses and on the right another church. (Plate 2) We stop, because the street widens into a space, on the west side, the market square, Voortrekker Square. (Plate 3) We are tempted to leave our street and cross the square which leads invitingly into another square. As we look around we see that on the opposite side of Church Street there is a large hotel building with Murray Street curving away from us. (Plate 4) We resume our journey towards the church. The buildings now are mostly two storey and there are no trees. Dr. Lewcock's photograph of this part of Church Street in 1954, shows large trees and buildings of consistent form and materials. (Plate 5)

Looking back down Church Street we see unsympathetic new buildings and note the absence of trees.

We have now reached the climax of the progression up Church Street, the porch of the church with its tower above - the church which has attracted us all the way up the street. We have experienced a progression along a straight street. The tedium was relieved by the interest and the spatial experience of Voortrekker Square.

To get a better view of the town we climb the kopje behind the church. Then retracing our steps to the front of the church again we look westward along Dwars Street. (Plate 6) Our vista is terminated by another church, our third. Dwars Street appears to be a space; it is short and wide by comparison with Church Street. As we move towards the third church we see that a street leads off to the north. This is Stockenström Street. We cross a bridge over a stream into Stockenström Street and then looking back again we see the church with its tower. (Plate 7) Continuing our journey to the north we cannot help turning round and there is the church tower through the trees.

We soon find ourselves in Voortrekker Square again. It is rectangular but informal and with a public garden to one side. We enter the garden and look back across the square to another church (our fourth). The stream from the spring behind the church with the tower is bridged here again. We then move eastwards across Voortrekker Square to Church Street. How this view looked in 1954 is seen in the next illustration (Plate 8 - Lewcock photograph). We look back across the square to the police station and post office. We pass the market building and have a last look at this part of the square before crossing Church Street. (Plate 3 again)* Our last view is of the library with the curiously deformed monument to Queen Victoria in front.

Since leaving the large church in Church Street we have had a

*Plate 3 gives a glimpse of this view, with the Police Station in the centre, middle distance.

variety of spatial experiences, with additional interest provided by views of the ever-present church, and the contrast of the garden with the roads and squares.

We are curious to see where curving Murray Street leads. (Plate 9) Once again we notice the tower of the church across the roofs. (Plate 10) As Murray Street curves (Plate 11) so the municipal building comes into view. The street widens out into an irregular shaped space with the municipal building dominant in it. The water course is walled in. The street follows this course. Houses and small buildings fill the other two sides of the space. After looking around, we move on, attracted by a large gum tree and the promise of another space to the east of the municipal building. (Plate 12) As we pass the building we see the water course railed off. Murray Street turns to the east and we follow it up the hill. At the top we look back: the church tower and Colekop stand out on the sky line. (Plate 13)

We walk along the kopje to the north and get a panoramic view of Colesberg. (Plate 14) We see the town in the valley and the church with its tower dominating it.

On the walk we have experienced:

- (a) the formality of a straight street with a climax at one end;
- (b) interesting irregular spaces;
- (c) the recurring views of the dominant church tower;
- (d) contrasts of formal and informal buildings, and regular and irregular spaces;
- (e) consistent building materials;
- (f) discordant new buildings;
- (g) variety of plants, flowers and trees.

At the end of the 18th century the country, around the town that we now know as Colesberg, was sparsely populated. There were a few farmers who had moved north from the Cape and a number of Bushmen. The first mission in the area was Toverberg established by the London Missionary Society to teach and convert the Bushmen. A second mission, Hepzibah, was established a few miles away. In 1814 these two missions were combined and in 1818 withdrawn after facing many difficulties. In 1825 the Nederduitse Gereformeerde Kerk established a new parish of Torenberg as an offshoot of the Graaff Reinet parish. This was recognized by Lord Charles Somerset. In 1829, Sir Lowry Cole made a grant of 18,136 morgen of land to the church and the present name of Colesberg was adopted¹⁾.

In 1830 Colesberg was constituted a municipality. It started as a mission and a farming centre and today is a wealthy farming district noted for its sheep and horse breeding. It now has a population of approximately 5,000, all races. It has grown slowly in 138 years.

We are interested to know why Colesberg is located where it is. Botha's map showing the migration of the stock farmers in the Cape Colony during the 18th century shows the route to the north-east pointing towards Colesberg. We do not know how popular the route to the Orange River through Colesberg was, but it was a route used by explorers and settlers, and an examination of the area today is rewarding.

Colekop stands high above the plain like a tower or a beacon. (Plate 15) It seems reasonable to suggest that any traveller would use Colesberg for directional guidance. It can be clearly distinguished from

1) *Ons Kerk*, Nederduitse Gereformeerde Kerk, Colesberg. See also Colesberg in Botha, C.G. (1926): *Place Names in the Cape Province*, Juta, Cape Town.

15 to 20 miles away. Having travelled across the flat plain and arrived at Colekop a traveller would notice the valley, in which Colesberg now stands (Plate 16) and particularly the perennial spring and stream running down that valley. The average annual rainfall is only 10 to 12 inches and a perennial stream must have been an important feature. The little valley is sheltered from the coldest winds which blow across the Karoo and also it is fertile - a veritable oasis in a desert. Colesberg was well sited. It was started by farming and religious people and today Colesberg still bears the imprint of its natural features and its founders.

The main physical features of the town of Colesberg are the straight main road, Church Street, which runs up the valley and terminates on the church which is built on the hillside at the head of the valley. The natural spring is behind the church and the course of the stream from it has been responsible for the curving and winding of the other roads. The width of the fertile valley has controlled the width of the town. The growth of Colesberg has been down the valley from the spring and the church. At a specific point on Church Street where one of the streams changes its course and joins another, we find the market square with the largest hotel opposite. All the physical features of the town seem to be so rationally sited and the development seems to have been logical. We cannot help but think of some of the town planning decisions of our city fathers and wish for the clarity of thought and logical reasoning of the builders of Colesberg.

It is with regret that we cannot leave the story of Colesberg here. Unfortunately Colesberg is fast losing its character. In the so-called interests of progress old buildings are being pulled down to make way for road widening and pretentious buildings designed by unsympathetic architects and speculators. Nor can the new town planning escape criticism. The extension to the south is quite out of character. The character of Colesberg has been determined by its topography, the simple forms of the buildings and the use of common materials. Its character is that of a simple community, slow moving, slow thinking, but with a lot of natural common sense. This has resulted in a charming town, logically planned and built. The buildings are in a vernacular the people brought with them from the Cape; buildings uncomplicated in form and construction. The building skills required were simple and the materials bricks, plaster and corrugated iron were mostly at hand.

Colesberg is comparable with some of the Cotswold towns and old towns of Central Europe.

Today we find in Colesberg a few sophisticated new buildings unsympathetic in form and splattered with a very great variety of materials and colours. Gone is the good neighbourliness of the past and instead we have the garish, rude and opulent investors from the big cities.

What must we do to see that our towns and cities have a character comparable to the best in the past? We cannot put the clock back or hold up so-called progress or change human nature - and few of us would want to try. We have lost the image - we must recapture an image and use it constructively. We will return to this point later.

We will now widen our examination by comparing certain urban devices in South African towns with reference to examples overseas.

Site Image.

Dominating or remarkable natural features have marked the sites of many cities. We have seen Colekop guiding travellers to Colesberg. Durban has its Bluff, Cape Town has Table Mountain, and Rio de Janeiro has its Sugar Loaf - Sugar Loaf with its distinctive shape is seen from the sea, from many points on land and from the air.

Axial Termination of a Street.

We have walked up Church Street, Colesberg, and been drawn to the church with its tower which forms a termination to the street. Two other South African examples are Church Street, Cradock, where the church with its spire is a copy of St. Martin-in-the-Fields, London, and Voortrekker Street, Philippolis. There are many other examples. An overseas example is Amalienborg Plats in Copenhagen.

Axis through a Building.

While we are thinking in terms of axial relationships we may point out that the continuation of an axis through a building to another building can never be successful, because the axis cannot be appreciated. We have examples of this in Graaff Reinet and in London. In Graaff Reinet the axis of Church Street runs through the church across the public garden to the municipal offices. In London there is the axis of the Albert Memorial which passes through the Albert Hall and museums and other buildings. It cannot be appreciated except by looking at a plan.

Closed Street.

Dwars Street, Colesberg, can be regarded as a closed street. Another better known example is Parsonage Street, Graaff Reinet which is closed on Church Street by the Drosty Hotel (formerly the Drosty) and at the east end by Reinet House (now a museum and formerly the parsonage). Stellenbosch has Drosty Street, which does not read very well as a closed street because the building closing one end has recently been demolished and the dense foliage of the oaks in summer limits ones vision. A church on the north side terminates a cross axis in Church Street. Paul Kruger Street, Pretoria, has an interesting progression from the railway station to Church Square. It passes through a large space which has an axis across Paul Kruger Street, relating the Transvaal Museum and the City Hall.

A very famous example of a visually closed thoroughfare is in Nancy: the inter-related squares of Place Royale, Place Carrier and Place Stanislas form a sophisticated and carefully executed urban group.

Dynamic Tension.

We felt the attraction of the church with the tower in Colesberg. In Philippolis there is an example of a tension created by a church tower. Philippolis is remarkable for one main street, long and straight, except for a bend around the church. (Diagram 3) Walking up and down the main street, Voortrekker Street, one becomes more and more aware of the church with its tower. (Plate 17)

The church dominates the town: we see it from the back, the front and the side. Walking down Voortrekker Street away from the church, we experience a dynamic tension. We feel like puppets at the end of pieces of elastic. We walk away but know that we have to come back - the church tower is pulling us. Voortrekker Street is not of constant width; it widens out as it gets further away from the church. The effect is, however, increased by the houses being on the plot boundary near the church but set back with front gardens further away from the church. The church tower holds the town and the people itself. Voortrekker Street opens out as it proceeds southwards to the broad flat plain. There is no need for this street to have a visual end. As long as one can see the church ahead or feel it behind, one is drawn to it.

We experience a similar tension in Beaufort West. Once again it is a church tower. (Plate 18) This time, however, the building is not on the axis of a street but is on a corner site at the intersection of two streets in the centre of the town. The building on the axis of the main street is the gaol but it is too insignificant to be noticed in spite of its important setting. The church tower, however, pulls one to the cross roads

from any of the four arms of the cross streets.

The obvious example from Europe of a tower exerting its influence to draw us towards itself is the campanile in St. Mark's Square, Venice.

Irregular and informal streets.

One of our walks in Colesberg was along curving Murray Street to the municipal offices and then on past the gum tree and up the hill to the kopje. Bird Street, Stellenbosch, is similarly an interesting winding street which opens out to the Braak at one stage and then closes in again before it meets Dorp Street. High Street, Grahamstown, is another interesting street for its spatial qualities.

We have not the time to examine many examples, but we will look briefly at Gillespie Street, Durban, because it is much larger in scale than the other examples. Gillespie Street starts visually at West Street and ends visually at the intersection where Prince Street starts. (Plate 19) In this length the buildings provide a wall on the west (Plate 20), but there is a space, irregular in shape and cluttered with many things, transformer house, car park, letter box, etc. (Plates 21 and 22) The street is full of life, day and night. Off Gillespie Street there are many narrow ways and most of them have some interest; some are through to the sea and others to Point Road. (Plates 23 and 24)

We have not the time to look at any overseas examples but we will mention Regent Street, London, and Corso Victor Emmanuel in Rome, as ones we could examine.

To complete this comparative study we should examine buildings in detail, planting, monuments, street furniture and consider the whole question of scale. Unfortunately we have not sufficient time.

This study must, however, be taken further in an attempt to find out *why the towns are as they are*. Were they planned or did they just happen? An examination of the earliest plans of the towns will give us some of the answers.

Colesberg.

The earliest map dated 1830 (Diagram 4) shows us the factors which were important in its establishment: the spring, the water courses, the church on the axis. Whoever drew the first plan intended the town to have a climax, a straight main street with the church on the axis. We must regard this as a planning decision with the visualisation of the town in three dimensions. We may say the original town planner had an image of the town in the future. Today his image is a feature of the urban scene.

Another question we can ask is this: If the original planner thought in terms of straight lines and right-angles how is it there are winding, irregular side streets? The informality and interest in these winding streets and spaces gives character to Colesberg and by contrast makes the whole town more interesting. The answer to our question lies in the topographical features; the spring and the two streams. Murray Street follows a stream.

Philippolis.

Philippolis is the oldest town in the Orange Free State, and has a population of just over 2,000, all races. The earliest map we can find is one signed by Gustave Baumann dated 1881. We do not know whether the

tapering of Voortrekker Street was intentional or just a mistake, but it was there in the original map. We do not need to look far to find the reason for the bend in the road around the church. To fit in the church site and the road between the river and the kopje the road had to bend - expediency. It may also be something to do with defence. The church and the market space are crowded against the kopje, where Adam Kok (who laid out the township) had two cannon on the kopje to defend Philippolis - these cannon can be seen today in the garden in front of the municipal building.

Graaff Reinet

The earliest map of Graaff Reinet (partially destroyed) shows the axial arrangement of the church on the main street, Church Street. It shows one other very interesting feature, the extensive planting of trees in Church Street with planted breaks in the street off to the west. Looking at Church Street today one is conscious of the lack of trees. There is a photograph in the museum which shows Church Street lined with well-grown trees. Clearly the original town planner had the image of a tree-lined main street for Graaff Reinet. In writings many travellers have remarked on the trees. These are missing today.

By comparison the pear trees in Donkin Street, Beaufort West, are also remarked on by travellers but they are being replaced, where necessary, with young pear trees.

Beaufort West today bears a strong imprint of its original plan. It is sometimes referred to as the 'Oasis in the Karoo' and its water supply was certainly an important reason for its existence. Beaufort West was laid out on gently sloping, fertile ground between two rivers. The early plan shows the site for the church. The architect certainly used the site to very good advantage although some may question its boisterous form.

Conclusions.

We have now spent some time looking at parts of South African towns and maps of towns. What conclusions can we reach on the question of appearance?

We have acknowledged that the city is a complex organism, growing and changing; that appearance must be a considered factor in the urban environment, that although our mechanism for perceiving is inconstant, we seem to notice appearance when it has image-making qualities. Finally we have seen that image-making qualities which we notice in South African towns today have in many cases resulted from original town planning intentions.

I have looked at about 40 towns in South Africa. Those towns which I have written off as non-de-script, as having no positive qualities, have original maps similarly showing no positive qualities - perhaps just an unrelieved grid.

Planning diagrams can be like the sheets from a computer - facts, correct facts - but without a spark of life. On the other hand planning diagrams can be sensitive drawings showing the future potential in the sphere of appearance. We have to consider the city at two scales. The planner's scale - a very large one in terms of today's urban requirements; and the architect's or urban designer's scale - the human urban scale. At both scales, appearance should be considered. The planner should have an image, as many of the earlier planners did. This should not be preconceived but should arise out of the natural features of the site, the hills, valleys, rivers, and the requirements of the plan. The plan must make it possible for the urban designers to develop and exploit the image at human scale.

The town will grow and change and may develop into a large city: buildings will be rebuilt. If, however, the original image was well founded it will continue to give direction and character to its locality. It will remain an image. The original idea will come through strongly and clearly in spite of discordant buildings. This image, this idea, will give pleasure because it is a positive contribution to the appearance of the city.

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Diagram 1 : The Location of Colesberg

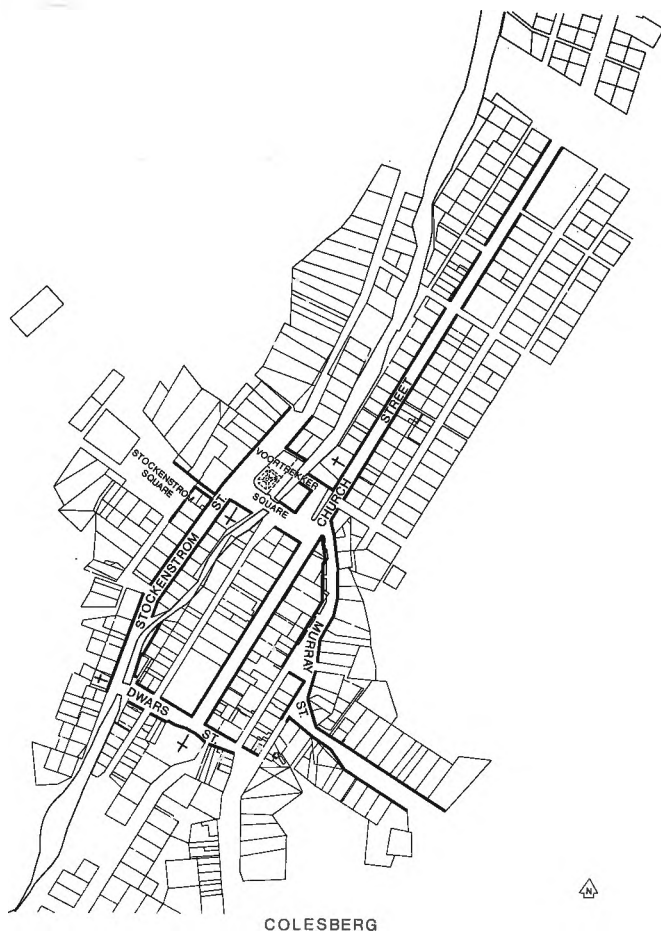


Diagram 2 : Map of Colesberg

ILLUSTRATIONS OF COLESBERG



Plate 1 : Church Street, Colesberg



Plate 2 : Progressing Along Church Street

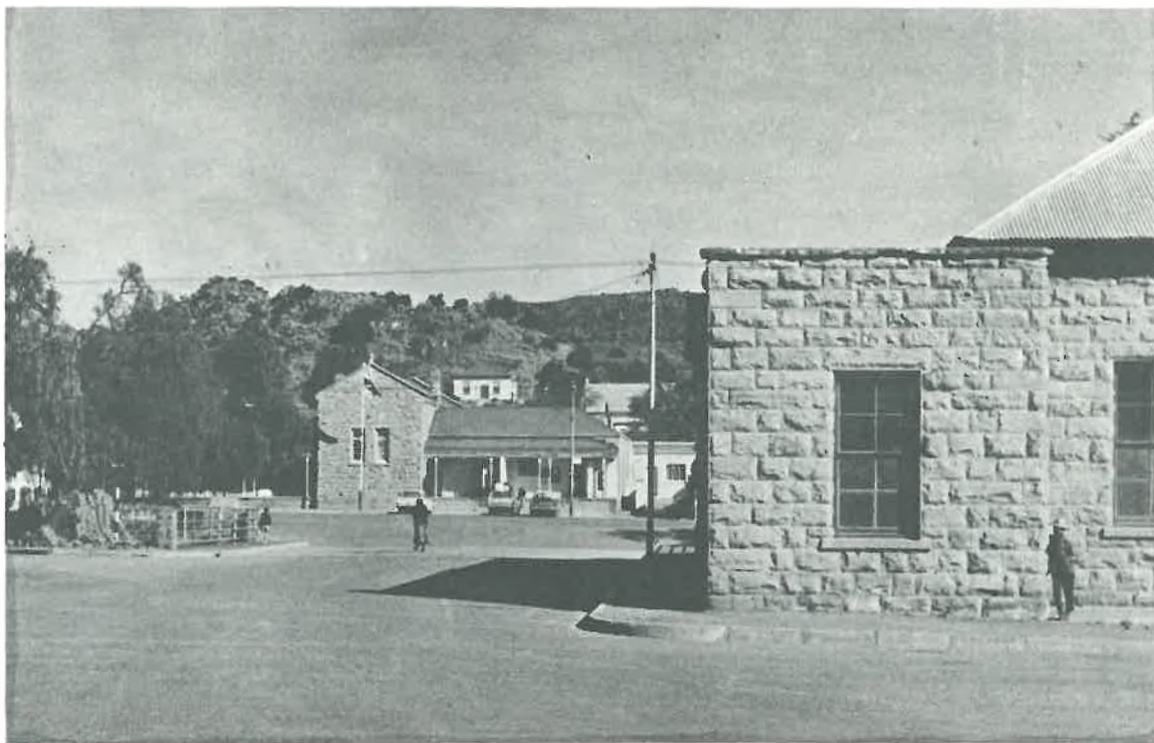


Plate 3 : Voortrekker Square

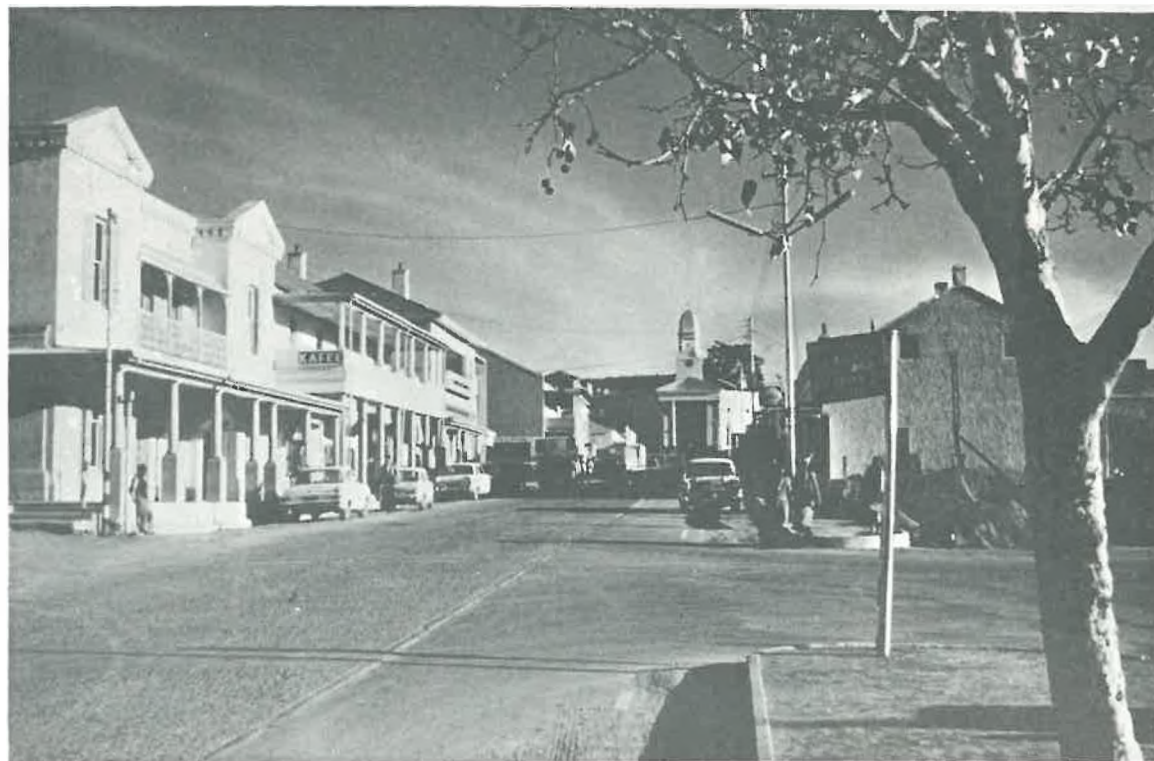


Plate 4 : Church Street, beyond Voortrekker Square



Plate 5 : The End of Church Street, with the N.G. Kerk
(Photo by Lewcock, 1954)

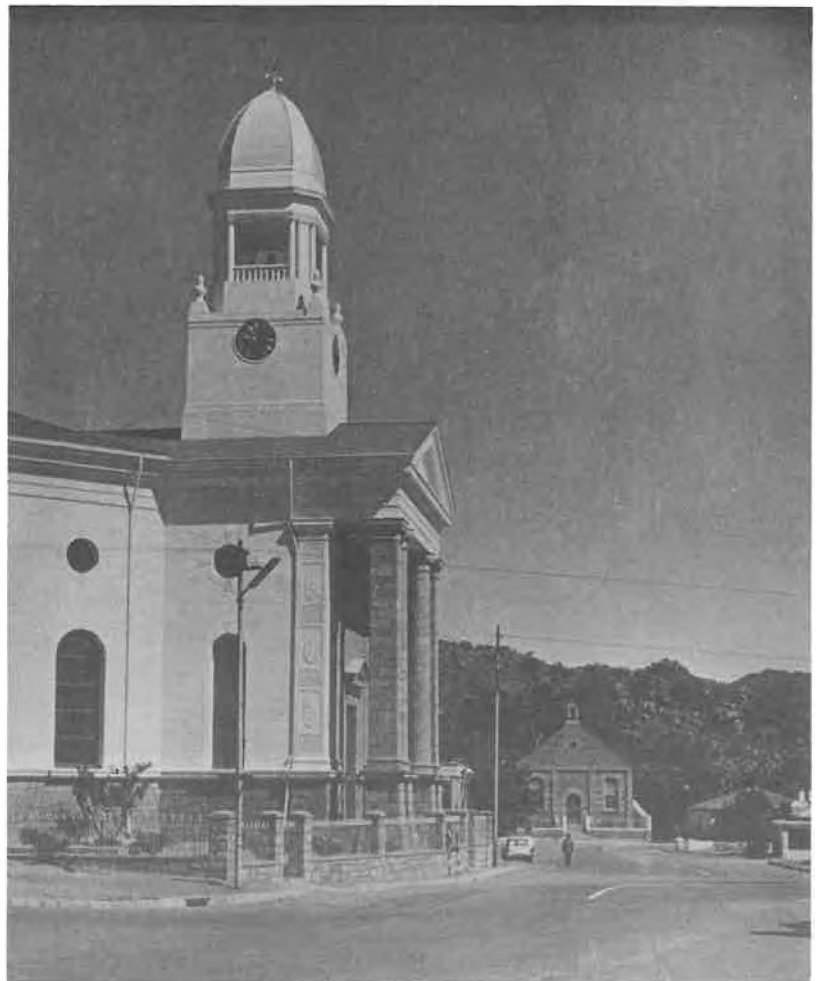


Plate 6 : Dwars

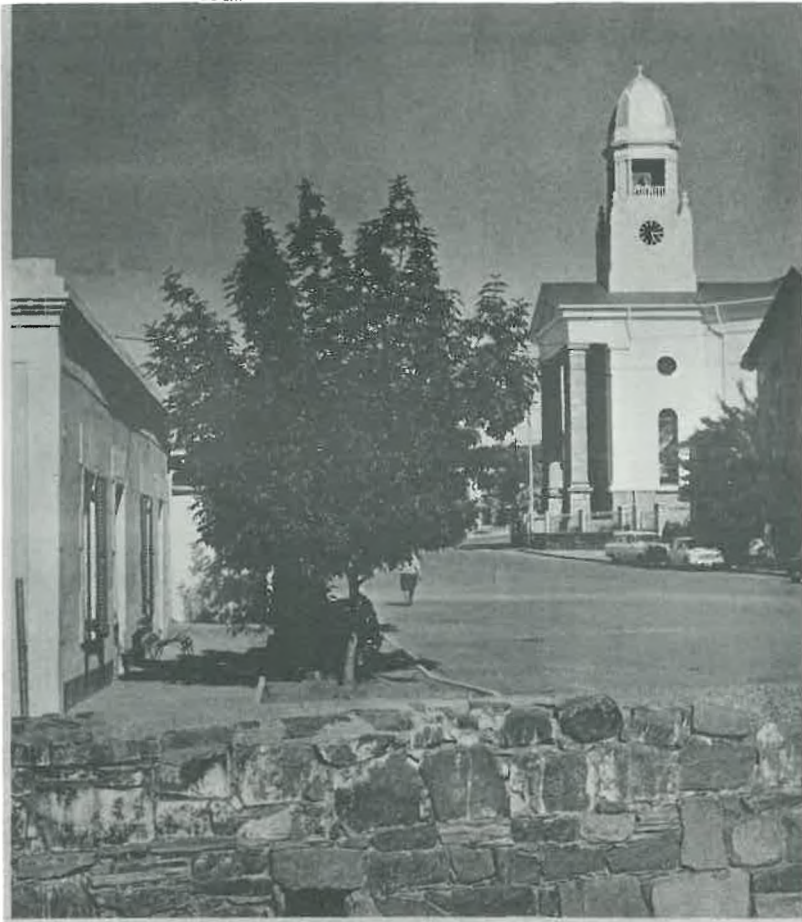


Plate 7 :
N.G. Kerk from
Stockenström Street



Plate 8 :
Church Street, from
Voortrekker Square
(Photo by Lewcock, 1954)

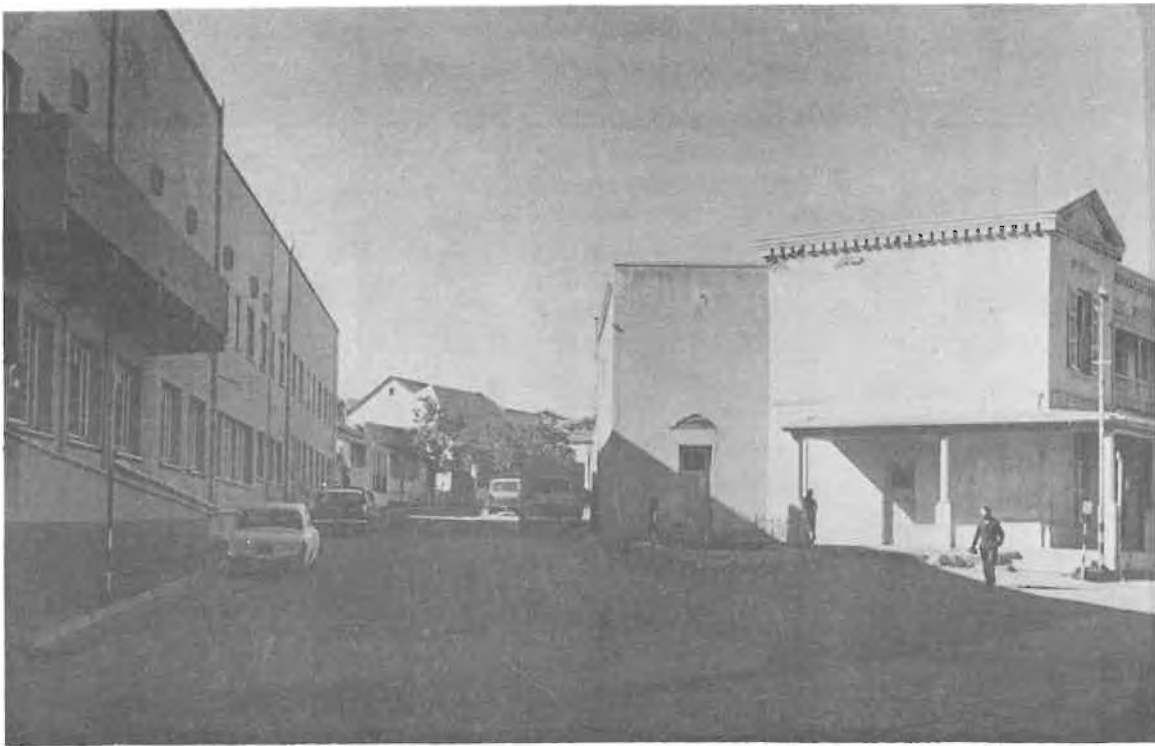


Plate 9 : Murray Street from Church Street



Plate 10 : Murray Street, with a view of the N.G. Kerk Tower



Plate 11 : The Municipal Buildings from Murray Street

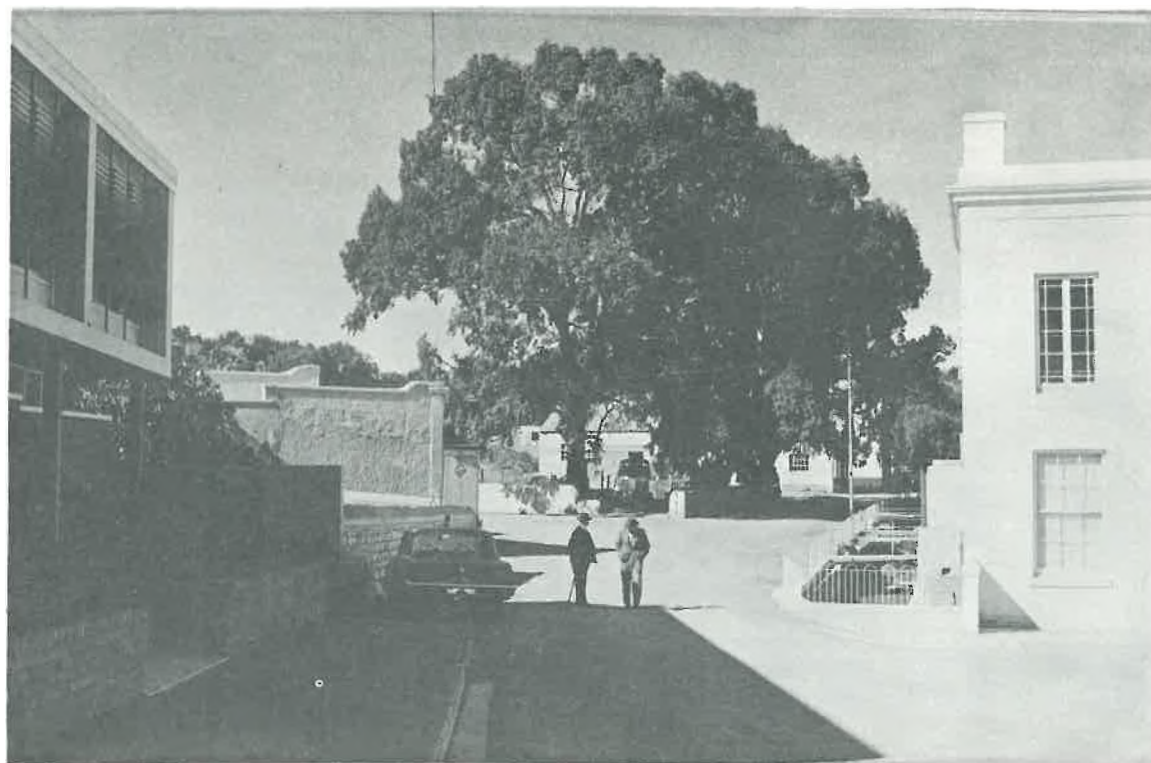


Plate 12 : Murray Street at the corner of the Municipal Building



Plate 13 : Murray Street, with the N.G. Kerk Tower (middle distance), and Colekop beyond



Plate 14 : Panoramic view of Colesberg, from the hill north of the Town



Plate 15 : Colesberg, showing the N.G. Kerk Tower, and the Dominant landmark of Colekop



Plate 16 : An Aerial View of Colesberg
(Photo : Air Survey Co.)

Plate 17 : Philippolis: The Church commanding Voortrekker Street

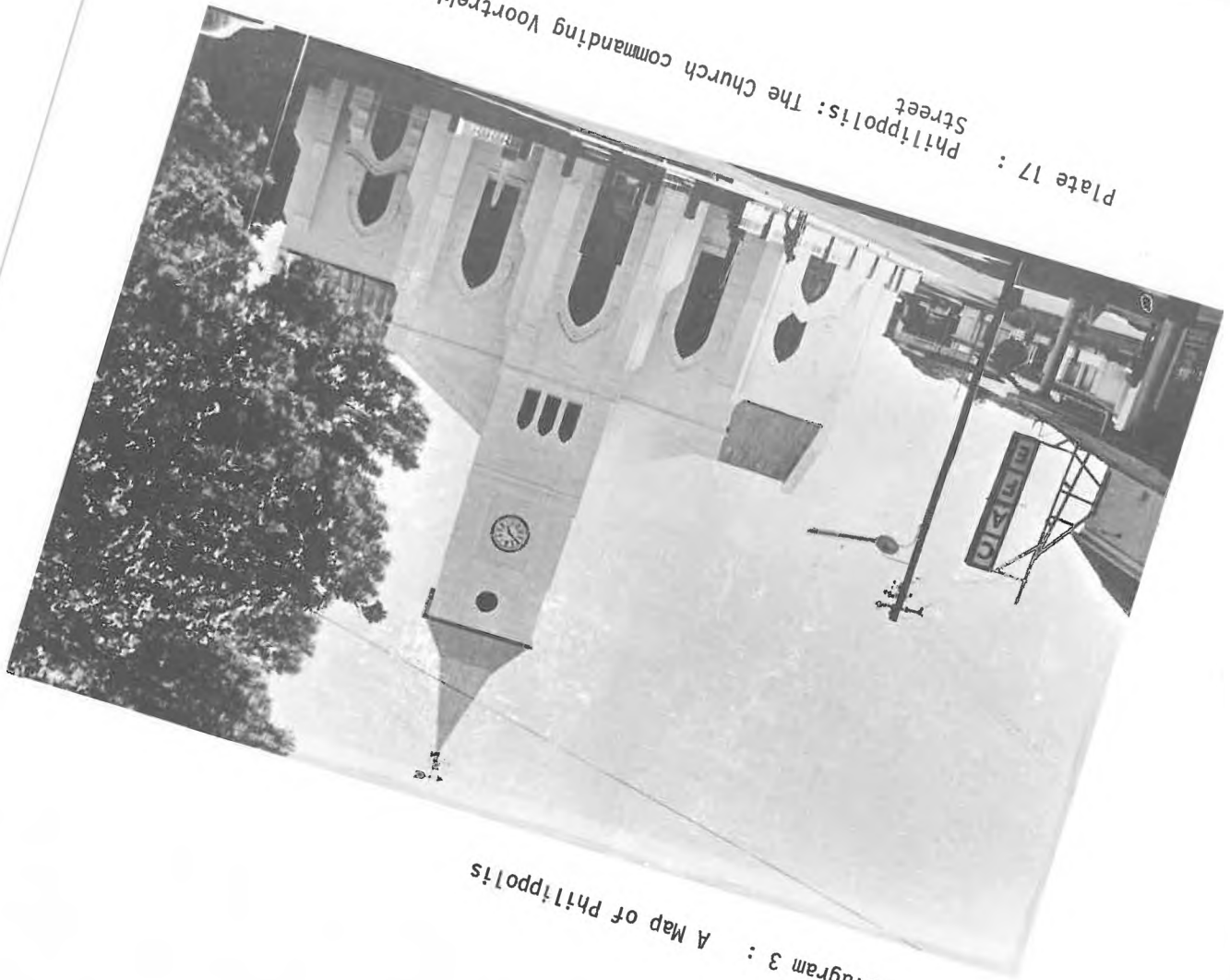


Diagram 3 : A Map of Philippolis





Plate 18 :

Beaufort West: Church
Tower, Donkin Street



Plate 19 : Durban - Gillespie Street, looking South



Plate 20 :

Durban - Gillespie
Street, looking North



Plate 21 : Durban - Gillespie Street Transformer House



Plate 22 : Durban - A Space in Gillespie Street

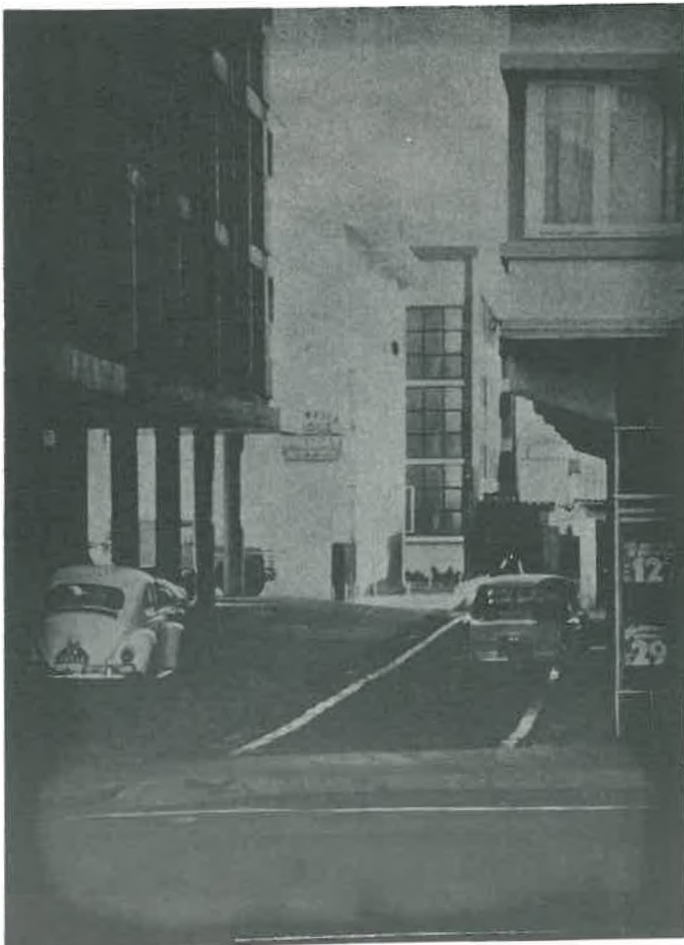


Plate 23 :

Durban - A winding side road off Gillespie Street

Plate 24 :

Durban - A view through to the Sea from Gillespie Street



Planning of Colberg 1830

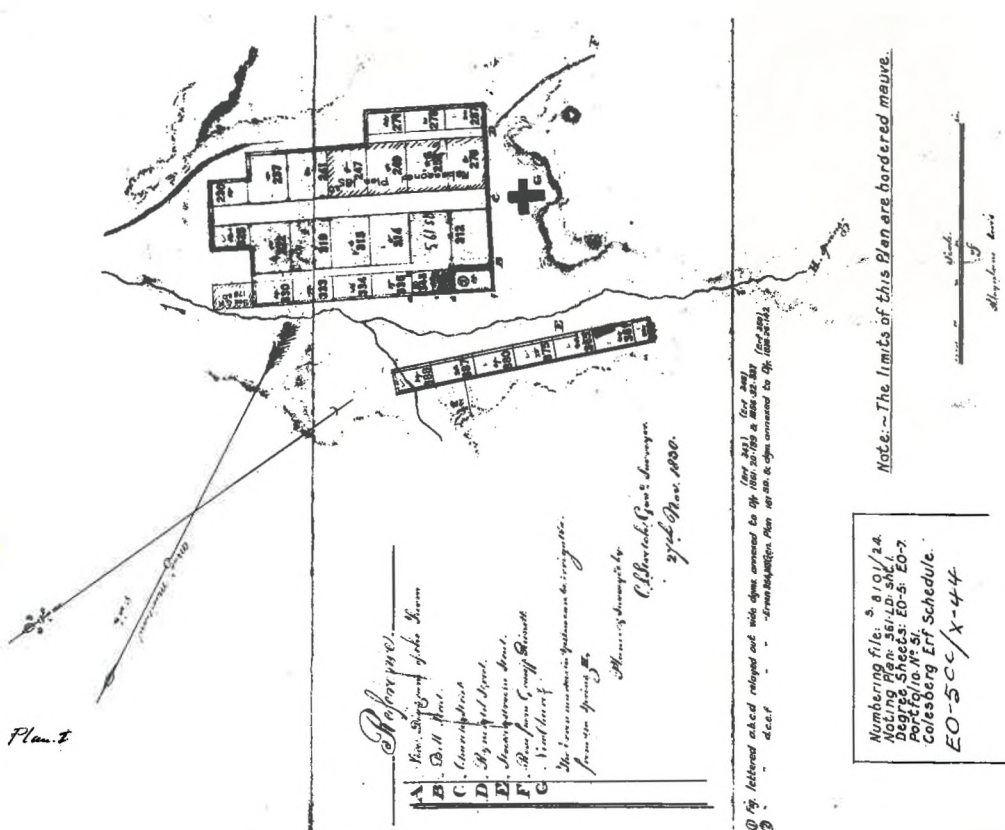


Diagram 4 : Map of Colesberg, 1830

PATTERN AND TREND OF URBANISATION

THE SIZE OF CITIES

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University of the Witwatersrand

We speak of a world demand for urbanised centres, but accounts of the 'urban revolution' make it clear that what is in issue is something much more complex than demand in its ordinary economic connotation. The movement of people into cities is the resultant of many factors : in developed countries people moved to cities, as they now move between cities, in search of higher or more stable wages, and they are induced to remain by various services and amenities. While enterprise, by creating urban employment, has played the most important role in this process in developed countries, governments have also taken a hand in it, notably in the U.S.S.R. and China.¹⁾ In the course of a paper presented at Toronto²⁾ in 1967 Ernest Weissman put forward the concept of a 'fully' organised country, namely one in which:

- (i) increase of urban population and total national increase are equal (or the former exceeds the latter)
- (ii) Four-fifths of the population already live in cities with more than 5,000 inhabitants.
- (iii) City development is characterized by internal population shifts within metropolitan regions, with a consequent need for readjustment and nationalization of physical arrangements in the city itself and the region.

Weissman makes it clear that if it is now the most populous regions of the United States that are experiencing explosive growth, and not the largest cities, it is because these, unlike the largest cities, often have scope for readjustment and rationalisation of physical space. But for how long? Weissman says:

26 '.... The population of the United States may double by the end of the century, and if current trends continue as forecast, most of the population will converge on large cities in the already over-extended and crowded metropolitan belts of the Atlantic and Pacific coasts and the Great Lakes area.

27 'If this is correct, a second America, virtually fully urbanized, must be built in less than four decades. As much must be built in that time as was built throughout the country's history. How will this be done? When? Where? According to what pattern of human settlements and production? And to what standards utility and power? For transport and

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- 1) A good short account of the urban revolution is given in Cole, J.P. (1963): *Geography of World Affairs*, (2nd. Edition), Pelican, pp.106-113.
 - 2) Weissman, E. (1967): 'Planning and Urban Design', Paper No.7, *Centennial Study and Training Programme on Metropolitan Problems*, Bureau of Municipal Research, Toronto. (The authors of the present paper were both members of the Johannesburg delegation - Johannesburg was one of the 40 cities represented at the Conference.)

communication? For cultural and social amenities? In what order or priority? The economic, technical and human resources needed for these tastes are indeed staggering. Even for this highly developed country'.¹⁾

Nevertheless, Weissman believes that the means will be found to divert the urban flood from these over-extended metropolitan belts, thanks to abundant power from nuclear energy which will facilitate industry in new places, to intensive mechanization and automation and to other new technologies.

In undeveloped countries the growth of large cities tends to be associated with rural poverty rather than with urban opportunity; the Asian megalopolis has been called 'parasitic' on such economic development as takes place, unlike the Western city that is 'generative' of such development.²⁾ We select a terse passage from a restrained account of the parasitic city:

'The cities grow not in the degree in which they need factory hands, but in the much greater measure in which land is short in the countryside and at least some food is made available in the city. However miserable the situation of the marginal population of Calcutta, their numbers keep increasing; presumably the villages from which they come provide even fewer amenities than the Calcutta sidewalks. The increasing city population, whether productive or not, means increased pressure on the countryside to secure the means of keeping it alive'.³⁾

Calcutta's increase of population is explosive not only in relation to employment but also to essential services. We were told by a Calcutta delegate⁴⁾ at Toronto that during the last five years the city's water supply, inadequate five years before, had not been augmented although its population had doubled during that period. No relief is in sight: in 1963 Professor Kingsley Davis estimated that if the population of India increases at the rate projected for it by the United Nations, the net number of immigrants to cities between 1960 and 2000 will be of the order of 99 to 101 million.⁵⁾

It is hardly surprising that no one has yet put forward a single model (solution) that looks adequate for situations so different as those of distinctively 'over-urbanised' countries and the 'fully-urbanised' countries. For example, Weissman in the paper referred to above devotes a brief section

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- 1) Weissman, E. (1967): Ibid.
 - 2) Hoselitz, B.F. (1954): 'Generative and Parasitic Cities', *Economic Development and Cultural Change*, 3, 278-94.
 - 3) Keyfits, N. (1965): 'Urbanization in South and South-East Asia' in Hanser, P.M. and L.F. Schnore (eds.), *The Study of Urbanization*, Wiley, London. For a more dramatic picture see Breese, G. (1963): 'India's Urban Future : Selected Studies from an International Conference sponsored by Kingsley Davis, Richard L. Park and Catherine Baner Worster, 1962', *Economic Development and Cultural Change*, 12, 89-90.
 - 4) This is the 1967 Toronto Conference referred to in footnote 2, p.
 - 5) Davis, Kingsley (1965): 'Population' in *Technology and Economic Development*, Pelican, p.52. (This is a republication of a Scientific American Publication.)

to the various rates of growth that would, each within a different time-span, close the gap in output per caput between the United States and India¹); no mention whatever is made of the sort of environmental changes that might be expected to accompany this general economic improvement, and when later in the paper he discusses environmental problems they are quite unmistakably those of developed countries. This seems the more honest course to adopt, but the conference for which Weissman's paper was prepared seemed unable, throughout its proceedings, to commit itself to a clear line of action. Like Buridan's Ass it condemned itself to a slow, frustrating death for being unable to choose between the realistic and the idealistic bundles of hay before it.

Since urbanised living is nothing if not a 'package deal', we are mainly ignorant of the incentives that motivate a given individual X to move from a less urban to a more urban place whereas Y prefers to stay behind. We are also ignorant of the disincentives to reverse X's decision in the light of experience, although these are just strong enough to cause Z to do so.

It seems likely that miscalculation of the advantages of immigration to a highly urbanised place bears a resemblance to the miscalculation of those of certain careers. Young and inexperienced persons often make career choices based upon exaggerated expectations of the income, status and opportunity for self-dramatisation²), offered by the career selected. It is not necessary to brand as spurious all the values of urban life to recognize that not all those who choose it, choose wisely.

Can one hope to isolate (i) those advantages of living in a very large city which decisively influence large numbers of people to choose the way of life it offers; and (ii) those disadvantages which generate nostalgia for a different way of life, but are not quite sufficient to lead to the reversal of the previous choice? If this could be done, it can hardly be doubted that this would contribute to the establishment of more well-planned cities of reasonable size. As matters now stand the expectations of employers as to where the best supply of labour is likely to be found is functionally dependent on the expectations of employees as to where advancement is to be had, namely in the largest cities. The mobility of manpower is in part geographic, and is orientated towards urban places of successively greater size: life and work in each urban environment serves as a social and technological preparation for life and work in an ample one.

Where urban wealth and rural poverty co-exist to the extent found in the Republic of South Africa, and big city life is preferred for the sake of real as well as supposed advantages, the problem of decentralisation becomes formidable and is exacerbated by the use of coercion against the poorest and least urbanised racial group.³)

The largest cities are already suffering from a degree of disorganisation which makes it obligatory to adopt a larger unit for purposes of planning. Despite this decision-making remains in the hands of

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- 1) Weissman, E. (1967): op. cit., paragraphs 65-69.
 - 2) In the discussion by Lewis Mumford (1961) of the Mediaeval City, (in *The City in History*, Secker and Warburg, London), the role of the city in the enactment of drama, its function as a stage, is emphasised.
 - 3) van der Horst, S. (1964): *African Workers in Town*, Oxford University Press, Cape Town. Chapter II contains some interesting reference to the desire of Africans in Cape Town that their children should grow up in their homelands. This clearly reflects the nostalgia of the parents - but the children remain in Cape Town.

the older unit of local government, namely the city, to the extent that national and provincial or state governments have hesitated to take it over.

In the mediaeval city, public and private decision-making were largely in the same hands, but today private enterprise has outrun both city boundaries and the capacity of cities to provide municipal services. It has been largely instrumental in shaping, or misshaping, the urbanised region which Frederick Gutheim, President of the Washington Centre for Metropolitan Studies, sees as:

'not simply an overspill of the city, or a territorial unit, but a population living as an organically interrelated group of people whose jobs, economic activities, social institutions, leisure time and mobility are working together in a highly integrated fashion.'¹⁾

There are three objections to this statement. Historically the urbanised region *is* primarily an overspill; it is merely a territorial unit until legislation turns it into a governmental one, and however organically inter-related it may be, however integrated in its private decision-making, it is governmentally fragmented and therefore incapacitated.

Because the urbanised region has been the subject of fairly detailed study, and has yielded vast quantities of data in relation to the number of effective decisions that have been taken on the basis of these data, the idea has caught on that mechanised decision-making might meet the needs of the case. The quantified goals incorporated in a computed programme may replace the conflicting goals of governmental fragments. The validity of this particular idea has yet to be proved, but quite apart from the problem of fragmented jurisdiction the complexity of the urbanised region calls for highly sophisticated programming, particularly where completely new entities are brought into existence in terms of a plan which is from time to time, or even continuously, tested through on the economic model on which it was based. This is how the new city of Columbia, Maryland, which is intended to have a population of 110,000 by 1980, was designed and is controlled in its development.²⁾

The potential contribution of the computer to reshaping the urban environment is being extensively explored.³⁾ The decentralisation of urban activities so basic as the stock market, and the complete elimination of cash from urban transactions, are developments well within reach.

The computer techniques mentioned above depend not only on elaborate data-processing but on the development of systems analysis.⁴⁾ Like all

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- 1) Senior, D. (ed.) (1966): *The Regional City*, Longmans, London, p.9.
 - 2) See *'Fortune' Magazine*, January 1968.
 - 3) See Sweeney, B.S. and J.C. Charlesworth (eds.) (1967): *New Scientific Approaches*, Monograph No.7, Academy for Political and Social Science,
See especially the papers by J.H. Hargreaves: 'Computers and the Changing World', and by J.G. Kemery: 'The City and the Computer Revolution'.
 - 4) For an exposition of systems analysis see Kuhn, A. (19): *The Study of Society*, Social Science Paperback, especially pp. See also Mallows, E.W.N. (1968): *Spatial Planning : A Systems Approach*, Paper to South African Institute of Civil Engineers' Convention, Pretoria, July 1968.

branches of mathematics, systems analysis is a mode of thinking which it is possible, however clumsily, to apply in non-mathematical forms to real-life problems. It is a form of applied logic, the rigour of which ensures the elimination of inconsistency in the attempt to solve highly complex problems. Where, as in the establishment and development of Columbia, the concrete entity has been constructed from a model that takes account of every scientist and the city planner, the potential of systems analysis is tested under conditions which are favourable both to its application and its further development.

It is easier for an artificial pilot to steer a liner across the ocean than to take a canoe through the rapids. Those areas of uncertainty that accommodate political behaviour may, for example, resist systems analysis longest, though it was successfully employed to predict the Watts riots in Los Angeles County in 1965.¹⁾ Prediction is, of course, a necessary but not a sufficient condition of control.

In a foreword to Jacques Ellul's 'The Technological Society'²⁾ Robert K. Merton wrote:

'The technician sees the nation quite differently from the political man : to the technician, the nation is nothing more than another sphere to which to apply the instruments he has developed. To him, the state is not the expression of the will of the people nor a divine creation nor a creature of class conflict. It is an enterprise providing services that must be made to function efficiently. He judges states in terms of their capacity to "utilize techniques efficiently"....'

The techniques needed for manning and controlling the South African environment are available now, and it is only a question how extensively and in what depth they are to be applied. It would be quite possible to confine them to such problems as those of water and other natural resources where their results are most reliable. On the other hand, account can also be taken of the human factor, as is being increasingly done in the United States - this is the true nature of the planning revolution, namely the accommodation of physical to human planning and not only the reverse.

If human beings are to be taken into account in planning the environment, it is necessary to have a model of man that takes account of conflict in human values and in social and political action. It is impossible to make do with a model that treats human beings as the docile recipients of whatever a benevolent bureaucracy chooses to give them. It has been said that:

'... (Class) conflict is likely to be more acute, the less mobility there is between the groups and the more self-conscious of their identity and distinctiveness the groups become. The most acute case of class conflict is where the rich and the poor have totally different cultures, perhaps even different languages, and where there is no mobility from one group to another'.³⁾

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- 1) Lessing, L. (1968): 'Systems Engineering Invades the City', *Fortune Magazine*, January 1968.
 - 2) Ellul, J. (1965): *The Technological Society*, (English Translation), Cape, London, p.xi.
 - 3) Boulding, K.E. (1963): *Conflict and Defence*, Harper and Row, New York, p.206.

What must be remembered is that conflict lies at the base of creation and innovation, and without both of these latter activities any society would die. As Storr has said 'Utopias in which men did not compete or struggle would be unimaginably tedious: mass associations of indistinguishable nonentities'. 'A man', J.S. Mill said 'cannot be certain of his own opinions till he knows his opponents' even better than his opponent does himself: but without conflict there can be no opponent'. The humanising of conflict depends on the limits and constraints that society imposes on it. Conflict is a factor at work in all societies, not merely in our own. It should be possible to formulate *rational, quantitative* constraints for humanising conflict. This, however, means that social stresses must be calculated by the social scientist - not by the politician who proclaims that 'this' will inevitably lead to 'that', which will lead to the 'other', and so on, all the way to disaster.

It is no more than common sense to rely on market forces where these are likely to favour sound development, but there is no reason to believe that the human environment can be left to these once this environment achieves a size beyond that of the early urban communities. For it is the threatened scale of these urban communities that has made the free random play of a myriad individual wills a quite inadequate tool for creating a human environment. Man has no other option but to create some ideal model of a city, and apply it to actual examples. The difficulty is to adopt the historic ideals or models to a totally new situation - the city or urbanised region of many millions. It will have to be based on human needs, but human needs have always changed with their contact, and we have to make some prognosis as to what those needs will be for a multi-million entity. Will the human being still need the sense of personal, individual identity, the comfort of small compact communities giving the feeling of an extended family, the sense of confidence and resolution given by territory and the habits of a permanent 'home'? Or will the human being of the future be permanently 'mobile' physiologically, and ill at ease if he or she does not move jobs and home and friends at frequent, perhaps irregular, intervals? And how important will the cult of physical health and physical recreation, social or private, become? Will it become more dominant than work and more demanding than mental and spiritual recreation?

All these questions will affect the basic planning assumptions and will be major form-givers in any new urbanisation pattern. We have, in fact, to make assumptions as regards human behaviour and human values, and from those assumptions have the confidence to rely on the models chosen, and do everything in our power to implement them. Of one thing we may be relatively certain: the rate of change is not decreasing and the size of cities, if unchecked, is always increasing. The common-sense policy is clearly to assist, and so rationalise, both these factors. This would suggest a loose, freely articulated pattern of urbanisation, with the whole kept together by a powerful and flexible network of transportation. In such a loose network, growth can take place at points of low or high density, and the whole system can give many diverse options to all its participations. In such a network, proximity can give rise to conflict and so innovation, but the open texture allows for movement and choice, and so the resolution and dispersion of conflict.

We have to fit the form to the potential of the human need: not what the need is, but what it may become if it is optimised. In this way the act of planning can be creative, for it creates a new human potential and capacity. Planning can be made the key to a new Utopia represented by the 'fully-urbanised' country, for it has roots in human behaviour, and old dreams can be harnessed to new realities. We have in fact no alternative to planning, for the alternative is to admit we have not the power to

control either our destiny or our environment¹⁾: and since the one controls the other, we have to do both.

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1) The 'over-urbanised' country, (such as India, for instance) is a symptom of loss of control of both environment and destiny.

THE SPATIAL ARRANGEMENT OF TOWNS IN PORTION OF
THE REPUBLIC OF SOUTH AFRICA

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Rhodes University

A branch of research that is at present receiving a great deal of attention is the study of urban places. A wide variety of aspects can be considered, but I shall confine myself to the spatial distribution of towns.

There are a number of possible alternative ways in which towns may be spatially arranged: Firstly, urban settlements could be the result of an entirely random process, and the establishment of a town on any portion of the earth's surface would be the result of pure chance. In this case each area would have an equal probability of urban development occurring there. Towns are, however, the foci of economic activities, and human decisions are involved in their establishment and continued existence. It seems, therefore, that some non-random pattern should be evident in their distribution.

Secondly, an agglomerated or clustered pattern could also be expected to characterise the distribution of urban settlements. Such concentrations are easily recognisable in parts of the Republic. Diagram 1 shows such a concentration in the Free State, South Africa. Concentrations of this type can be ascribed to various geographic factors - viz. the existence of mineral deposits, availability of water, and port facilities. This is not, however, a characteristic of all or even the majority of urban places, as the general pattern appears to be dispersed.

The third, and from the geographic point of view the most acceptable distribution, would be a more or less regular pattern. Such a regular distribution is in fact a key aspect of the theoretical framework formulated by W. Christaller¹⁾ and adjusted and extended by A. Losch²⁾. The Central Place Theory is concerned with the location, size, nature and spacing of urban centres and is based on the optimal distribution of establishments to supply goods and services to a dispersed population. The hexagon is the most economical geometric form by which an area can be divided equally between a number of points, and settlements arising at the nodes would be arranged in a regular pattern. A hierarchical system of central places is thus presumed to come into existence forming, under ideal conditions a hexagonal lattice on a homogeneous plain. A perfectly regular, hexagonal pattern of settlement is almost never found on a map, thus reflecting the obstacles present in the realisation of the principles. This is due to the diversity of local conditions. An attempt must therefore be made to test the correspondence between the theory and the existing settlement patterns in various parts of the world.

The Republic of South Africa lends itself particularly well to such a study of the spatial arrangement of towns, as large areas

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- 1) Christaller, W. (1933): *Die Zentralen Orte in Sddeutschland*, Jena; Also by the same author, (1962): 'The Hierarchy of Cities', *Land Studies in Geography*, Ser B., 24, 3-11.
 - 2) Losch, A. (1938): 'The nature of Economic Regions', *Southern Economic Journal* : 5, 71-78; and by the same author (1954): *The Economics of Location* : New Haven.

of the plateau may be said to conform with the optimum conditions as suggested by Christaller. Consideration of the map as a whole shows a markedly uneven distribution of the towns, and the picture is very little clearer when certain specific areas are studied. Reference to the map shows that the study area chosen includes two contiguous portions of the Eastern plateau region. The co-ordinates of the more northerly section are Latitudes 27° and 29° S and Longitudes 24° and 30° E and of the other are Latitudes 29° and 32° S and Longitudes 24° and 27° E.

DISTRIBUTION OF TOWNS

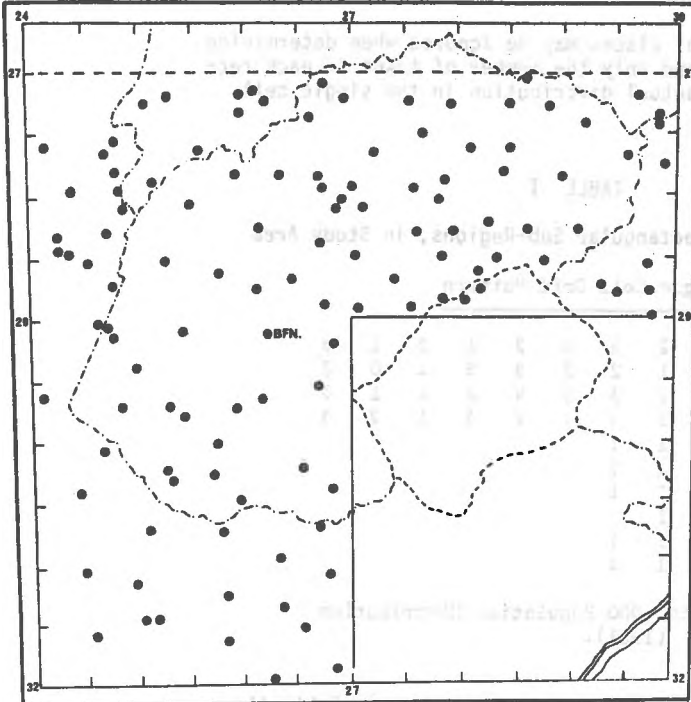


Diagram 1: The Distribution of Towns in Two Contiguous Areas of the Eastern Plateau Region of South Africa.

These boundaries were chosen so as to exclude the main mining region of the Southern Transvaal; and the Northern fringe of the Orange Free State, with its large cities and complicated urban structure; and also to exclude the sparsely populated region of the Karoo and Northern Cape. In the East and South the boundaries have been drawn to conform, as far as possible, with the plateau edge and the international border of Lesotho. Within the study region the land has been settled for over 100 years by people with an urban background. There are few African reserves, the transport network is reasonably-well developed, and most of the places carry out both basic and non-basic functions by acting as service centres for their immediate hinterland, and in turn are supported by the adjacent rural region.

Within the study area an attempt has been made to identify the existing spatial arrangement of the towns. Two different statistical methods were used in the attempt. Firstly, a formula derived by Dacey¹⁾ in an attempt to show that a more-regular-than-random pattern exists, was used. This formula draws on probability theory in constructing an urn model. Secondly, the method suggested by Medvedkov²⁾ was applied. This uses the entropy formula to measure the degree to which the settlement pattern deviates from complete regularity. These two methods were chosen in preference to the popular nearest-neighbour method of analysis, as they appear to have a sounder mathematical basis; and the relatively straightforward computations involved provide results which are readily comparable.

- 1) Dacey, M.F. (1964): 'Modified Poisson Probability Law for point patterns more regular than random', *Annals of the Association of American Geographers* : 54, 559-65.
- 2) Medvedkov, Y.V. (1967): 'The Regular component in settlement patterns as shown on a map', *Soviet Geography : Review and Translation* : 8, (No.3), 150-159.

The study region is covered with a grid in order to divide it into compact equal-area cells. To achieve a reasonable frequency range the shortest diameter of each cell approximates to the average distance between the towns. Thus the size of the grid is affected by the area and the density of town distribution. In the South African case, as can be seen on the map, a grid based on half a degree is used, giving a total of 84 rectangles, each approximately 1,020 square miles in extent.

The population of places may be ignored when determining the spatial arrangement, and only the number of towns in each rectangle is counted. The actual distribution in the single cell grid is shown in Table I.

TABLE I
Number of Towns in Rectangular Sub-Regions, in Study Area

Single Cell Grid Pattern

0	0	2	2	2	3	0	2	1	2	1	3
2	4	1	2	1	2	2	3	3	1	0	2
3	2	1	0	1	3	2	4	2	1	1	0
0	2	1	1	2	1	2	2	3	1	2	3
0	4	1	0	1	1						
1	1	2	1	1	1						
1	1	2	3	1	1						
0	0	1	1	1	1						
1	1	2	1	1	1						
0	1	0	1	1	2						

Source: 1:1,500,000 Population Distribution Map. (1951).

To facilitate working, the frequency is summarised in Table II.

TABLE II
Summary of Single Cell Frequency Distribution in Study Area

Number of towns per cell	Number of cells
0	13
1	37
2	22
3	9
4	3
≥ 5	0

From this table, the mean number of towns per cell is calculated to be 1.429, and the variance 0.982¹⁾. Before testing the Dacey or Medvedkov hypotheses, it is first necessary to establish whether the towns in the study area are arranged in a purely random manner. The

1) See Gregory, S. (1963): *Statistical Methods and the Geographer*, Longmans, London, p.26.

observed distribution may therefore be compared with the probable Poisson distribution¹⁾. Calculating χ^2 for the Poisson-distribution-expected frequencies²⁾ in relation to the observed frequencies, we obtain 5.76 with two degrees of freedom. The p lies just within the five per cent confidence level. Therefore there is some doubt about the random nature of the observed spatial pattern. In order therefore to obtain a clearer picture a parametric test of the Poisson distribution can be applied³⁾. From this more sensitive test we find that the probability of obtaining the calculated ratio is $p = 0.01$. On this basis the hypothesis of a predominately Poisson distribution can be rejected. Thus it is reasonable to assume that the distribution of towns in the study area is *not* entirely the result of a random process.

We can now proceed to apply the methodology developed by Dacey to the data for our South African study region. Dacey's model produces a bias towards the occurrence of single events in an essentially random process by the construction of an urn model. In geographic terms this can be represented as a map covered by an equal-area grid, as is the case in the South African study area. Towns would then be arranged in each sub-region by the combination of two patterns - the one randomly distributed and the other located by means of a systematic sample. The expected frequency may then be compared with the observed spatial arrangement.

The parameters \hat{p} , \hat{q} , and \hat{q} were estimated from Dacey's formula⁴⁾. After computation of the probability terms from the Poisson distribution the expected frequencies $N \cdot p(x)$ were calculated and compared with the actual distribution. A remarkably high degree of correspondence between the observed and calculated frequencies was found. This is similar to the results achieved by Dacey when applying the formula to the arrangement of places in Iowa⁵⁾ and to the distribution of houses and isolated farms on the Tonami plain in Japan⁶⁾. In all three cases a pattern more regular than random distribution apparently exists.

The excellent fit does not however indicate that the places are evenly dispersed throughout the area. Dacey himself states that 'the study of cell frequencies alone is an inadequate basis for establishing the type of pattern formed ...'⁷⁾. In order to establish whether an agglomerated pattern or an even dispersion actually exists, further tests must be applied. The recursive formula is therefore used to test for independence between adjacent cells. The formula $(x; 2^k)$ is applied to the probability derived for the model $p(x)$ and the expected frequency calculated for the number of two cell blocks in the study area. The results indicate a poor fit with both N-S and E-W blocks unlike the results achieved by Dacey⁸⁾. There is therefore little independence between adjacent cells in the South African test area.

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- 1) Pearson E.S. and H.O. Hartley (1963): ed., *Biometrika Tables for Statisticians*, Vol.1, Cambridge University Press, Cambridge.
 - 2) Gregory, S. (1963): op. cit., pp. 151-9.
 - 3) Keeping, E.S. (1962): *Introduction to Statistical Inference*, Van Nostrand, Princeton, p.254.
 - 4) Dacey, M.F. (1964): op. cit., p.563.
 - 5) Dacey, M.F. (1964): Table 6, p.565.
 - 6) Dacey, M.F. (1964): Table 2, p.562.
 - 7) Dacey, M.F. (1964): p.564.
 - 8) Dacey, M.F. (1964): Table 4, p.563 and Table 6, p.565.

The application of the Dacey model to the study region has some interesting implications. The fact that a high degree of correspondence is achieved, in three different instances, between the observed and expected frequencies seem to indicate that the model is applicable to actual distributions. Dacey arrives at a fairly realistic model by allowing the random element to play a role in the development of the formula, thus accounting for slight deviations from perfect regularity, as would be expected in a natural situation. The results seem to substantiate the hypothesis that the arrangement of towns is essentially the result of a random process, but that occasionally a specific locational pattern occurs. It is difficult though to see precisely what pattern Dacey envisages or what the geographic basis might be for the urn interpretation.

A limitation in the Dacey model lies in its inability to establish precisely the type of pattern that exists. Dacey assumes that the cells are independent, and this is substantiated in the Iowa and Japanese test areas. The results obtained in the South African study area, however, show that a degree of dependence does exist between adjacent cells. Dacey gives no reasons for a lack of independence; neither does he consider the effects of his model. In the South African case the dependence may reflect the clusters in the irrigated areas and in the mining regions (gold, diamonds and coal). Expansion of the observed area and further consideration of the mathematics involved may indicate that an adjusted model could differentiate between the proportions of the settlements arranged in regular, random and agglomerated patterns.

The methodology developed by Medvedkov can be applied to the data for the South African study area. Medvedkov proposes a method for precise determination of the regularity of distributional patterns. In developing the model Medvedkov makes use of the formula of entropy as proposed by C.E. Shannon, viz. $H(X) = -\sum p_i \log_2 p_i$.¹⁾ This gives a measure of uncertainty and the results can be expressed in linear form. In geographic terms it means that the variability of settlement patterns from place to place can be established and direct comparisons made throughout the world.

In Medvedkov's study two techniques of indicating the frequency distribution are used, viz. by places per cell and in nearest neighbour distance classes. In the latter case he suggests that the distances be measured along actual transport routes and weighted for the cost and duration of travel. Medvedkov found this nearest neighbour technique extremely laborious and the results, expressed in areas, not significantly different from those obtained by cell counts. In view of the size of the South African study area and the difficulty in weighting the data it was decided not to use the nearest neighbour technique. The grid method was also chosen in preference to the latter so that comparisons could be made between the results obtained by the Dacey and by the Medvedkov methods.

In order that there be conformity between the method applied in the South African area and that used in the regions studied by Medvedkov, the grid had to be adjusted in such a way as to include at least one place in each cell. The 42 E-W blocks (covering two cells over one degree of latitude and half of longitude) used for the Dacey independence tests were therefore chosen. The values of p_i were calculated and the values of $-p_i \log_2 p_i$ be computed from published tables²⁾, and summed to give the entropy

1) Medvedkov, Y.V. (1957): op. cit., p.153.

2) Reza, F.M. (1961): *An introduction to Information Theory*, McGraw-Hill, York, Table 7, pp. 476-480.

value. Comparison between the calculated $H = 2.36$ for the South African study area and the values Medvedkov derived for five different distribution patterns¹⁾ indicates that there is some similarity with the p or random pattern.

It is necessary to separate the random from the regular components in order to analyse the degree of similarity that exists between various study areas. The dot density corresponding to the calculated H value may be read from a graph which shows the relationship between the entropy of a random pattern and various density levels. (This value may be checked by calculation.) Once the density of the towns distributed in a purely random fashion is known, (in this case it is 1.86) then it is a matter of simple arithmetic to calculate the remainder which show a regular distribution $Q_p = 0.997$. The relative strength of the regular and random components as calculated for the study area is shown by the fact that of the 120 towns in the South African region, 78 are distributed in a random manner and 42 in a regular pattern i.e. a ratio of 13:7.

The results of Medvedkov's analysis as applied in South Africa substantiate the Dacey test, and indicate that although a degree of regularity exists in the study region it is by no means as marked as was the case in certain of the areas he considered. According to Medvedkov²⁾ in Northern Italy 78 towns are distributed in a random manner and 115 are distributed regularly. The random to regular ratio is 91:117 in Northern France and 46:63 for central places in South-Western Wisconsin. It may be noted though that Medvedkov states the value $H = 2.434$ corresponds to a p pattern with dot density 1.85. In terms of the equation and graph the dot density should actually read 2.093. The changed ratio for the Northern Italy study area shows that the regular component does not dominate so strongly, as the proportion becomes 88:105.

For the purposes of the South African study all towns within the study area named in the 1960 census³⁾ were included. No attempt was made to exclude those that did not act as central places for the surrounding rural population. In Medvedkov's study of all places in South-Western Wisconsin, the random factor predominated ($P:R = 132:47$). However when 80 'settlements' were disregarded, so that central places alone could be considered, the regular component was more easily recognised in the new random to regular ratio of 46:53⁴⁾. At the time of writing, in a study of South African towns as service centres the existence of a hierarchy is being determined, and all the towns are being ranked according to functional importance. Those places in the test area that do not carry out central functions may then be disregarded and the entropy test reapplied. It will be interesting to see in due course whether a similar strengthening of the regular element occurs in the South African region.

With regard to the Medvedkov methodology it may be noted that the entropy formula was also applied to the data for the South African study area as covered by the single cell grid. (See Table 2 above.) Thirteen of these cells are empty, yet the resultant ratio between the random and regular elements (17:7) is not substantially different from that obtained by using the frequency in two cell blocks. Medvedkov's limitation that 'the shortest diameter

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- 1) Medvedkov, Y.V. (1957): op. cit., p.155.
 - 2) Medvedkov, Y.V. (1957): Table 3, p.165.
 - 3) Bureau of Statistics, Republic of South Africa (1963): *Population Census, Vol.1, Geographical Distribution of the Population*, Government Printer, Pretoria.
 - 4) Medvedkov, Y.V. (1957): op. cit., p.165.

should not be smaller than the mean distance between the points on the map¹⁾ need not necessarily be applied, as the statistical method allows for such small variations in grid arrangement.

The tests developed by Dacey and Medvedkov can apparently be realistically compared. In the South African region the grid of 84 cells covers an area of approximately 90,000 square miles and involves 120 towns, while the regions studied by Medvedkov varied between 18½ and 445 thousand square miles, containing between 56 and 416 towns covered by grids ranging from 20 to 80 cells. The area studied by Matui in Japan (on which Dacey tested his hypothesis) is approximately 25,000 square miles in extent (divided into 750 cells) which contain a total of 846 farm houses. The statistical methods will of course minimise errors due to differences in size, number of settlements and density of population. The fact that comparable results occur show that the methods used are soundly based, and provide evidence that there is a significant degree of regularity in the arrangement of urban settlement patterns in various parts of the world.

Although Medvedkov's and Dacey's models present similar pictures for the South African study area, the results are expressed in different ways and in different proportions. In the Dacey model the estimator \hat{p} gives a rough indication of the regular component. In this case it is 0.668 which is approximately two-thirds of the distribution. However this is not assumed to be either complete or perfect regularity, as the Poisson element is included. The figure therefore represents the maximum degree of regularity which could be expected to occur in this region. In the Medvedkov model we find that the regular component is more precisely determined at approximately 35 per cent of the distribution. As the model is extremely rigorous in that it demands a perfect geometric pattern, the figure represents the minimum regularity that could exist in the region. It is therefore evident that in the South African study area between 35 per cent and 66 per cent of the towns are distributed in a regular pattern. A geographic factor that may be responsible for the fact that towns in the tested region of the Republic of South Africa are slightly less regularly distributed than might have been expected could be the existence of urban agglomerations in parts of the study area. Losch and Isard²⁾ both point out that the hexagonal form cannot be retained in urbanisation economics, and once agglomeration forces begin to operate the hexagonal form loses much of its significance. Approximately 17 per cent of the towns in the South African region are affected in this way. The recently developed concentrations resulting from the exploitation of mineral resources involves six of the 120 towns; there are a further five older mining towns, as well as nine urban settlements on the irrigation schemes.

A degree of regularity definitely exists but the precise form of the regular patterns is not known. As the hexagon is of great theoretical importance attention should perhaps be paid to testing whether or not the pattern really exists. An attempt therefore was made to distribute the towns throughout the study area in a hexagonal network approximating to that proposed by Christaller. The most realistic method involved the drawing of a lattice with towns distributed 34 miles from their nearest neighbours³⁾. The

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- 1) Medvedkov, Y.V. (1957): op. cit., p.153.
 - 2) Haggett, P. (1965): *Location Analysis in Human Geography*, Methuen, London, p.53.
 - 3) Berry, B.J.L. (1967): *Geography of Market Centres and Retail Distribution*, Prentice-Hall, Englewood Cliffs.

network was centred on the chief city, Bloemfontein, and based on the main rail and road way running SSW to NNE from the Cape to the Reef through the study area. (See Diagram 1 above.) A total of 118 towns could be included in this way - a numerical distribution which correlates highly with the actual number of towns in the region.

A summary of the cell frequency shows marked disparities between the theoretical arrangement and the observed pattern. This is substantiated by a goodness of fit test which gives results outside the five per cent confidence level. As the hypothetical arrangement is perfectly regular the Dacey test, which assumes a degree of randomness, could not be carried out. On application of the Medvedkov model however, it is interesting to note that the calculated $H = 1.2$ gives a random to regular ratio of 10:108. This serves to indicate that the requirements of Medvedkov's model may be too stringent in that no allowance is made for a regular distribution that is not parallel to the grid. It remains for someone to construct models that will fit Christaller's hypothetical arrangement, as adjusted for transport and administrative networks, and then use them to measure the degree to which the ideal is achieved.

It would appear that regular urban settlement patterns do exist in part of the Republic of South Africa. These patterns can be recognised in a variety of ways, but perhaps the most useful and easily computed tests are those discussed in this paper. Both methods are informative, though it seems that the Dacey model may overstress the random element while the Medvedkov model is perhaps too rigid in its demands.

In both cases it is felt that the models need to be reconsidered with regard to their precise applicability to actual regions, for it may appear that they are not geographically realistic. The models show an improvement of the nearest neighbour method used by Dacey 1960¹⁾ and King 1961²⁾ to establish the spatial arrangement of towns. Standard distances should not however be ignored as they provide a complementary tool for the analysis of town distribution patterns on maps.

The use of mathematical models is essential if we are to eliminate the subjective approach in determining the type of pattern that exists. Extension of the study areas to cover different parts of particular countries as well as various countries may help in pinpointing the types of patterns that exist, as well as suggesting possible causes for their development. Once patterns can be distinguished and regularities predicted from a theory, then some scientific understanding of the geography of urban function and distribution can be achieved.

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- 1) Dacey, M.F. (1960): 'The spacing of River Towns', *Annals of the Association of American Geographers*, 50, pp. 59-61.
 - 2) King, L.J. (1961): 'A Multivariate analysis of the spacing of urban settlements in the United States', *Annals of the Association of American Geographers*, 51, pp. 222-233.

RESULTANTS OF URBANISATION IN SOUTH AFRICA:

A Nodal-Region Spatial Analysis of Urban
Demographic Structure

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The economic, demographic, social and physical resultants of urbanisation range widely in type, character and degrees of complexity. Among the most readily observed resultants of the urbanisation process is the evolution of systems of cities at a regional, national or world scale. Such systems are characterised by the development of a relatively few large cities, a greater number of medium-sized towns, and many small places. The form of the urban continuum is most clearly expressed in the rank-size relationship within a city system. This relationship throws light upon the nature of the urbanisation process to which this system has been subjected. The structure which the continuum assumes is in turn likely to influence the spatial organisation of social and economic phenomena within the territorial limits of the city system.

The objective of this paper is to identify the nature of city rank-size relationships in South Africa and more specifically to examine the spatial patterns of a selected range of demographic variables in the urban population of the country. Particular attention will be paid to the influences which the form of the urban continuum exercises over the distributions of the variables.

The range of social and economic phenomena which could be selected for spatial analysis is very wide, and it has been necessary to be selective in the choice of variables. Because of the importance attached to the age and sex structure in social and economic development, these variables have been isolated for specific attention. They are particularly useful in the identification of patterns of demographic potential, and are closely related to levels of economic development and opportunity. The analysis has been confined to the White urban population of South Africa. It is realised that the study of demographic differentials within a single race group which forms part of a multi-racial society may give rise to partial and possibly distorted conclusions about processes which have influenced the structure of that race group. More detailed analyses taking into account the effects of other race groups upon the demography of the White population will be necessary before complete hypotheses can be erected. Such work must, however, await further research.

The Rank-size Relationships of the South African Urban Continuum:

Empirical observation has shown that the relationship between cities of different sizes in an urban continuum is best expressed in the *rank-size rule*¹⁾. This is $R.(P_n)^q = P_1$ where:

P_1 = The population of the largest city.

P_n = Population of the nth city in a series 1, 2, 3, ...n.

R = The rank of the nth city.

q = A constant.

1) First stated by Auerbach in 1913, and restated by Zipf in 1941. See Auerbach, F. (1913): 'Das Gesetz der Bevolkerungs Konzentration': *Petermanns, Mitt.*: Vol. 59. Also see Zipf, G.K. (1941): *National Unity and Disunity*, University of Indiana, Bloomington.

When values of P_n are plotted on a logarithmic scale against values of R , the relationship is a straight line in a system of cities which obeys the rank-size rule¹).

The rank-size relationship of cities in South Africa is plotted in Figure 1 for all urban places listed in the 1960 census, and, for comparative purposes, for towns above 2,000 persons in 1921.

While several significant features of the form of the size hierarchy are revealed by the curves, it is necessary for the analyses presented here to focus only upon the distribution of the larger urban places. The size hierarchy possessed no places with populations of between 56,000 and 71,000 persons in 1960. Above this level, the size of cities in South Africa tends to be larger than expected. Only one city (Bloemfontein) was smaller than expected. In other words, the larger cities have grown at the expense of the smaller urban places, and there tends to be a relative accumulation of population in larger cities. The hierarchy of towns possesses a significant degree of primacy.

By plotting on log-normal probability paper, the cumulative percentage distribution of cities by size groups between 200 persons and the population of the largest city, the form of the size relationship may be further assessed. Figure 2 shows this step. If the city size distribution is rank-size or log-normal it will assume a straight line.

The South African continuum approaches log-normality but falls more properly within the category described by Berry as an intermediate distribution, nearest rank-size between the limiting cases of primacy and log-normality²).

The curve shown in Figure 2 suggests three characteristics of the South African continuum:

- (i) A log-normal distribution of smaller cities (i.e. below 10,000 persons in size);
- (ii) A measure of deficiency in the number of cities between 10,000 and 500,000 persons. Only 74 cities out of the total of 654 places with more than 200 persons fall within this considerable size range;
- (iii) The steepening of the curve above the 500,000 population level suggests a degree of primacy within the hierarchy.

1) The cumulative size distribution tends to take the form of the Pareto curve in the form $y = AX^{-a}$,

where X = the number of inhabitants,

y = the number of cities of size X or larger, and

A and a are parameters estimated from the data;

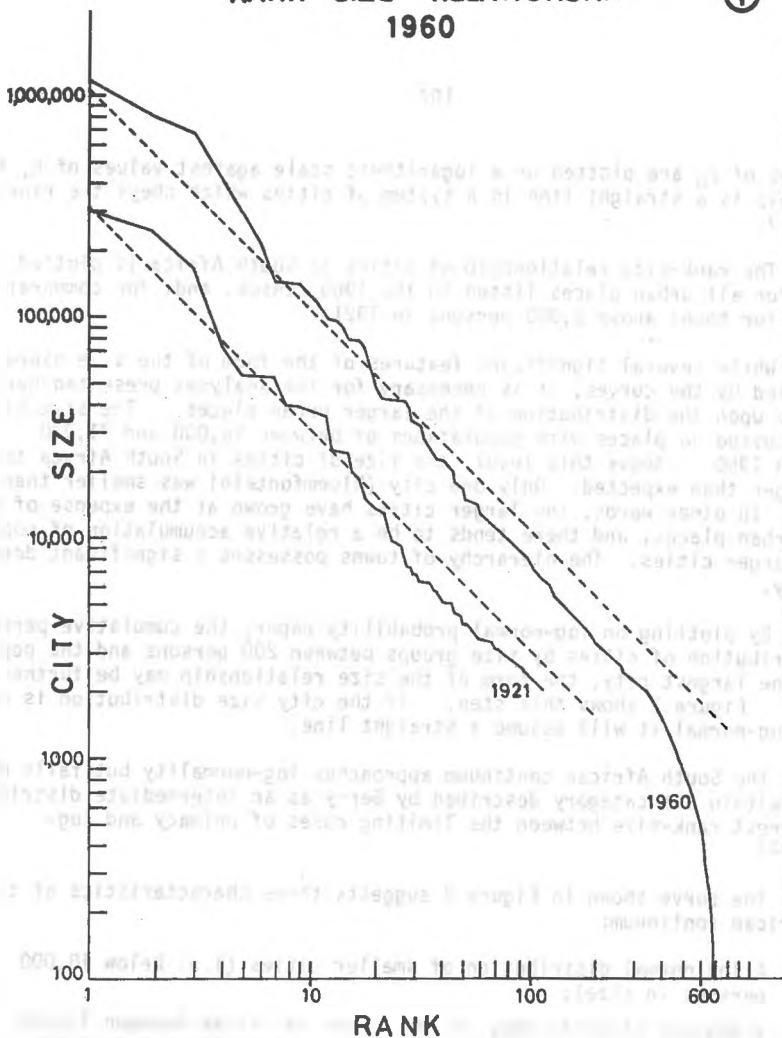
when a is unity the formula reduces to the simple rank-size rule - i.e.

$yx = A$ where A is the population of the largest city.

2) Berry, B.J.L. (1964): 'City Size Distribution and Economic Development': In *Regional Development and Planning*, edited by J. Friedmann and W. Alonso, Cambridge (Mass.) M.I.T. Press, p. 149.

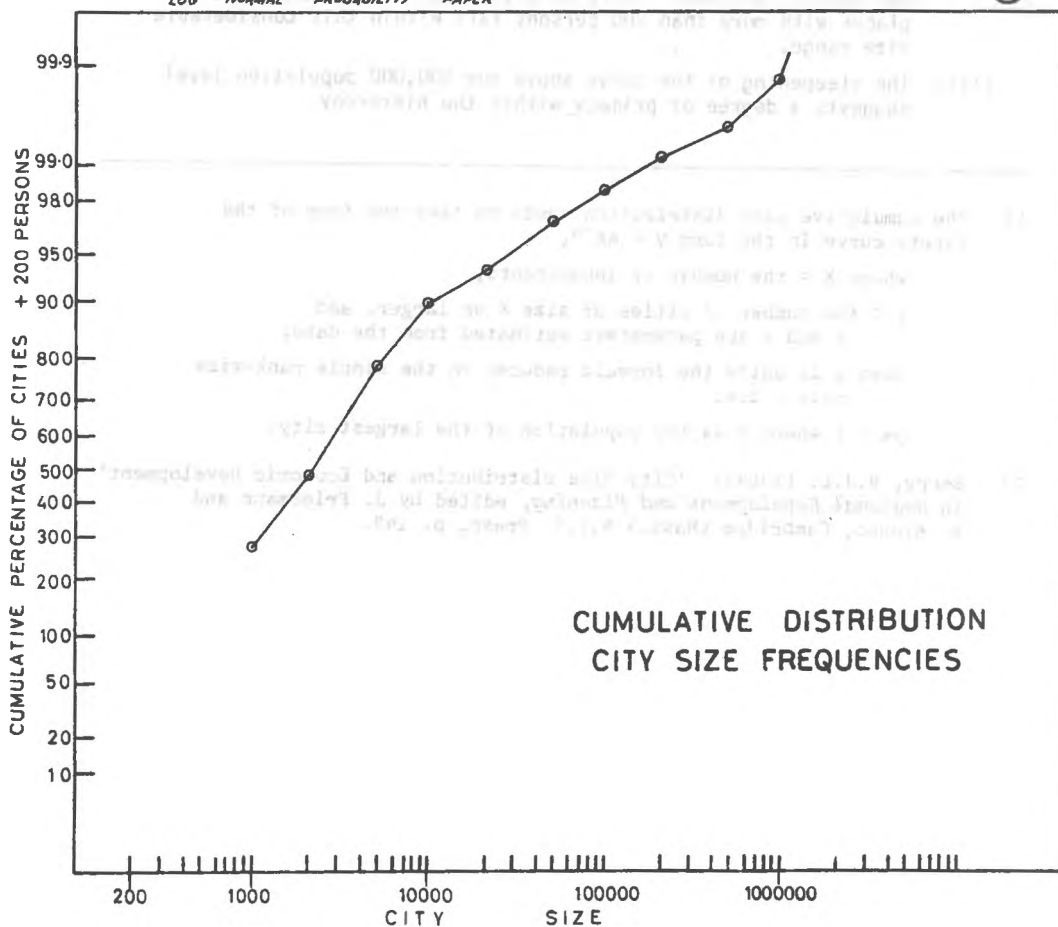
RANK - SIZE RELATIONSHIP 1960

①



LOG - NORMAL PROBABILITY PAPER

②



A primacy index calculated for the South African urban continuum has a value of 37.62 per cent, and is considerably below the world mean of 55 per cent¹⁾. If the Witwatersrand as a whole is taken as the largest city, then the index rises to 53.29 per cent, but is still below the world mean.

South Africa ranks with Italy (32.1 per cent), Poland (39.7 per cent), Canada (40.1 per cent), Spain (40.2 per cent), and Australia (42 per cent) in terms of its level of national primacy.

Like Australia and Canada, South African primacy is not expressed in the overall dominance of a single very large city. It is expressed rather in the development of regional primate cities which, though varying in size and importance, are duplicative rather than complementary. The pattern is representative of most urbanised industrial countries. The regional primates are Johannesburg, Cape Town, Durban, Pretoria, Port Elizabeth, East London, Bloemfontein and Kimberley. There are grounds to postulate, however, that Johannesburg with the Witwatersrand or indeed the Southern Transvaal (incorporating the Pretoria-Witwatersrand-Vereeniging complex), with its concentration of financial, commercial and industrial headquarters, increasingly performs the functions of a national primate city.

The most significant resultant of the growth of a system of regional primate cities is the tendency for economic and social development patterns to be polarized and identified within a nodal region framework defined by the spheres of influence of the regional primate cities. Polarization of the development pattern is a result of the organisational and integrative forces exerted by the regional primate cities over their hinterlands, and gives rise to the evolution of metropolitan economies, or metropolitan communities, as described by Gras²⁾ and by Bogue³⁾ for Europe and the United States. The polarized model does not exclude an 'open system' of overlapping areas of nodal influence transcending nodal region boundaries, as advanced by Duncan⁴⁾. This latter 'open system' may be employed in the analysis of development patterns at all levels of an urban hierarchy. Furthermore, since polarized nodal regions represent organisational and integrative systems, in contrast to single-factor uniform or homogeneous regions, they are particularly useful in the study of levels of regional development, and in the identification of regional development problems.

1) The primacy index is calculated by the simple formula:

$$\frac{P_1}{P_4} \times 100;$$

Where P_1 is the population of the largest city, and P_4 is the population of the four largest cities.

See Ginsberg, N. (1961): *Atlas of Economic Development*: University of Chicago, Chicago, p. 36.

The mean is calculated from data drawn from the publication: *The World's Metropolitan Areas*: International Urban Research, Institute of International Studies, University of California Press, Los Angeles.

- 2) Gras, N.S.B. (1922): 'The Development of Metropolitan Economy in Europe and America': *American Historical Review*: 27, 695-708.
- 3) Bogue, D.J. (1950): *The Structure of the Metropolitan Community*: Michigan Press, Ann Arbor.
- 4) Duncan, C.D. and W.R. Scott, B.D. Lieberman and H. Winsborough (1960): *Metropolis and Region*: John Hopkins Press, Baltimore.

The South African nodal region framework defined on the basis of telephone flow data is mapped in Figure 3 at the level of the regional primate cities. Its structure will be measured in the analyses which follow, where economic and demographic variables have been employed as indices of the development pattern.

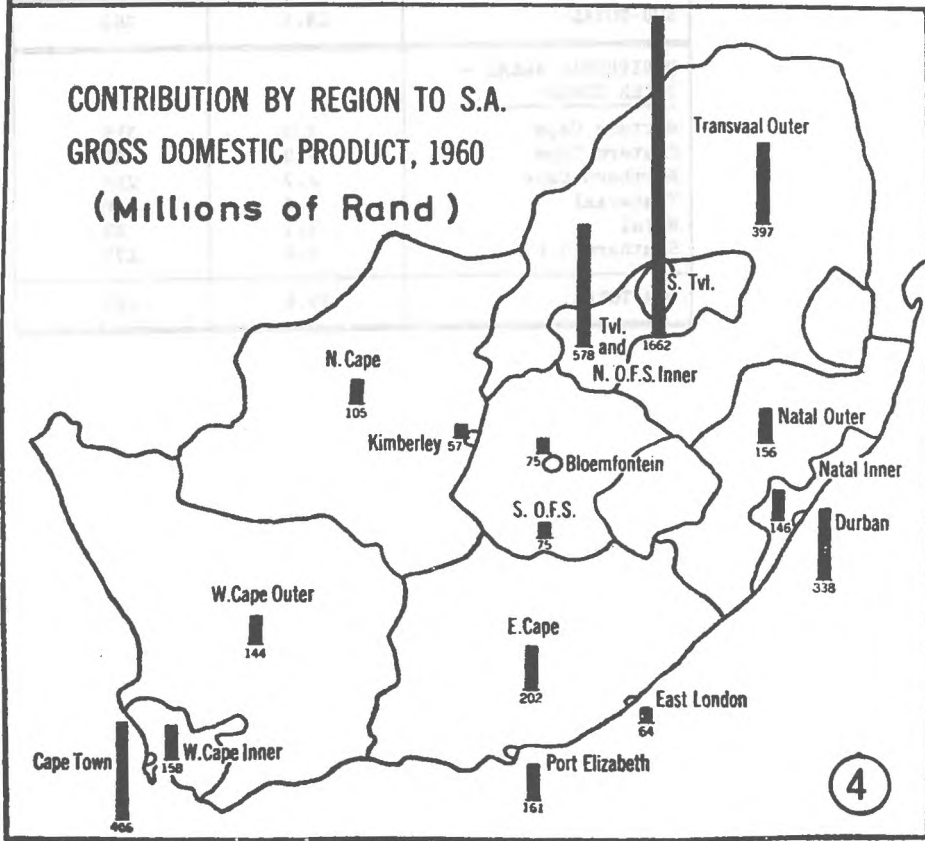
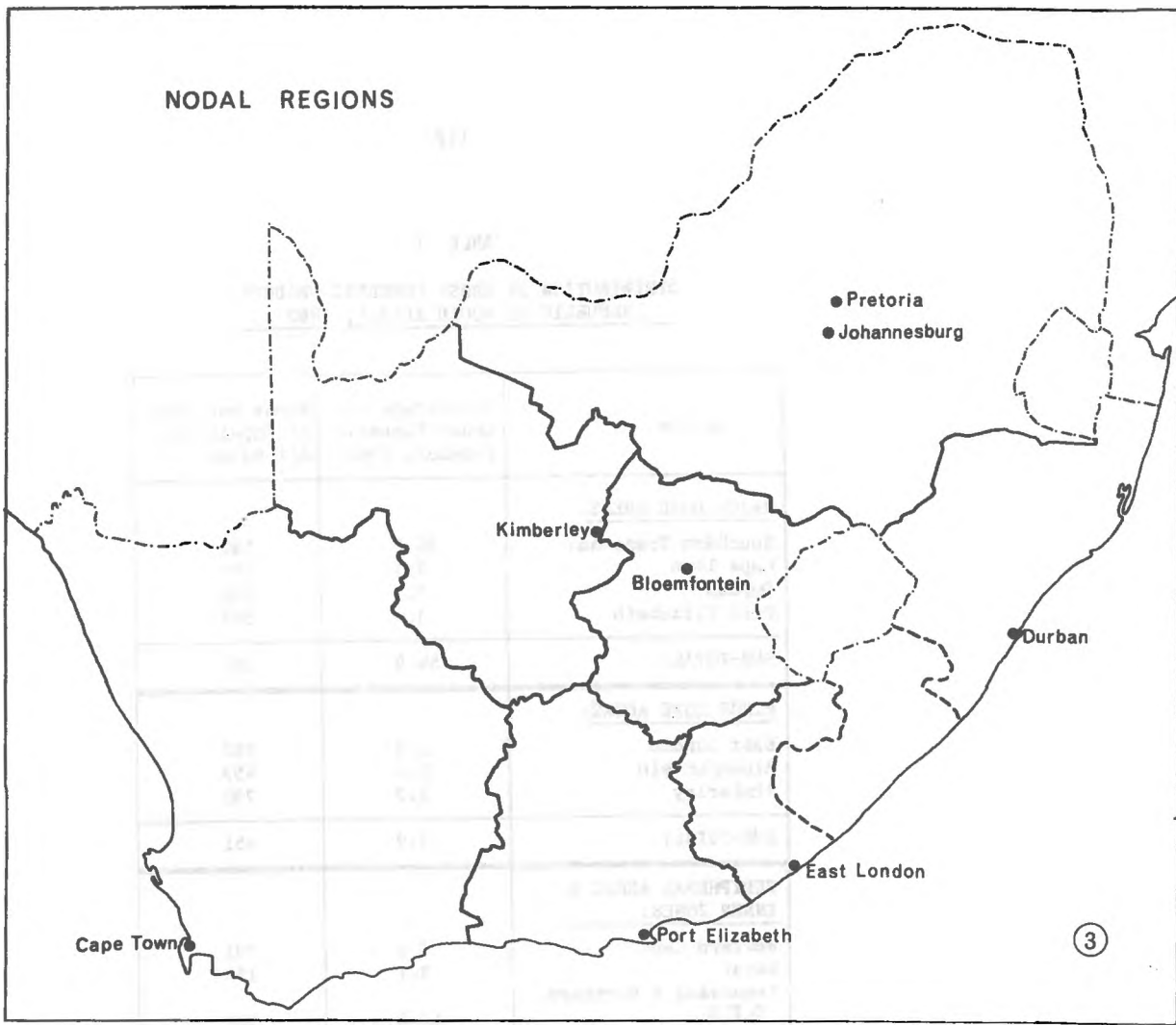
Spatial Variations in Economic Development:

The nodal orientation of the South African economy has been demonstrated by Fair in a preliminary economic spatial analysis¹⁾. The analysis is of considerable significance as a background against which the patterns of the demographic variables selected for study here may be viewed, and to which they are related²⁾.

The economic analysis showed the existence of a series of core areas of high economic activity, focussed on the regional primate cities, and surrounded by roughly concentric zones of decreasing intensity towards the peripheries of the nodal regions. See Figure 4 in this regard. The distribution may be identified with the structure of the metropolitan community. The analysis, furthermore, has established the relative economic strength of the nodal regions, which provides a basis of comparison of economic and demographic distributions. Details are given in Table I.

The economic dominance of P-W-V nodal region (Pretoria-Witwatersrand-Vereeniging complex) which contributed 55 per cent of the gross domestic product in 1960, contrasts sharply with the contributions made by other nodal regions. The contrast furthermore is evident between the primate cities and the concentric zones which surround them. The Cape Town and Durban nodal regions follow in order of economic significance, with 16 per cent and 13 per cent of the gross domestic product respectively. The contributions of the nodal regions focussed upon Bloemfontein and East London, in particular, reveal low levels of economic development and suggest relative economic backwardness.

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- 1) See Fair, T.J.D. (1965): 'The Core-periphery Concept and Population Growth in South Africa, 1911 - 1960': *South African Geographical Journal*: 47, 59-71.
 - 2) The boundaries of the nodal regional division of South Africa used by Fair do not correspond exactly with those suggested in this study. The degree of correspondence, however, is sufficient for meaningful conclusions to be drawn. Furthermore, the primate nodes of Johannesburg and Pretoria are expressed as a single unit comprising the Pretoria-Witwatersrand-Vereeniging complex. While these nodes have been separately treated in the rank-size analysis earlier in this paper, it is convenient for comparative purposes to relate the demographic spatial analysis to a single Transvaal-Northern Orange Free State nodal region, focussed upon the Pretoria-Witwatersrand-Vereeniging complex as a single regional primate node.



FROM: FAIR T.J.D. S.A. GEOGR. J. DEC., 1965.

TABLE I
 DISTRIBUTION OF GROSS DOMESTIC PRODUCT,
 REPUBLIC OF SOUTH AFRICA, 1960

REGION	Percentage of Gross Domestic Product, 1960	Rands per Head of Population: All Races
<u>MAJOR CORE AREAS:</u>		
Southern Transvaal	34.7	582
Cape Town	9.7	577
Durban	7.1	496
Port Elizabeth	3.4	555
SUB-TOTAL:	54.9	567
<u>MINOR CORE AREAS:</u>		
East London	1.3	552
Bloemfontein	1.4	453
Kimberley	1.2	730
SUB-TOTAL:	3.9	551
<u>PERIPHERAL AREAS & INNER ZONES:</u>		
Western Cape	3.3	381
Natal	3.1	155
Transvaal & Northern O.F.S.	12.1	537
SUB-TOTAL:	18.5	363
<u>PERIPHERAL AREAS - OUTER ZONES:</u>		
Western Cape	3.0	315
Eastern Cape	4.2	93
Northern Cape	2.2	210
Transvaal	8.3	126
Natal	3.3	83
Southern O.F.S.	1.6	175
SUB-TOTAL:	22.6	125

Spatial Analysis of the Age-Sex Structure of the White Urban Population of South Africa:

The age-sex structure of a population summarises the demographic history of the population at any point in time, and forms a biological structure upon which functional organisation is built¹). Thomlinson suggests that there is hardly a phase of social, economic and political life that escapes the influence of the age-sex structure of the population²).

The analysis will examine spatial differences in sex ratio, the distribution of the young working age groups (15 - 19 and 20 - 39 years), and a classification of the population on a progressive-regressive age structure scale suggested by Sundbärg³).

Sex Ratio Patterns:

The sex ratio of the White urban population of South Africa as a whole was 0.9765 in 1960. This may be expressed as a masculinity rate of 97.65. Considerable variation occurs from this mean value, area by area, ranging from 71 to more than 120 for all age groups, and varying over a wider range for individual age groups.

The analysis of the spatial distribution of the sex ratio is facilitated by the use of a three-tier scale using the mean, more than 5 per cent above, and less than 5 per cent below the mean, as class intervals for the data. The White urban sex ratio distribution for all age groups is shown in Figure 5a. From the figure it will be seen that districts containing primate cities have sex ratios at the mean level, or below it. This is expected.

The heavily urbanised mining districts on the outer rim of the Witwatersrand have high ratios. Thus a high sex ratio is apparent in the P-W-V complex. This is also the case in the Durban, Kimberley and Cape Town nodal regions. The pattern reflects areas of economic opportunity attractive to males. Industrialised districts close to the primate cities of Cape Town and Port Elizabeth also have high sex ratios.

Districts with low sex ratios occur in all nodal regions, but are particularly characteristic of the southern Cape sector of the Cape Town nodal region; in peripheral zones of the Port Elizabeth and East London and Bloemfontein regions; and in a sector covering the north-eastern Free State in the P-W-V nodal region.

The sex ratio distributions, while indicative of spatial demographic variations, produce an over-generalised picture, and require qualification by age groups.


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- 1) Hawley, A. H. (1950): *Human Ecology*: Ronald Press Co., New York; p. 128.
 - 2) Thomlinson, R. (1965): *Population Dynamics: Causes and Consequences of World Demographic Change*: Random House, New York.
 - 3) Sundbärg, A.G. (1907): *Bevölkerungstatistik Schwedens 1750-1900*: pp. 4-8; Also Sundbärg (1900): 'Sur La Répartition de La Population par Age et sur les Taux de Mortalité': *Bulletin de l'Internationale de Statistique*, (Norway): 12, 89-94.

WHITE URBAN POPULATION
SEX RATIO
ALL AGES

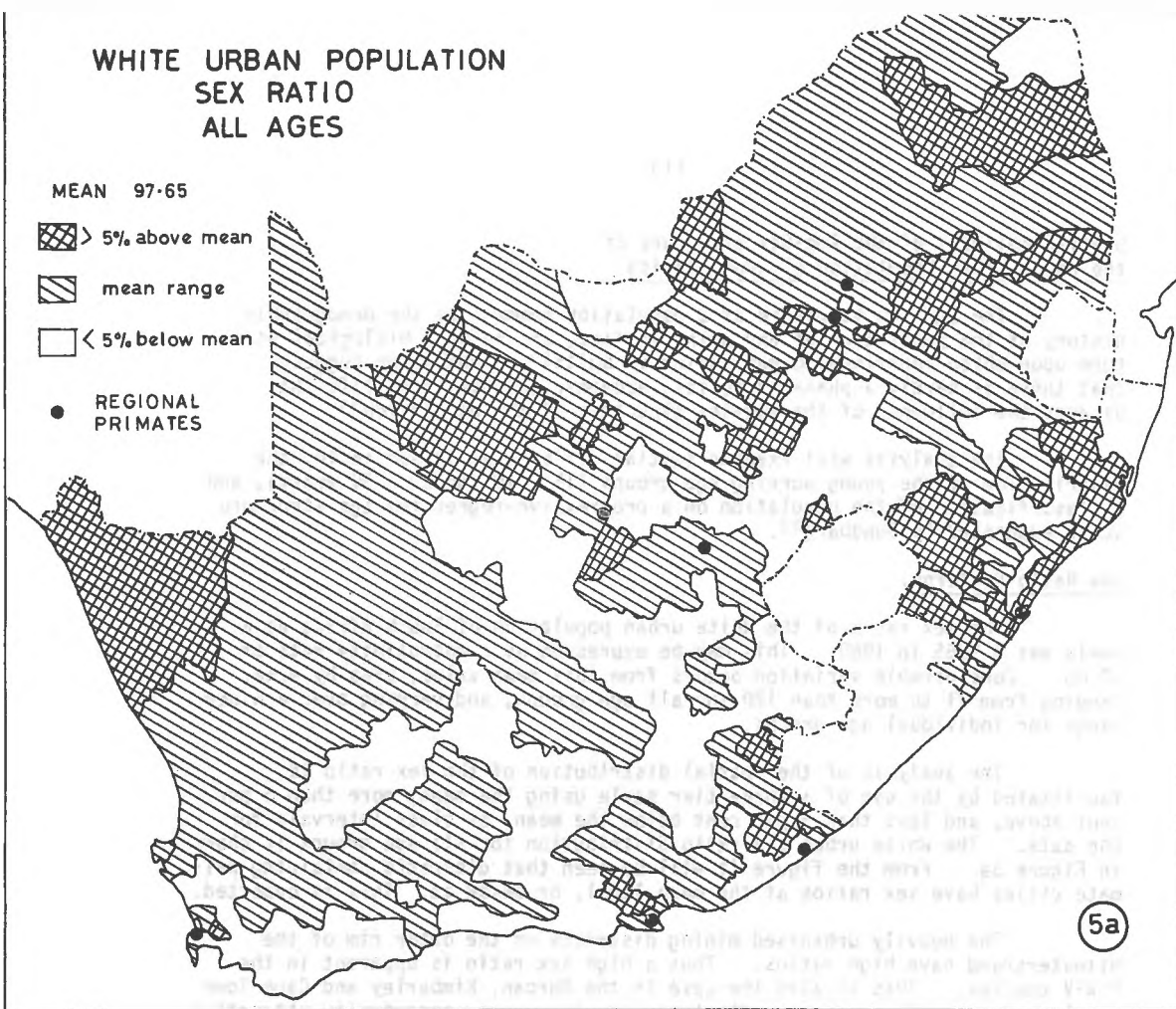
MEAN 97.65

 > 5% above mean

 mean range


 < 5% below mean

 REGIONAL
PRIMATES




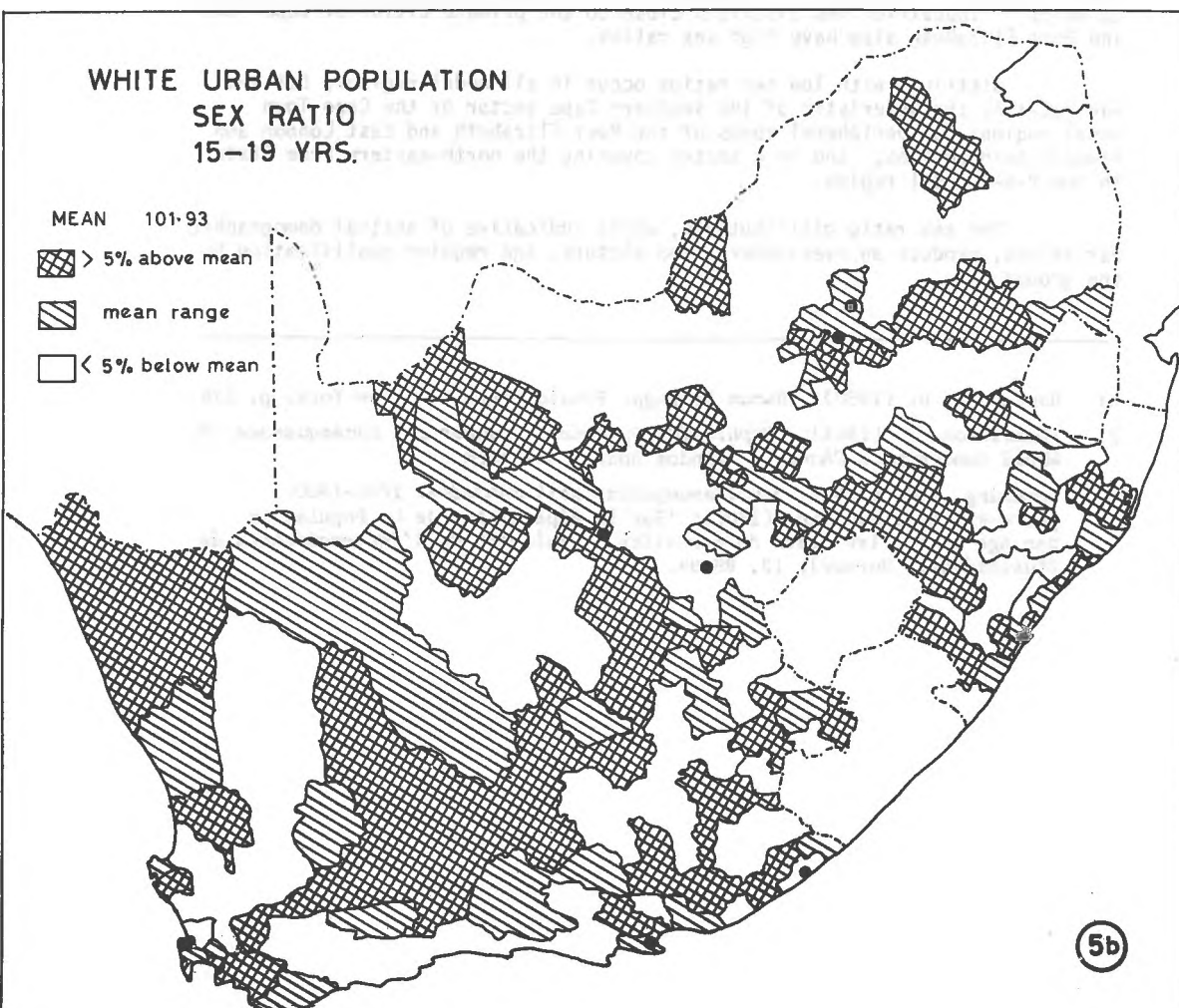
WHITE URBAN POPULATION
SEX RATIO
15-19 YRS.

MEAN 101.93

 > 5% above mean

 mean range

 < 5% below mean



The distributions of sex ratios in the young working age group of 15 - 19 years and 20 - 39 years, are of particular interest. The population in these age groups is probably the most mobile and most sensitive to economic forces. The sex ratio patterns are as a result strongly regional or zonal in distribution:

In the 15 - 19 age group, sex ratio distributions may be reduced to two or three spatial variants. From Figure 5b these are:-

- (a) A pattern of roughly concentric zones, distorted by directional influences surrounding the primate cities of Cape Town, Port Elizabeth, East London and Bloemfontein.

The cities have mean or low sex ratios. In the nodal regions, an outward gradation occurs through an inner zone of mean and high ratios, an intermediate zone of low sex ratios, and an outer zone of mean and high sex ratios. The distribution can only partially be explained by the occurrence of specific forms of economic activity in urban areas in the different zones, and is probably related to patterns of differential migration by sex within the age group.

The inner zones of high sex ratio may be subject to either an inflow of males to more intensively developed economies, and/or to an outflow of females to the neighbouring cities. It is difficult to account for the patterns of the intermediate and outer zones, except to suggest that females in the age groups appear to migrate over greater distances from the hinterland towards the cities. It is unlikely that intervening opportunities in the intermediate zone will attract a higher female population.

- (b) A sectoral pattern of high sex ratios is characteristic of the Durban, P-W-V, and Kimberley nodal regions. These sectors are flanked by sectors of low sex ratio. Levels of economic activity and opportunity appear to be the underlying influence, with an early migration of males from the less favoured sectors to urban places in the sectors of greater opportunity. The attractive sectors are the eastern Transvaal railway sector, the south-western Transvaal and Orange Free State goldfields sector, the Natal main line and North Coast sectors, and the railway sector linking Kimberley to the mining areas of the northern Cape.

While a relatively high proportion of the districts in all nodal regions have populations with a low sex ratio in the 15 - 19 age group, the P-W-V and East London regions have more than 50 per cent of their districts in this category. See Table II for details. The distributions suggest a relatively high rate of migration of males to economically more attractive parts of the nodal regions.

Sex ratio distributions in the 20 - 39 year old age group differ from those in the 15 - 19 year old group, and possibly reveal more clearly relationships between demographic and economic variables. In this age group, sex ratios in the primate cities are above average or within the mean range. The proportion of districts with above average sex ratios in the P-W-V and Durban nodal regions is particularly striking, and suggests strong migratory movements of males towards urban areas in these regions. See Table III. The nodal regions of the coastal cities of the Cape Province and the Bloemfontein region have a higher proportion of districts with below average sex ratios, suggesting that the migration of males towards the north and east of the country has major origins in these nodal regions.

TABLE II

CLASSIFICATION OF THE POPULATION IN THE
NODAL REGIONS OF THE REGIONAL PRIMATE CITIES:
WHITE URBAN POPULATION BY MAGISTERIAL DISTRICTS,
GIVING THE DISTRIBUTION OF SEX-RATIOS FOR THE
15-19 YEAR OLD AGE GROUP, SOUTH AFRICA, 1960.

NODAL REGIONS	PERCENTAGE DISTRIBUTION OF DISTRICTS			
	SEX-RATIOS FOR 15-19 YEAR OLDS			TOTAL
	$\bar{X}-(75\%)$	$\bar{X} \pm 5\%$	$\bar{X}+(75\%)$	
Cape Town	41.03	25.64	33.33	100.00
Port Elizabeth	43.48	26.09	30.43	100.00
East London	52.38	9.52	38.10	100.00
Bloemfontein	42.86	25.71	31.43	100.00
Kimberley	47.06	17.65	35.29	100.00
P-W-V	50.72	21.74	27.54	100.00
Durban	45.95	16.22	37.84	100.00

NOTE: The Transkei has been excluded from the analysis.

TABLE III

CLASSIFICATION OF THE POPULATION IN THE
NODAL REGIONS OF THE REGIONAL PRIMATE CITIES:
WHITE URBAN POPULATION BY MAGISTERIAL DISTRICTS,
GIVING THE DISTRIBUTION OF SEX-RATIOS FOR THE
20-39 YEAR OLD AGE GROUP, SOUTH AFRICA, 1960.

NODAL REGIONS	PERCENTAGE DISTRIBUTION OF DISTRICTS			
	SEX-RATIOS FOR 20-39 YEAR OLDS			TOTAL
	$\bar{X}-(75\%)$	$\bar{X} \pm 5\%$	$\bar{X}+(75\%)$	
Cape Town	61.54	25.64	12.82	100.00
Port Elizabeth	56.52	30.43	13.04	100.00
East London	52.38	38.10	9.52	100.00
Bloemfontein	60.00	28.57	11.43	100.00
Kimberley	29.41	58.82	11.76	100.00
P-W-V	17.39	39.13	43.48	100.00
Durban	21.62	21.62	56.76	100.00

NOTE: The Transkei has been excluded from the analysis.

Within each of the nodal regions, the distribution of sex-ratio patterns is strongly sectoral, and is associated in particular with inter-metropolitan belts of communication and areas of economic opportunity. Figure 5c should be consulted.

The relatively high percentage of districts with high sex ratios in the P-W-V and Durban nodal regions suggest a strong economic influence over demographic patterns, and is indicative of relatively low urban employment opportunities, particularly of young males, in the nodal regions of the Cape Province and southern Orange Free State.

The differences in demographic structure between the nodal regions of the Cape and southern Orange Free State on the one hand, and the P-W-V and Durban nodal regions on the other, is emphasised by the distribution of the White urban population aged 65 years and over. Figure 5d and Table IV provide details. In the P-W-V and Durban nodal regions, 81 and 62 per cent respectively of the districts have below average proportion of the population above 65 years. Out of the remaining nodal regions, only Kimberley is remotely comparable to this position. These patterns are probably of considerable significance in assessing the need for development planning in the less favoured nodal regions, and in particular in the regions of East London and Bloemfontein.

TABLE IV




CLASSIFICATION OF THE POPULATION IN THE
NODAL REGIONS OF THE REGIONAL PRIMATE CITIES:
WHITE URBAN POPULATION BY MAGISTERIAL DISTRICTS,
GIVING THE DISTRIBUTION OF THE PERCENTAGE
AGED 65 YEARS AND OVER, SOUTH AFRICA, 1960

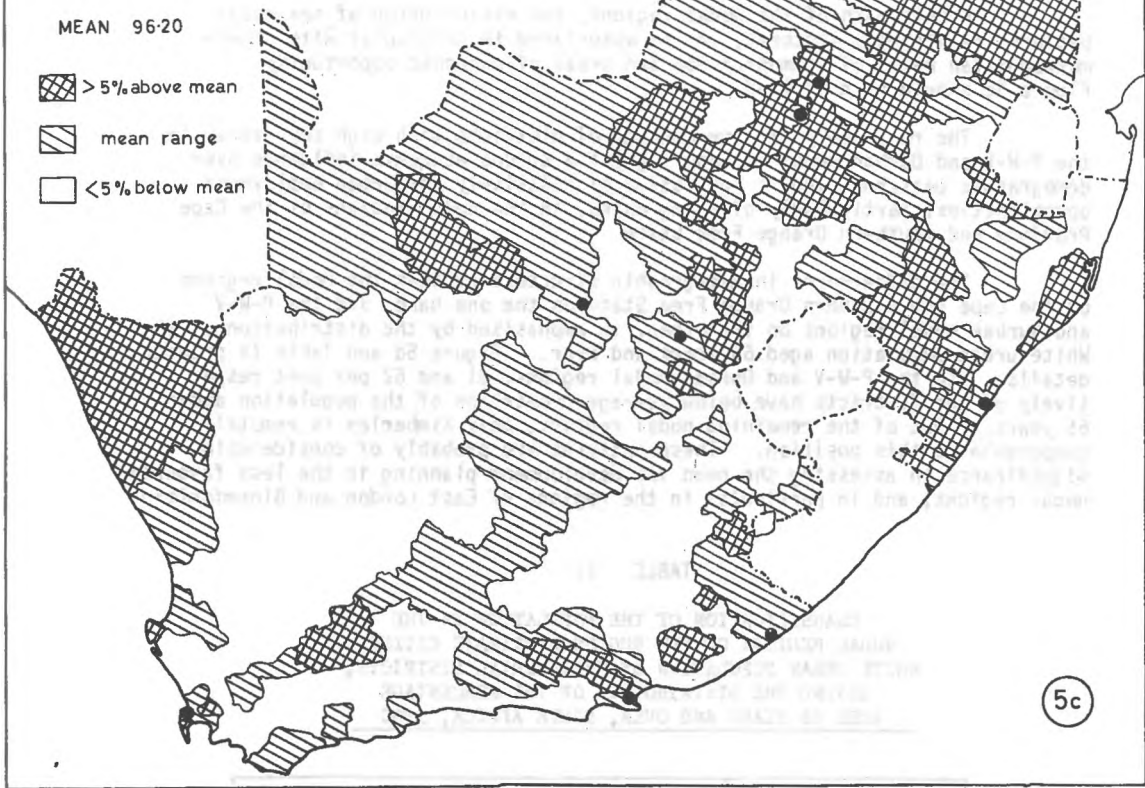
NODAL REGIONS	PERCENTAGE DISTRIBUTION OF DISTRICTS			
	% OF WHITES AGED 65+ YEARS			TOTAL
	$\bar{X}(-1\%)$	$\bar{X} \pm 1\%$	$\bar{X}(+1\%)$	
Cape Town	25.64	23.08	51.28	100.00
Port Elizabeth	13.04	30.43	56.52	100.00
East London	0.00	28.57	71.43	100.00
Bloemfontein	8.57	20.00	71.43	100.00
Kimberley	47.06	23.53	29.41	100.00
P-W-V	81.16	13.04	5.80	100.00
Durban	62.16	16.22	21.62	100.00

NOTE: The Transkei has been excluded from the analysis.




WHITE URBAN POPULATION
SEX RATIO
20-39 YRS.

MEAN 96.20

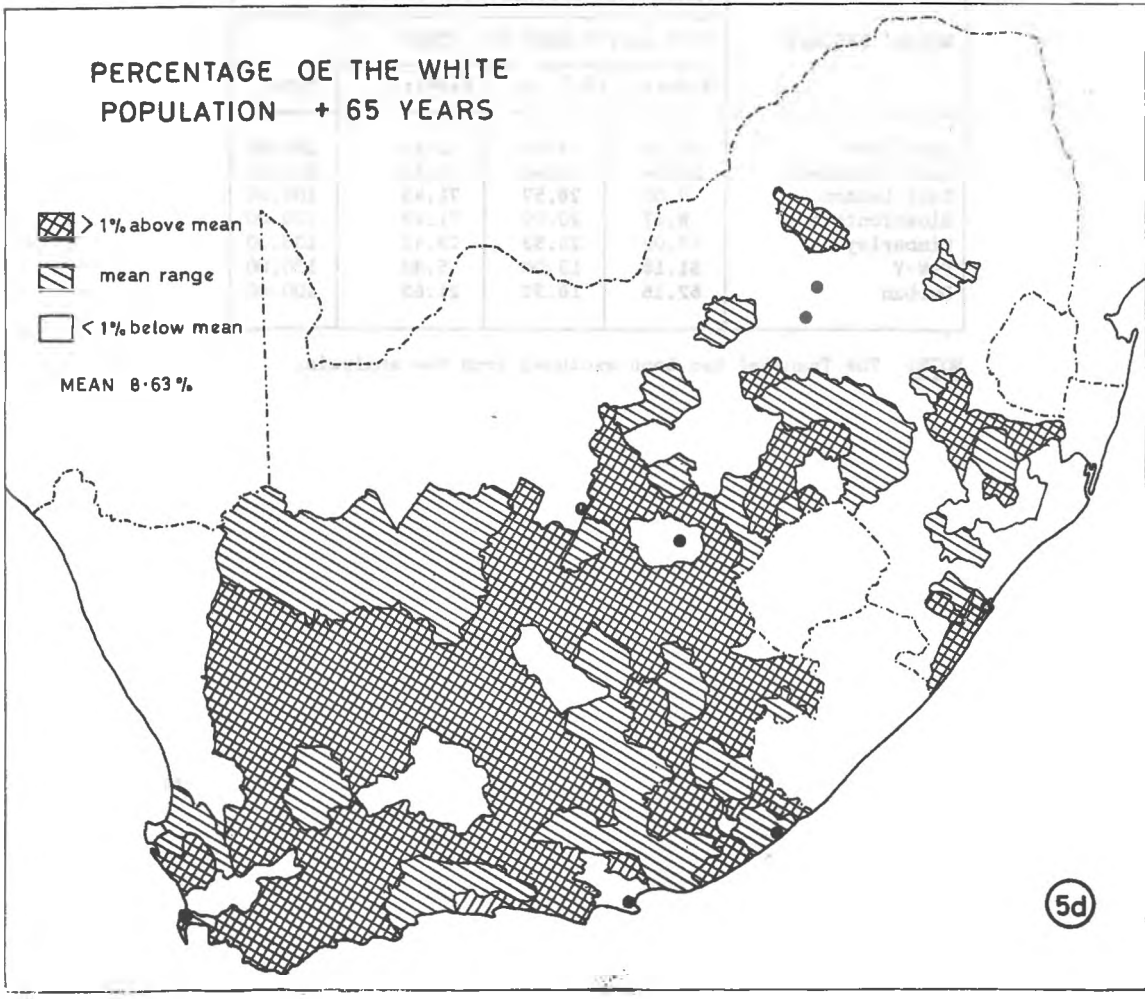
-  > 5% above mean
-  mean range
-  < 5% below mean



PERCENTAGE OF THE WHITE
POPULATION + 65 YEARS

-  > 1% above mean
-  mean range
-  < 1% below mean

MEAN 8.63%



Analysis of the Urban White Population on a
Progressive-regressive Demographic Scale:

Sundbärg¹⁾, early in the twentieth century, observed certain empirical relationships between age structure and the rate of population growth. He identified three types of population:

- (a) Progressive, having a high proportion of children and a high rate of growth;
- (b) Stationary, having moderate proportions of children and aged persons, with slow growth or stationary numbers; and
- (c) Regressive, having a high proportion of aged persons and declining numbers.

Sundbärg established the following modal proportions of the various age groups in his three types of populations:

TABLE V

SUNDBÄRG'S POPULATION TYPES

TYPE OF POPULATION	PER CENT OF POPULATION		
	Under 15 Years	15 - 49 Years	50 Years and Over
Progressive	40	50	10
Stationary	26.5	50.5	23
Regressive	20	15	30

The progressive-regressive scale, though admittedly a crude measure, nevertheless provides a convenient means whereby the nature and potential growth of the population may be quickly determined and summarised. In the application of the scale it is necessary to devise ranges within the limits set by the modal proportions. Using mid-points between the modal limits, it is possible to identify fourteen transitional types of population situated between the three basic categories of progressive, stationary and regressive. To avoid tedious description of the fourteen individual population categories, they may be grouped into six population types as follows:

<u>Scale</u>	<u>Category</u>
1	Progressive populations
2	Near progressive populations
3	Stationary populations
4	Sub-stationary populations
5	Stationary populations with definitely regressive tendencies
6	Regressive populations.

1) Op. cit.

TABLE VI

DISTRIBUTION OF THE WHITE URBAN POPULATION
OF SOUTH AFRICA, BY MAGISTERIAL DISTRICT,
ON THE PROGRESSIVE - REGRESSIVE SCALE, 1960

Progressive- regressive Scale	No. of Magisterial Districts	%	Cumulated %
1	72	27.27	27.27
2	25	9.47	36.74
3	50	18.94	55.68
4	42	15.91	71.59
5	16	6.06	77.65
6	59	22.35	100.00
TOTAL	264	100.00	-

The South African White population as a whole may be classified as stationary - an attribute of considerable importance for the future growth potential of the population.

The percentage distribution of the White urban population in various categories of this scale, by magisterial district, is shown in Table VI above.

The distribution takes the form of a curve with a peak in the stationary and near-stationary categories, falling in opposing J curves rising to secondary peaks in the two extreme categories. The distribution confirms the general tendency of the population to fall into the three basic categories. Forty-four per cent of the districts have populations which fall below the stationary category, and 22 per cent have regressive types of populations.

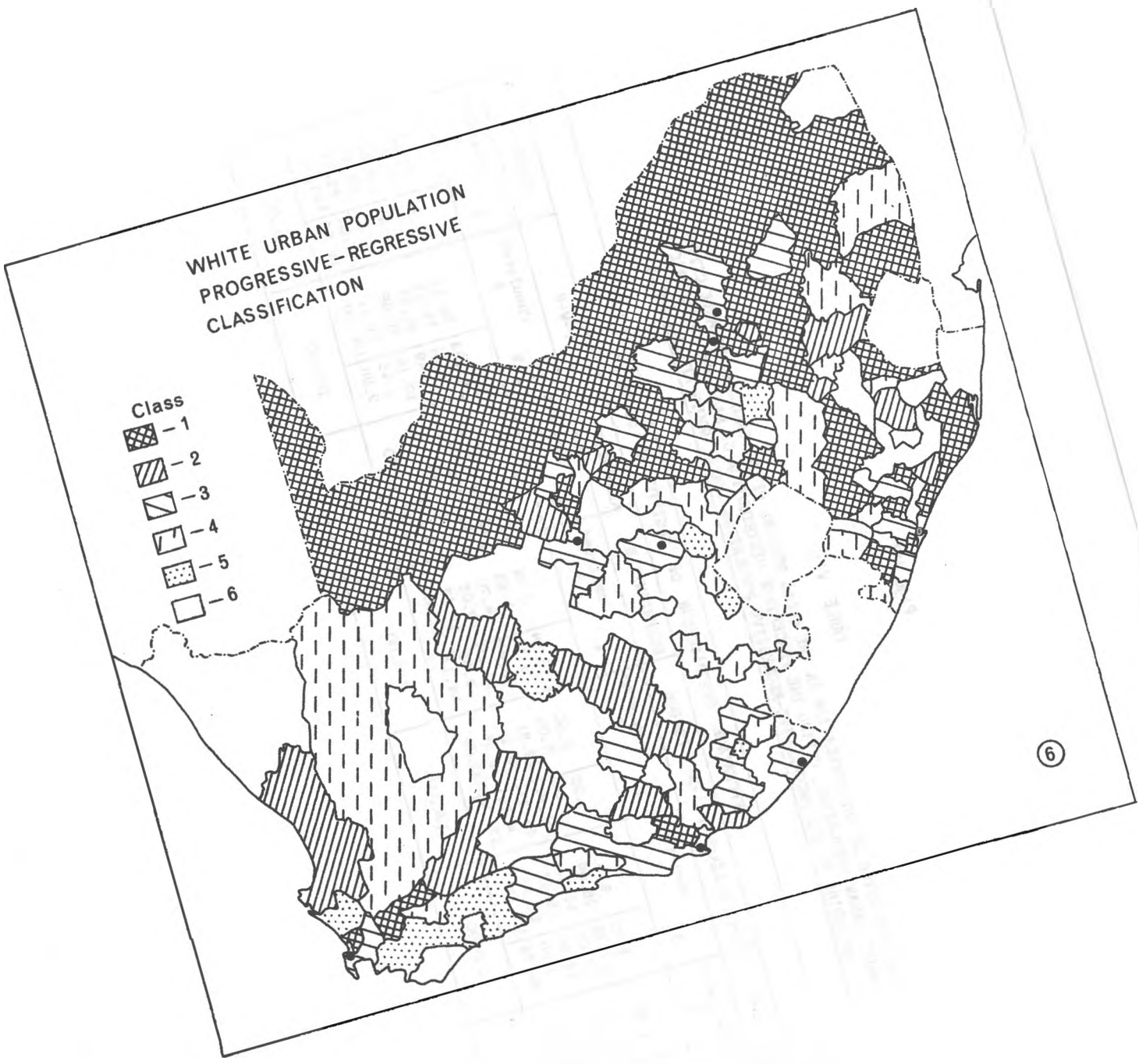
The spatial distribution of the types of population is shown in Table VII, and Figure 6.

The distribution confirms previous findings, and emphasises the correlation between the economy and relative demographic potential. The P-W-V and Durban nodal regions, and the Kimberley region in particular, emerge as areas of relatively high demographic potential. The demographic potential of the Cape Town, Port Elizabeth, East London and Bloemfontein nodal regions is, by comparison, less satisfactory.

The intensity of agricultural, mining and industrial activity in the P-W-V, Durban and Kimberley regions, forms the basis for more progressive urban population patterns. Furthermore, the greater spatial spread of populations in more progressive categories, particularly in the P-W-V and Durban regions, is probably related also to an outward spread of economic opportunity into peripheral areas of the respective nodal regions. These nodal regions may have reached what Friedman has described as the 'industrial stage' in the growth of a space-economy. Here a simple structure of a developed core city and an undeveloped stagnant periphery is transformed into a multi-nuclear pattern, in which lower order urban places in the nodal region share economic growth with the primate core.

WHITE URBAN POPULATION
PROGRESSIVE-REGRESSIVE
CLASSIFICATION

- Class
- 1
 - 2
 - 3
 - 4
 - 5
 - 6



The significance of inter-metropolitan corridors between the primate cities and areas of resource potential are also strongly evident in the distribution.

In the nodal regions of Cape Town, Port Elizabeth, East London and Bloemfontein, the primate cities and their immediate surroundings have populations classed in the near-progressive categories. From these focal areas radial sectors of moderate demographic potential follow inter-metropolitan corridors of communication. The west coastal sector of the Cape Town nodal region is related to resource potential based upon mining and fishing - attractive to male workers, and has previously been shown to have a high sex ratio in the 20 - 39 year age category.

Intervening between the sectors of moderate demographic potential are sectors of low potential, more particularly in the southern Cape, and western Karoo in the Cape Town nodal region, and much of the East London and Bloemfontein nodal regions. Populations in these areas give rise to concern.

The spatial form of the economy in these nodal regions has probably not progressed beyond the stage where it is dominated by a simple primate core, surrounded by a stagnant or backward periphery. The demographic patterns tend to confirm this picture.

Conclusion:

South Africa's urban continuum is near rank-size in distribution. It is the result of an urbanisation process influenced by a complex of economic, social and physical forces. It contrasts with primate city distributions which Berry finds are associated with more simple forces¹⁾.

A measure of primacy is present in the urban continuum, but is expressed in the form of duplicative regional primate cities rather than in the development of a single overriding dominant city. Grounds exist for recognising the southern Transvaal complex of cities as a single national primate.

The division of the country into a series of nodal regions focussed upon the regional primate cities demonstrates important spatial variations in demographic potential, and the influences which the primate cities exercise over their nodal regions. A close correlation exists between demographic potential and the spatial form of the economy. There are strong indications of important migration trends. It is unfortunate that the lack of statistics on internal migration prevents detailed analyses of this phenomena.

The relative economic strength of the P-W-V and Durban nodal regions is closely related to high demographic potential. It contrasts sharply with nodal regions of the Cape Province (excluding Kimberley), and with the Bloemfontein nodal region. The findings suggest the need for greater research into the spatial dynamics of population distribution, and the development of a national planning policy to take account of an apparent social imbalance in the spatial demographic structure of the country.

1) Berry (1961): op cit.

ACKNOWLEDGEMENTS:

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My special thanks go to Mrs. E. J. Wakeman, for assistance in computing.

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SOME ECONOMIC ASPECTS OF URBAN PROBLEMS

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*The following paper is a translation from the Afrikaans.
It has been translated into English for the benefit of overseas readers.*

General Introduction:

The standard of living of a community is dependent upon the degree of efficiency with which the natural resources, technical means, and organisational ability of the community can be applied. The development or decline of an area, and the economic welfare of the inhabitants, depend on the possibilities of that area in terms of investment and employment, as well as on the degree of efficiency of its private and public services, including transport and other communication services.

The basic problems of metropolitan areas particularly are: the problem of the possibilities of profitable investment and employment; the phenomenon of the decay and deposition of old central city areas; the tendencies towards suburban migration; traffic congestion and other forms of overloading of the communication network; the financial problems of local authorities; social disorganisation, especially of youth and the migratory non-White population groups; as well as difficulties relating to the anticipation of new problems and bottlenecks.

The physical, social, economic and functional structures of urban areas are interrelated, and have an important bearing on the internal efficiency of the urban areas - present and future. Population and community flows, transport and specific communications, residential and business structures are basic phenomena in any city, and every city has its own peculiar features.

Basic urbanological problems appear essentially as the problems resulting from the mutual interdependence and interrelations between the existing physical, cultural, social and economic patterns and processes within an area in question, and its adjacent and functionally interconnected areas.

Urbanisation in South Africa:

Urbanisation, particularly in developed countries, is a world-wide phenomenon. In South Africa this phenomenon is noteworthy in that the concentration of economic activity and consequently of population has taken place in a small number of geographically restricted areas. Table I shows that in 1960 about 60 per cent of the White population was concentrated in only four 'industrial' areas - despite the traditional rural background of the largest part of our population. In 1960 about 46 per cent of our Coloured population was living in the Western Cape and in Port Elizabeth, while 50 per cent of the Asiatic population was concentrated in the geographically-restricted area of Durban-Pinetown.

Professor Verburgh has calculated that in 1975, 89 per cent of our White population will be living in towns and cities, and that by 1985 about 93 per cent of South African Whites will be urban dwellers¹⁾.

1) Verburgh, C. (1968): *Urban Road Needs in South Africa*, Bureau of Economic Research, University of Stellenbosch, Stellenbosch.

TABLE I

Distribution of Population by Race in the
Major Industrial Areas of South Africa (1960)¹.

Economic Region	Area	Whites %	Coloureds %	Asians %	Bantu %	All Races %
08	Port Elizabeth-Uitenhage	4.0	5.7	1.0	1.3	2.3
30	Durban-Pinetown	6.4	1.8	49.7	1.7	4.3
40-44 & 49	Southern Transvaal	36.2	6.1	11.0	15.6	20.4
01 & 02	Western Cape	12.9	39.9	1.9	0.9	7.0
Total % in Republic		59.5	53.5	63.6	19.5	34.0

Growth in population is perhaps the most significant indicator of the extent of the economic activity in any particular area, since that growth depends in the last resort on economic opportunity. It is therefore significant to relate population growth to general economic, and especially industrial, progress. Figure 1, for example, illustrates the rapid growth of the total population in the Port Elizabeth-Uitenhage area over the period 1921-1960. (Figure 2 below is also relevant in this respect.)

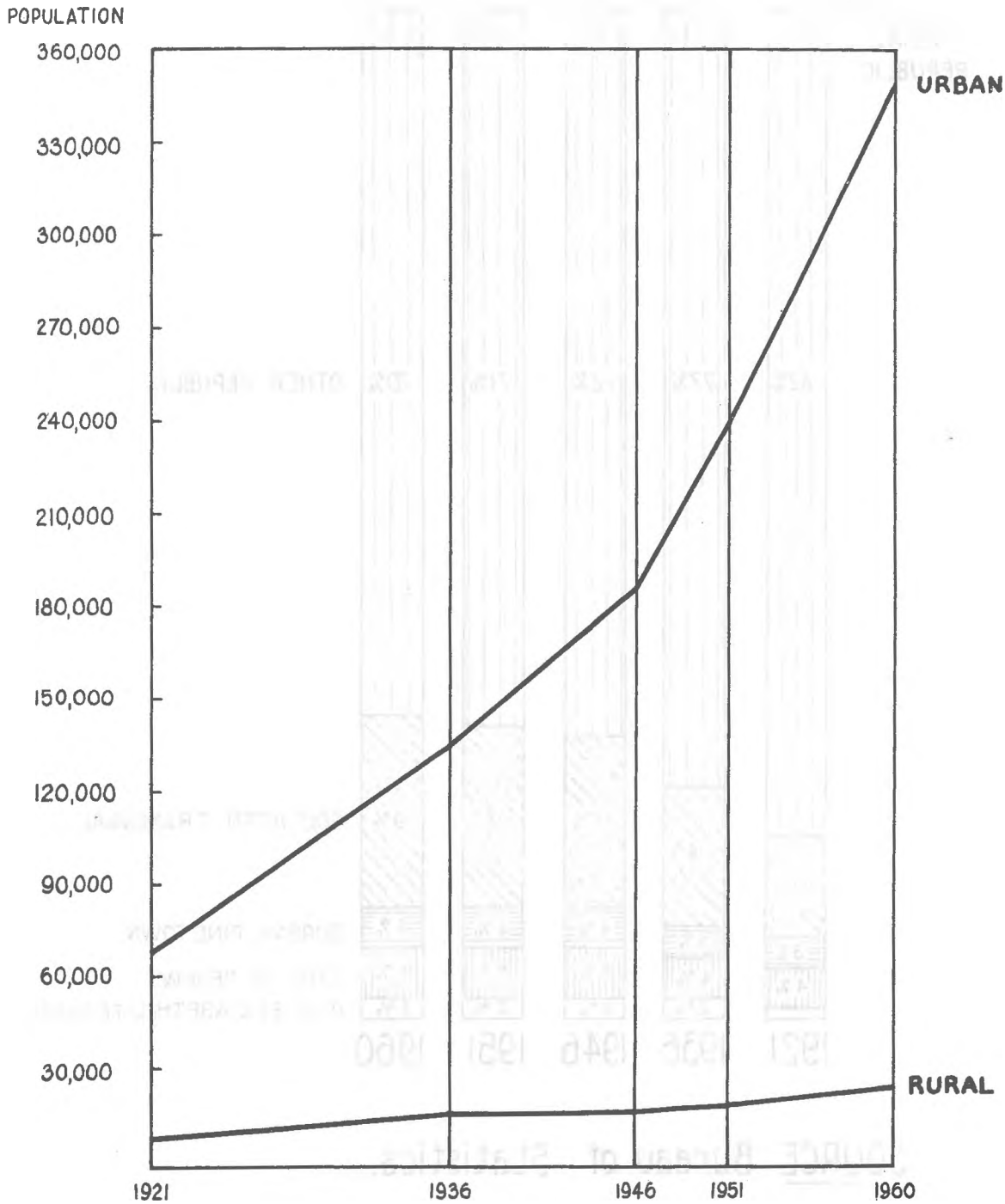
Thus far we have said little about the process and significance of urbanisation of our Bantu people. In 1921 there were 587,000 in all urban areas. In 1951 the figure was 2,329,000 and in 1960 it was 3,192,000 - an increase of 37 per cent over a period of nine years. The rate of increase of the Bantu population as a whole over the same period was 26 per cent. It seems customary to judge the role of the Bantu in the national economy in the light of their contribution as employees. Only during recent years has their significance as receivers of disposable income, as city dwellers and participants in our urban life, and as such as part and parcel of our current and future problems pertaining to metropolitan life, been realised.

1) Source: Republic of South Africa, Bureau of Statistics (1962): *Population Census, 6th September 1960: Sample Tabulations*, Government Printer, Pretoria.

Magisterial Districts Covered by the Various Economic Regions:

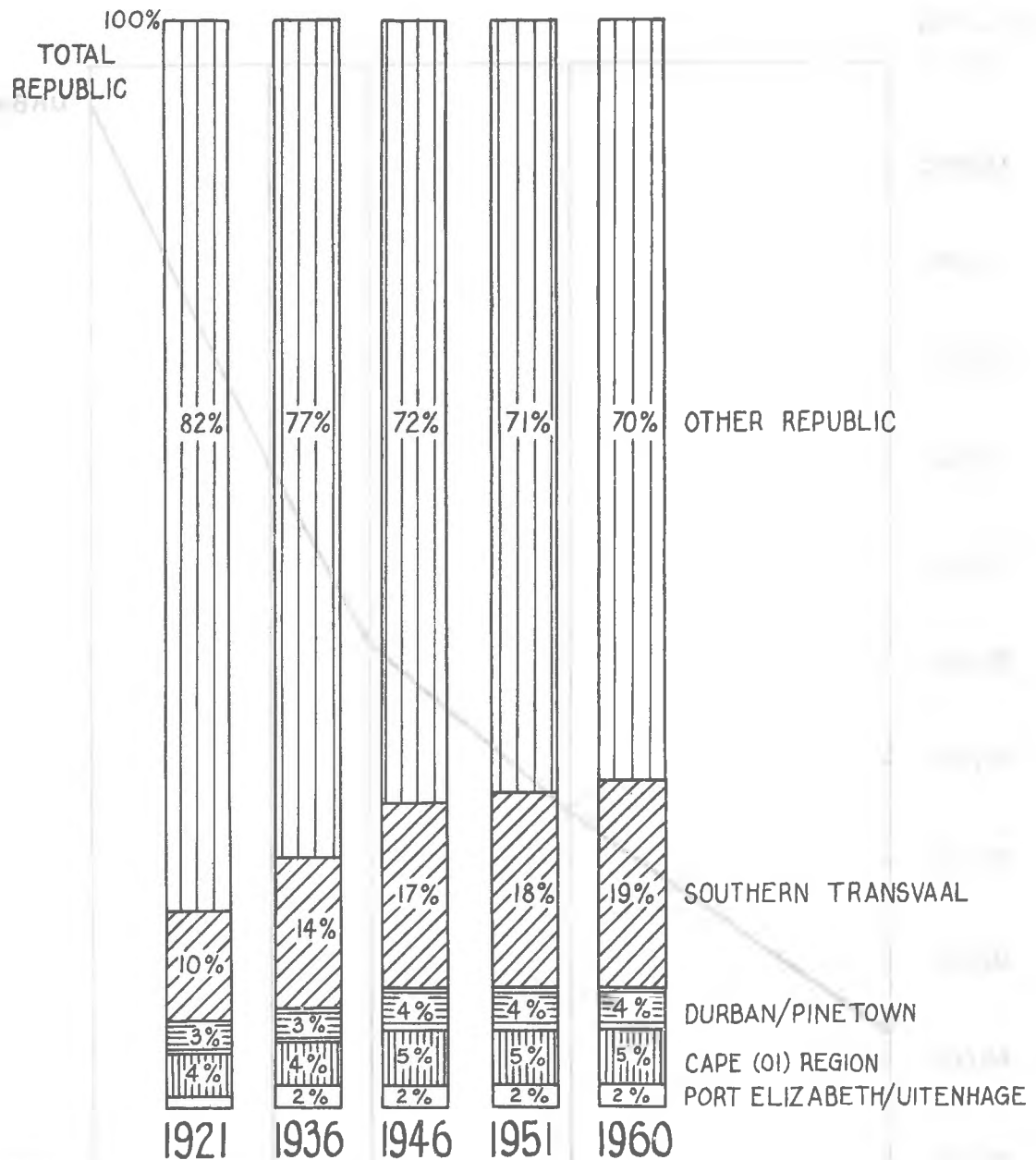
- Economic Region No. 01 - Cape Town, Bellville, Wynberg, Simonstown.
- Economic Region No. 02 - Stellenbosch, Paarl, Worcester, Wellington, Tulbach, Robertson, Montagu.
- Economic Region No. 40 - Johannesburg (and now also Randburg).
- Economic Region No. 41 - Kempton Park, Benoni, Germiston, Boksburg, Brakpan and Springs.
- Economic Region No. 42 - Randfontein and Krugersdorp.
- Economic Region No. 43 - Pretoria.
- Economic Region No. 49 - Delmas.

FIGURE 1.
THE GROWTH OF POPULATION IN THE URBAN
AND RURAL AREAS OF THE PORT ELIZABETH-
UITENHAGE REGION. 1921-1960.



SOURCE : Bureau of Statistics.

FIGURE 2.
THE DISTRIBUTION OF TOTAL POPULATION - IN THE
REPUBLIC AND FOUR MAIN URBAN AREAS, 1921-1960



SOURCE: Bureau of Statistics.

Our Western economy is characterised by the use of the machine, by the specialised forms of division of labour, by competition, and by a market economy in which money is used as a medium of exchange and as a unit of value. The contact with our Western culture, the creation of new desires, the need for money to acquire the desired goods and services, were and still are the greatest incentives to the Bantu to leave their traditional environment and way of life (even if just temporarily) for the city and towns: *Siyalandele Imali* - 'We follow the money'.

From an economic point of view, urbanisation of the Bantu has had two major consequences, namely:

- (i) increased differentiation in their income and economic status; and
- (ii) a complete change in the structure of their needs, aspirations, way of life and integration into our urban structure.

Some Economic Determinants of Metropolitan Growth:

The concentration of people in specific, geographically-limited areas is pre-eminently a function of the concentration of economic activities, and particularly of basic industries, with their stimulating influence on further investment opportunities and employment.

Industrial specialisation, and the development of large-scale industry in particular, has contributed noticeably to the urbanisation process. Table II shows changes, by economic sector in the gainfully employed labour force of South Africa. In the Port Elizabeth-Uitenhage complex for example, the number of secondary industries has increased little over the past decades, while the average total number of employers per industry has increased from 65 in 1945/6 to 116 in 1963/4 - an increase of something of the order of 78 per cent. (See Table III). Large-scale industry, except in cases of intentional decentralisation, characteristically is located in or near metropolitan areas.

The degree of concentration of South African secondary industry is shown clearly by the data in Tables IV and V. In 1959/60, for example, 72 per cent of the total number of industries, and 81 per cent of total employment, 86 per cent of the salaries and wages paid, and 83 per cent of the added value of our industries were concentrated in the Southern Transvaal complex, the Western Cape, Port Elizabeth and in the Durban-Pinetown areas.

The concepts of *economic base*, *basic industries*, and *basic workers* have been developed by Homer Hoyt¹⁾ and others. These concepts, as well as the influence of 'basic industrial workers' on general employment and population concentration in specific areas, are of particular importance for our purposes.

The meaning of the economic base concept can be briefly described as follows:

'... the (economic) base is that part of an urban economy which is composed of activities whose principal function is that of exporting goods, services or capital beyond the economic boundaries of the community. The economic complement of the base is made up of service activity. Service activities of the community are primarily engaged in internal trade which involves the sales of goods, personal services, and capital to local base enterprises ...²⁾.

-
- 1) Hoyt, H. (1966): 'The Forces Underlying City Growth and Structure', *According to Hoyt*, Washington, pp. 296 ff.
 - 2) Andrews, R.B. (1954): 'Mechanics of the Urban Economic Base; General Problems of Base Identification', *Land Economics*: 30, 164.

TABLE II

Growth in the Economically Active Population,
(all races combined), in South Africa: 1946-1960

ECONOMIC SECTOR	Number of Persons, in Thousands, by Year					
	1946		1951		1960	
	No. of Persons	%	No. of Persons	%	No. of Persons	%
Agriculture	1,547	36.7	1,509	32.9	1,701	29.9
Mining	498	11.8	510	11.1	606	10.6
Manufacturing	360	8.5	502	10.9	679	11.9
Commerce, Ser- vices, Transport etc.	1,816	43.0	2,072	45.1	2,710	47.6
TOTAL	4,221	100.0	4,593	100.0	5,696	100.0

Source: Union Acceptances Limited (1964): *The Scope for Investment in South Africa*, Union Acceptances Limited, Johannesburg.

TABLE III

Growth in Average Size of Manufacturing Concerns in
the Port Elizabeth-Uitenhage Region, 1920/21-1963/64

Year	No. of Firms	Average No. of workers (all races)	Net value of Production, per firm (Rands)	Index Employees per firm	Index Production per firm
1920-21	186	25	12,035	38	19
1925-26	193	35	16,239	54	26
1935-36	243	50	28,639	77	46
1945-46	291	65	62,038	100	100
1949-50	507	61	82,554	94**	133
1961-62	469	85	108,872	131	175
1963-64*	450	116	260,026	178	419

* Preliminary tabulations.

** The decline in the index is apparently due to changes in classification by the Bureau of Statistics resulting in the omission of certain categories of firms.

TABLE IV

Regional Distribution of Employment, Salaries and Wages, and Value Added
in the Industrial Sector, 1959/60

R E G I O N	No. of Firms		Total Employment		Total Salaries & Wages		Value Added	
	No.	%	No.	%	(R1000)	%	(R1000)	%
Western Cape (Economic Region 01-02)	1,696	16.64	104,121	16.82	85,100	17.47	179,857	17.25
Port Elizabeth-Uitenhage (Economic Region 08)	424	4.16	29,193	4.72	22,471	4.52	47,161	4.52
Southern Transvaal (Economic Region 40-44)	4,190	41.11	283,933	47.48	262,699	52.86	505,811	48.51
Durban-Pinetown (Economic Region 30)	1,004	9.85	74,749	12.08	57,904	11.65	130,815	12.55
TOTAL for South Africa	10,192	71.76	619,011	81.10	496,699	86.50	1,042,744	82.83
	-	100.00	-	100.00	-	100.00	-	100.00

Source: Bureau of Statistics, Pretoria. The 1959/60 data are the most recent available on a regional basis.

TABLE V

Distribution of Manufacturing Industries
by Principal Industrial Areas in South
Africa, 1925-1962

YEAR	R E G I O N	Total No. of Firms	Percentage of Republic
1925-26	Southern Transvaal	1,450	24
	Western Cape*	1,050	17
	Durban-Pinetown	452	8
	Port Elizabeth-Uitenhage	193	3
	Republic	3,145 6,023	52 100
1945-46	Southern Transvaal	2,959	30
	Western Cape	1,374	14
	Durban-Pinetown	833	9
	Port Elizabeth-Uitenhage	291	3
	Republic	5,457 9,738	56 100
1961-62	Southern Transvaal	4,879	41
	Western Cape	1,988	17
	Durban-Pinetown	1,124	10
	Port Elizabeth-Uitenhage	469	4
	Republic	8,460 11,803	72 100

Source: Calculated from data supplied by the Bureau of Statistics.

* The Western Cape consists of Economic Regions 01 - 03.

Briefly, the export base theory (in a regional context) regards the structure of the urban or regional economy as comprising two main classes of industrial activity:

- (a) basic activities (or 'forming activities') which produce and distribute goods for 'export' to firms and private consumers outside the defined area; and
- (b) non-basic activities (or 'serving activities') whose goods and/or services are consumed locally, i.e. within the boundaries of the defined area.

The concept thus appears to be readily applicable to a study of regional or urban industry, and maintains that *basic* industrial activities draw new purchasing power, and thus additional economic activity, into the area concerned, via its 'exports'; whereas non-basic industry is responsible merely for the re-circulation of the region's purchasing power. This approach emphasises that the basic component of regional industry *provides the key to growth*. It provides, therefore, a close corollary to the role

attributed to exports in international economics, where via the foreign trade multiplier effect, extra 'foreign exchange' resulting from exports induces additional income and economic activity within the exporting country (area).

It follows from this principle that every worker in a *basic activity* attracts and 'supports' one or more workers in the non-basic economic activities such as baking, local printing, retailing, financing, transport, local authority services, the basic professions, and so on.

The multiplier effect of the concentration and spread of basic industries, in terms of employment and the development of tertiary industries and new employment opportunities, can be inferred from this approach, and can be used as an explanation of population concentrations in and around industrial centres. It can also be used for projections of future concentration tendencies.

An important result of the industrial and population concentration in South Africa with its heterogeneous population, is the appearance of new work opportunities and occupational differentiation, especially in regard to the non-White population groups.

It is an acknowledged fact that work opportunities in the secondary sector develop more rapidly than is the case with total employment. This could mean that the urban concentration process (via industrial establishment and industrial growth, the multiplier effect of the economic base, and the tendency towards larger industrial units), provides not only greater and more rewarding work opportunities in the urban areas, but also that it brings with it greater opportunities for all races of labour specialisation - although only to the extent that government policy, and the possibility for labour specialisation amongst the various racial groups, allow.

Stages of Industrial and Economic Development:

Because, with the possible exception of administrative capitals and certain port cities, the metropolitan growth process basically is a function of the geographical concentration of secondary industry, we can better understand the urbanisation process by briefly taking note of the stages in industrial growth in specific areas:

The first step is in fact without exception what Thompson has described as: 'The stage of export specialisation in which the local economy is a lengthened shadow of a single dominant industry or even a single firm'¹⁾. Here we have but to point to the development of Johannesburg, and areas such as Vanderbijlpark, Sasolburg, Welkom, and others.

In the more advanced stage, there emerges 'the stage of the export complex in which local production broadens to other products and/or deepens by extending forward in stages of production by adding local supplies and/or consumers to intermediate products'²⁾.

Thirdly, there develops the stage of the relative economic maturity of an area. Here the most important local development is characterised by the replacement of importing (from outside of the area) with 'new production for the areas internal consumption'. A telling example of this is the development of component manufacturing for motor vehicle assemblers in the Port Elizabeth-Uitenhage area during the 1960's.

1) Thompson, W.R. (1965): *A Preface to Urban Economics*, John Hopkins Press, Baltimore, p. 15.

2) Ibid.

Fourthly, there follows the stage of metropolitan regional development and the emergence of conurbations: the overflowing of the original population into suburban complexes. Characteristic economic and functional specialisation emerges, with associated metropolitan configurations and metropolitan functional problem-situations.

The population of certain areas, particularly the cities, depends for the provision of its necessities, mainly on income derived from the manufacturing of goods which are consumed elsewhere. This fact forms the basis of the 'economic base' of an area (or the basic core of the growth of an area), which in turn has a multiplier effect on work opportunities and urban population growth. From this, endeavours for industrial decentralisation can reduce the tempo of metropolitan growth and create new, small, urban nodes. Nonetheless, the fact is that urban areas which have already more or less reached the stage of metropolitan development, or even of relative economic maturity, do in most cases possess an inherent growth power which creates further development, particularly in the area of tertiary industry such as commerce, finance, transport, etc.

Urban areas do not necessarily go through all the stages of development outlined above. For example, it can happen that a new harbour or a planned new decentralised industrial area is not in a position to attract fully skilled labour or to stimulate other economic activities which could lead the local economy from one developmental stage to the next.

Incomplete momentum in urban growth is usually relative rather than absolute, particularly in the case of the development of metropolitan areas and conurbations. In this connection Thompson further remarks that 'Typically, one city will rise from a group of rivals to become the "mother city" of the group. Whichever city gets the jump on others and achieves early economics of service industry aggregation paves the way for progressive cumulative coups¹⁾.

Some Economic Advantages and Disadvantages of Urbanisation:

Every urban area has certain characteristics in regard to its economic, social and functional structure, which in the process of development create to a greater or lesser degree bottlenecks and economic and social problems. These problems are closely related to the nature of the area concerned in regard to topography, land use from the point of view of residential and commercial structures, industrial specialisation, suburban development and traffic patterns.

All cities wrestle in one way or another with traffic congestion and the associated waste of time in regard to communication. The solution for this, insofar as it is possible, lays a heavy burden on the local community concerned and on the national economy. The unit cost of basic services increases. The provision of freeways and parkways, the scrapping of obsolete city centres and slum areas, and the rehousing of families are all factors that add to these costs.

The process of suburban growth creates additional difficulties in regard to land use, and the provision of services and recreational facilities. The occupation of rural peripheral areas around our big cities has up till now generally revealed a deficiency in goal-oriented planning and co-ordination.

Industrial concentration and metropolitan development produces increasing problems of air and water pollution, and the exhaustion of natural resources such as water.

1) Thompson, p. 16.

Technological changes produce problems of adjustment, chiefly in regard to employment, and they have a more pronounced impact on urban concentrations than the country as a whole. Maladjustments can occur particularly in areas of predominant relative specialisation - in other words, where there is a comparative shortage of industrial differentiation - because the economic base of such an area is directed towards a comparatively small group of related industries. The Port Elizabeth-Uitenhage area is a good example of this situation, because it is largely dependent on the motor vehicle assemblers and motor vehicle component manufacturers. (See Figures 3 and 4).

An important argument in favour of metropolitan development is the advantages which arise from the fact that in large cities in general a greater degree of economic differentiation and balance can be brought about, in contrast to areas that depend very largely, for example, on agriculture or mining.

Industrial concentration and diversification by nature have certain advantages with reference to the external economic advantages which are mainly provided by service industries, the availability of skilled labour, as well as professional services and markets for speciality goods.

Metropolitan concentrations provide greater opportunities for occupational differentiation and labour specialisation in every conceivable sphere. 'The leading practitioners in practically any field of endeavour - the professions, business, entertainment - tend to locate in the largest city. The metropolis constitutes the largest and most lucrative market for their talents and central to the further market of the hinterland; the ready availability of every ancillary and supporting service enables them to apply their capacities with maximum effectiveness¹⁾. An analysis of personal disposable income in South Africa shows that the per caput income of inhabitants of urban areas is noticeably higher than that of the smaller towns and villages. (See Table VI).

The Need for Inter-Disciplinary Research:

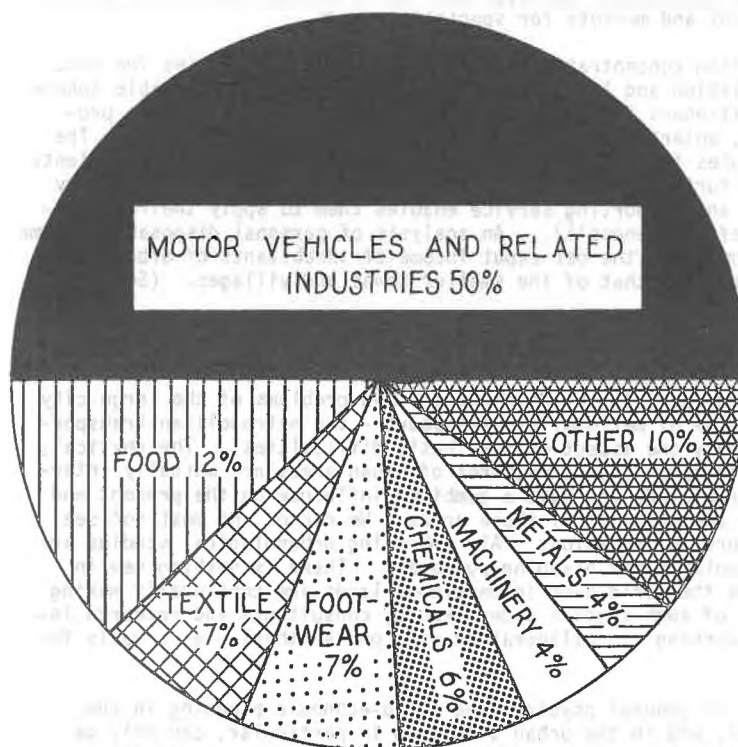
We have to face all the difficulties and problems of the large city - not only the problem of metropolitan transport - the metropolitan transportation problem is only one aspect of more basic difficulties. The physical, social, economic and functional structures of urban areas are mutually interdependent and interrelated, and have a combined influence on the present and future functioning and problems of these areas. We cannot and must not see these various factors in isolation. All embracing urbanological studies are an essential prerequisite for planning purposes. There is nothing new in this idea. Cities the world over in developed lands are continually making use of the results of such studies undertaken by consultants and research institutes - (often working in collaboration with one another) - as a basis for planning.

The task of general physical and socio-economic planning in the Republic in general, and in the urban situation in particular, can only be successfully fulfilled if everyone concerned actively takes part in the planning and carrying out of the necessary *research*. This must naturally include the State, local authorities, the business community and research organisations themselves, (all working on a co-ordinated basis), as well as all relevant disciplines such as geography, economics, sociology, political science, and even business economics itself.

In many countries, including South Africa, the unprecedented movement of people to urban areas caused one of the most profound social and economic transformations.

1) Bellan, R.C. (1946): 'The Future Growth of Britain's Cities', *The Town Planning Review*, 37 (No. 3), 117.

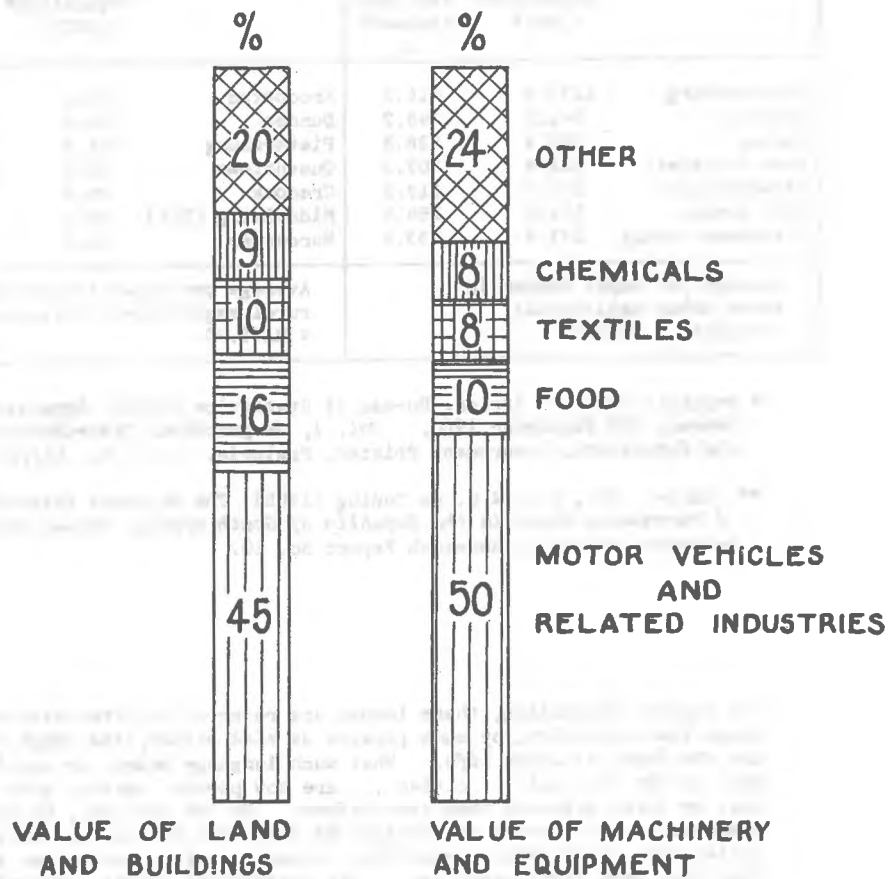
FIGURE 3.
DISTRIBUTION OF GROSS PRODUCT BY MAJOR
INDUSTRIAL CATEGORIES, PORT ELIZABETH, 1967.



Motor Vehicles and related Industries include the Assembly and Manufacture of motor vehicles, and the manufacture of transportation equipment such as railway equipment, motor buses, etc.

Source: Unpublished data from the Institute for Planning Studies University of Port Elizabeth.

FIGURE 4:
PRESENT VALUE OF LAND AND BUILDINGS, AND
MACHINERY AND EQUIPMENT, IN SECONDARY
INDUSTRIES IN THE PORT ELIZABETH-UITENHAGE REGION,
BY MAJOR INDUSTRIAL CATEGORIES, 1967.



SOURCE: Bureau of Statistics.

TABLE VI

A Comparison of Per Caput Personal Disposable Income (for all races) in Specific Magisterial Districts in South Africa, 1958-1959

Urban Magisterial Districts			Rural Magisterial Districts		
	Population* (,000)	Per Caput Income** R		Population* (,000)	Per Caput Income** R
Johannesburg	1137.8	416.2	Kroonstad	79.0	197.9
Pretoria	542.2	343.2	Dundee	65.0	122.9
Durban	607.9	338.8	Pietersburg	243.2	54.5
Port Elizabeth	311.3	402.0	Queenstown	65.7	132.0
Bloemfontein	170.7	313.2	Cradock	35.8	171.7
East London	173.7	266.4	Middelburg (Tvl)	88.8	121.4
Pietermaritzburg	171.3	233.6	Worcester	68.2	308.7
Average per caput income in seven urban magisterial districts = R330.50			Average per caput income in seven rural magisterial districts = R158.40		

* Republic of South Africa, Bureau of Statistics (1963): *Population Census, 6th September 1960, Vol. 1, Geographical Distribution of the Population*, Government Printer, Pretoria. R.P. No. 62/1963.

** Source: Nel, P.A. & C. de Coning (1965): *The Regional Distribution of Purchasing Power in the Republic of South Africa*, Bureau for Market Research, Pretoria, Research Report No. 10.

'In popular journalism, these issues are referred to often with more drama than precision, by such phrases as *sick cities*, *the urban crisis*, and the *decay of urban life*. What such language means, or ought to mean is not that all ... cities ... are now poorer, uglier, more dangerous, or worse governed than ever before. On the contrary, by most measures (urban) people are better off than ever before, and most of our cities are, on the whole, wealthier, cleaner, safer, and better governed than they were fifty years ago. The language of crises, properly understood, means that today many problems which have long been with us are now more visible than ever before, that our expectations and standards have risen to make problems that were once tolerable now intolerable, and that our knowledge of the complex inter-dependencies among people in cities has increased to a point where we are now aware of the problems which hitherto were unrecognised and of the opportunities hitherto unsuspected. The true *crisis* in our urban affairs is not that our cities are about to be destroyed by the problems but that the concepts, common knowledge and intelligence necessary for dealing with the problems which do exist are in critical supply'¹).

- 1) *Joint Centre for Urban Studies*, Massachusetts Institute of Technology and Harvard University, Cambridge Information Brochure, 1966, p. 3.

Extensive regional analyses constitute an essential foundation for urban planning. In South Africa there still appears to be a serious shortage of basic research results in this area. It also appears that there is considerable misunderstanding in regard to basic concepts and methods in the field of urbanological research.

The study of all factors affecting growth and planning in our urban areas is obviously an expensive and time-consuming task. It requires researchers properly equipped and motivated to work together for this common purpose. It requires the assimilation and dissemination *on an interdisciplinary basis* of a vast number of facts in many diverse fields. It requires a thorough interpretation of these data and expert analyses of their significance by people who can do so *objectively*.

The responsibility for this important task on a properly organised, interdisciplinary and integrated basis would seem to be the duty of our universities. By the nature of things, considerable funds will be required. However, it should be possible to convince our local authorities and the business sector of the ultimate dividends of a joint investment in this particular field of research in our country.

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DISCUSSION ON THE SECTION:
'THE PATTERN AND TREND OF URBANISATION'

The discussion was formally introduced by Dr. van Zyl Slabbert, of the University of Stellenbosch. He commented that 'Urbanisation is not the prerogative of any one branch of science, but a legitimate area of interest for any scientist'. He pointed out that this meant that in a gathering such as the conference, it was necessary to be willing to 'sacrifice some degree of disciplinary sophistication for the sake of mutual understanding'. During the discussions, (in which Mr. R.C. Calburn, editor of 'Municipal Affairs'; Professor F.J. Potgieter of the University of Potchefstroom; Mr. K. Beavon of the University of Cape Town; Professor H.L. Watts of the Institute for Social Research and Professor R.J. Davies, both of the University of Natal, took part), it became clear that there was this problem of mutual understanding between basic workers from different specialisms, and also between basic research workers and applied research workers dealing with practical problems. It was evident that what was relevant within one context did not always appear to other disciplines to have the same significance. Professor Davies, in the closing stages of the discussion, summed one aspect of the position up by saying: 'I see it as a problem of communication between the people who are doing basic research and the people who have to use the material which comes out of that research'. He said the conference discussion pointed to the need for 'the link between the users of information and the providers of information to be considerably improved. Otherwise we will be doing basic research to very little point, because it will never be applied in the day-to-day world where ultimately it should be used'. He also pointed out that planning proposals for the development of areas in South Africa were made, 'very rarely ... (with) ... an analysis of the underlying forces in the population ...' for which the planning was intended. The academics in ivory towers tend to forget that they have to communicate with people outside, and that their skills have a contribution to make to the everyday world.

The second point made by Dr. Slabbert in his opening of the discussion was that in attempting to understand and gain control of urbanisation, '... the general-systems analysis approach requires a command over a great deal of factual information about the variables that act as components of such a system. At present we do not have adequate information regarding the process of urbanisation in South Africa. This point is underlined by the papers of Professors Davies and de Coning, where the need for large-scale research into elementary aspects of the urbanisation process is emphasised ... I believe that ... there is a need for a display of honest ignorance so that our questions - sometimes very obvious ones - may test the certainty with which we accept our propositions, theoretical orientations, and research programmes in our various disciplines'.

The discussion also ranged over a variety of other topics, along the lines of the papers presented. Mr. R. W. Morris, of the Co-ordinating Committee of Ratepayers' Organisations, Durban, Professor Spengler of Duke University; Mr. S.O. Eklund of the South African Road Federation; and Mr. R.J.P. Jordan and Mr. R.G. Waldeck of the University of the Witwatersrand, took part.

THE HISTORY AND DEVELOPMENT OF TOWNS

REFLECTIONS ON THE URBAN HISTORY OF SOUTH AFRICA :
SOME PROBLEMS AND POSSIBILITIES, WITH SPECIAL
REFERENCE TO DURBAN

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This paper attempts to relate to South Africa some questions of method and purpose in urban history and to suggest an approach to the development of an urban historiography in this area. It stems from a belief that, although we are sure to get a good deal of historical reference and inference from social scientists ancillary to their studies of urbanism and urbanisation, we will not achieve the perspectives of connected and documented accounts of urban history without the contribution of historians. But difficulty often arises when we seek agreement on the significance of the results of their work. To begin with, it is appropriate to consider briefly some differences and similarities in the modes and purposes of historians and social scientists.

For years historians and social scientists have been discussing the relationship of history to urban studies, and one of the central issues in the debate seems to be whether urban history is or ought to be an adjunct or branch of the social sciences, receiving instructions from them and serving in some sense as a kind of data bank or retrospective theoretical testing ground. To what extent can or will historians apply to cities in the past the objectives, the methods and the findings that appear in studies of contemporary cities? It would seem that the nature and quality of much historical evidence stands at least partly in the way of a thoroughgoing realisation of such expectations. Perhaps still more importantly, the perspectives and purposes of historical inquiry often appear to be at variance with those of the social scientists.

Historians are committed, generally, to taking the past on its own terms and to some extent for its own sake. Following the surviving evidence they retain within a broad concern for synthesis an interest in particular events and individual cases which taken together do not necessarily conform to theoretical expectations. Contingency and the unforeseen appear to turn an infinite kaleidoscope in history, and the frequent intractability of historiography to a precision or mode of speech satisfactory to social science is a difficulty that may not be ascribable solely to the idiosyncracies of historians.

Having said these things, however, the dichotomy they suggest is not in practice as rigorous as it seems. Any account that hopes to give coherence to events must and does recognise essential continuities, patterns, and themes upon which the differences in men and institutions play their variations over time, and historians will inevitably take their cues from current concerns and the contemporary intellectual climate in a search for the origins of the present. But they will probably agree with Oscar Handlin's prescription that 'We need fewer studies of the city in history than of the history of cities' - studies which will focus 'upon a city specifically in all its uniqueness', seeking there to trace in detail and in context the 'causal nexus' among its myriad elements that gives meaning and relevance to theory. Thus the historian's task 'is not to predict, but to order the past from which the present grows in a comprehensible manner To make clear

what was permanent, what transient, what essential and what incidental, in its development'¹).

Historians therefore have their own commitments and are likely to continue to pursue interests that tend to juxtapose the traditional methods and humanistic perspectives of their calling to the theoretical interests of social science. But these perspectives are useful to the common effort to see the city whole and to place it in the larger matrix of region, nation or society, not only spatially but temporally. And while narrative remains the central commitment and distinguishing characteristic of historical inquiry, the choice of an analytical framework germane to various aspects of the social sciences is by no means precluded.

Historians approaching the subject of cities might consider Eric Lampard's concept of 'human ecology' which he proposes as the means of analysing the process of urbanisation by considering the composition of a population; what it does in and with its spatial environment depending upon the material means or technology at its disposal; and by treating social organisation - its institutions - as the crucial element that determines the configuration of the others. Lampard sees the ecological approach as a clear guide to dealing on the level of one city or groups of cities with such general problems as 'the differential organisation of social space, the creation of a social order within a population, the adjustment to a reorganisation of social environment by the human personality'²).

Although he does not stress the political dimension as a necessary one for his purposes, Lampard's scheme ought to be adaptable by more conventional historians, if only as a set of general directions. It would appear to describe in a somewhat formal way what an historian of South African cities might accomplish with a political and administrative narrative wide enough in scope to embrace the institutional responses of the communities to their demographic, political and physical environments, using the governing theme or concept of 'racial ecology'. It is difficult not to recognise the force of Lampard's argument that:

'If the urban historian is to be more than a historian who happens to do his research on the subject of cities it will be necessary to show that the term "urban" explains something in history that cannot be better explained by recourse to other frames of reference'³).

In the case of South Africa - but not South Africa alone - the urban nexus does explain something better: it explains better how and why the policies and programmes of segregation and separate development emerged as dominant and shaping concerns of local and national government - and what those policies were like - in an increasingly urbanised society.

This is an approach which has yet to be systematically developed in South African historiography, yet I believe it is essential to an understanding of the country's history. Traditional

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- 1) Oscar Handlin, (1963): 'The Modern City as a Field of Historical Study', in Handlin and Burchard, eds., *The Historian and the City*, Harvard University Press, Harvard, pp. 25, 26.
 - 2) Eric E. Lampard (1965): 'Historical Aspects of Urbanisation'. in Philip M. Hauser and Leo F. Schnore, *The Study of Urbanisation*, Wiley, New York, p. 550. See also Handlin, op. cit., loc. cit.
 - 3) Quoted in Glaab, Charles N. (1965): 'The Historian and the American City', in Hauser and Schnore, op. cit., p. 59.

interpretations have rested upon conceptions of rural, pastoral settler and Bantu societies as they existed to the end of the nineteenth century, and upon colonial political history and imperial relations. In this light the well-springs of apartheid might then be seen in the 'golden age' of the Republics and be ascribed to the pressures and interests that gave rise to the 1913 Land Act, rather than to urban environments of the nineteenth century and early twentieth century. But these are partial views and need to be qualified. In the first place the dichotomy they imply between rural and urban origins is not as distinct as it might seem. These origins are in vital respects complementary and the rise of the cities has not been a deviation from some natural agrarian order, but rather an integral historical process embracing the whole society.

As urbanisation has progressed in South Africa, the more its society as a whole has taken the shape of an 'urban system', a network of economic and political links strategically based upon the nodal points of a few major urban centres. The concentration of relatively large numbers and varied kinds of people in urban areas was bound to be a significant development at an early stage in a land of vast spaces and low population density. Each of these nodes of common experience exhibits characteristics born of its own past and has contributed to the national character in particularistic ways as well as with features common to them all. Cape Town with its full three hundred years of growth from colonial outpost into a polygot metropolis; Kimberley, first of the mining boom towns facing questions of social order in new forms; Johannesburg, primary industrial complex showing on an unprecedented scale the effects of mushroom modernity on its variegated population; Bloemfontein or Pretoria, agrarian republican administrative capitals; and frontier towns like Grahamstown, will all evince similarities and differences in the 'organisation of social space', the 'creation of a social order', and 'adjustment by the human personality to a reorganisation of social environment'. First individual and then joint studies might ultimately take shape as a connected and comparative history showing in general perspectives the forces at work in the major cities and representative towns of South Africa.

A major point of reference is the Natives (Urban Areas) Act of 1923. This act embodied for the first time national recognition of the impact of urbanisation. It was created out of the historical experience of South African towns and laid the foundation for subsequent policy on a national scale. We might look back from this point along the lines of related past development in various communities and forward to the development or frustration of the ideas and administration embodied in that act. The history of municipalities, governments, political parties and movements, of population groups, of organisations and individuals, could be focussed through it upon the questions of urban social organisation and material development as a political problem.

But the question of relating urban to national, colonial or imperial history will always obtrude upon the work of historians. The problem is to avoid simply illustrating an accepted outline of national history from local information on the one hand or producing a work of purely filial piety on the other. Besides relating to a larger whole, the locale has its own story as well. It follows a course that is sometimes out of phase with or independent of the former, or is concentrated on issues that emerge forcefully only later in the national synthesis. The dynamics of urban native affairs were internal to Durban's development, for example, and one should rather follow its lines of influence outward upon the larger scene. In this way, looking outward from the local community through the interaction between municipal and central government, a local history may contribute new perspectives to the national synthesis by demonstrating the urban forces at work in it, yet retain its focus upon the urban milieu.

The history of Durban indicates that some of the sharpest and most insistent pressures on policy-making and administration came from the towns, and that by the early 1900's South African history was being fundamentally influenced by urban factors. In the last quarter of the nineteenth century and the first two decades of the twentieth, Durban became a leading exponent of group race policy and a model for urban native administration to which other towns such as Johannesburg looked, just as Durban itself had sought to draw upon the experience of some Cape municipalities such as Grahamstown, Port Elizabeth, and Cape Town. Any historical account of this process ought to consider a three-fold analysis which tends also to follow the chronological stages of its development. First is cognition: the emergence and definition of problems of urban growth by those involved. How did ideas or attitudes take shape and what induced them? Second, how were policies formed and expressed in legislation? Third, how and to what effect were administrative institutions developed? These broad categories tend of course to overlap chronologically and feed back upon one another, but they also reflect an historical sequence as the following broad scheme of different periods suggests:

A. 1830's to 1870:

Before 1870 Durban was settled, its political constitution created, a sense of community achieved. Its relationship to its physical environment was identified in terms of strategic and commercial goals which tended to stimulate and reinforce latent attitudes toward its exotic race mixture. Early frustration in achieving those goals and a perceived danger to the settlement's security intensified these attitudes.

B. 1870 to the 1890's:

After 1870 the real growth of Durban commenced with the realisation of its strategic advantages under the impetus of mineral exploitation inland, staple agriculture on the seaboard, and an imperial policy that added railway building to the periodic fillip of war. By the 1890's material accomplishment had levered Durban into a commanding position among South African cities and it entered the heyday of municipal enterprise and local autonomy with which it supplied the infrastructure of material civilisation to its inhabitants. But the rapid concentration of widely disparate kinds of people intensified problems of social organisation and Durban's rulers felt challenged to cope with 'strangers' who seemed to them to threaten the standards and even the existence of their civic life. As the possibilities of a multi-racial community began to emerge under an egalitarian and universalistic legal system, conflict developed with the central authority over the inhibitions placed by the constitution and by a protective native policy upon the arbitrary resolution of the 'Native Question'. Burgesses and Councillors defined their problem and took steps to meet it in ways that set a pattern for all the future. Conceptions of an 'Asiatic Menace' and native 'Social Pest' took definitive shape in European minds and found expression in the beginnings of policy - segregation, urban locations, a registration and pass system, and other controls or restrictions on free economic activity, residence and movement within the town. This was a period of cognition, of policy formation, and administrative failure.

C. 1890's to circa 1915:

As the problems of urban growth assumed ever-increasing dimensions, the failure to satisfy established attitudes and to achieve policy goals led to a period of policy reform, legislative innovation and administrative consolidation which entrenched the convictions and confirmed the tendencies of the past. After the advent of self-government for Natal in 1893, efforts to disfranchise Indians and to restrict their trade and residence were increasingly successful. Although Indian resistance and the intervention of the imperial

government inhibited this process, such efforts ultimately took shape in the group areas ordinances of the 1920's and after. Meanwhile the rhetoric of separate development was enhanced in public discussions of increasing urgency throughout the early 1900's. In an atmosphere of rising popular concern, more positive measures were taken to control the urbanisation of Bantu resulting in the creation of the so-called 'Durban System', based upon the Native Locations Act of 1904 which provided for compulsory residence in urban locations, and upon the Native Beer Act of 1908 which allowed a municipal trading monopoly in the sale of beer to a captive market. Beer revenues dramatically changed the picture, and after 1910 emerged a comprehensive, paternalistic administration tending to restrain the Bantu industrial population to barracks and compounds and later to residential locations built with beer money. As the 1920's commenced, widespread interest in the Durban system accompanied preparations for Union-wide legislation in the face of mass industrial urbanisation during and after the Great War, and essential features of the Durban system were thus incorporated into the Natives (Urban Areas) Act, which placed the Union Government in ultimate control - so far as legal institutions and political instruments might achieve control - of the destinies of its urban communities.

An important example of developments central to the evolution of urban policy was the inception of the 'togt' or day labour system, which brought Theophilus Shepstone, the Natal Secretary for Native Affairs, into the urban arena in 1873. Responding to appeals for action from Durban and Pietermaritzburg, Shepstone proposed to regulate the influx of natives flocking to the towns for job-work or day-labour, and to check their demands for higher wages. It was felt that this freedom discouraged orderly monthly service at low wages and threatened to add enormously to the 'floating' urban native population. 'The only excuse natives had', Shepstone said, 'to be in town at all was the convenience of the burgesses'. These regulations contained the essence of influx control based upon a pass system. Work-seekers had five days' grace and must register, pay a fee, wear a numbered badge to work in town, and must accept work at a 'minimum' wage set by proclamation. Shepstone's argument revealed the interaction of urban policy with the great triad of native policy in Natal: the search for security, the 'Shepstone system' of segregation in rural reserves, and the supply of labour.

'The object of these regulations (he said) is to check several growing evils ... liberty that is becoming licentious and injurious to all in the towns ...; the ... communication to the surrounding native tribes of vicious impressions and ideas detrimental to their effective government; combination to exact from ... employers higher wages than as a rule the service is worth; and direct discouragement of the natural and desirable relation of master and servant'¹).

Thus appeared an awareness that urbanisation was a menace to the idea of 'two Natal's' - one for the Black man in his natural sphere, one for the White man in his.

The togt system and the revenue fund established with its pass receipts was the tenuous but positive beginning of urban native administration in Durban. It offered a channel for co-ordinating various elements such as vagrancy laws, pass laws, and housing schemes. Over the next thirty years the system was elaborated and extended in

1) Durban *Mayor's Minute* for 1873. See also 'Togt Regulations', *Laws Relating to the Borough of Durban 1903*, Municipality of Durban, pp. 132-140.

an effort to control all Africans in the town. Serious agitation in the mid-1880's against the so-called native 'social pest' resulted in a general registration law applicable to all urban non-Europeans and linked to the togt system. A succession of invariably abortive location schemes sought to absorb the influx of natives and to remove the mushrooming Indian population from the town's centre. But the togt system and its associated methods proved incapable of achieving the results expected, and before the end of the century had demonstrably failed to keep pace with the growth of the population it had purported to control. The complaint was increasingly heard that the authorities were unable to *compel* either burgesses, businesses or the natives to comply with its programmes, or to finance them adequately. The significant developments of the new century would be directed toward those ends.

Despite their inefficacy these early efforts were seriously undertaken and often wide-ranging in conception. The history which details them must account for their failure as well as indicate their paternity of subsequent developments. In approaching this task a number of themes emerge, such as:

1. Effect of the municipal and colonial constitutions.
2. Legal status of the people.
3. Commitment to economic laissez-faire.
4. Imperial policy of trusteeship and legislative review.
5. Administrative capabilities and limitations.
6. Dual legal systems - Native Law and the European common and statute law.
7. Municipal-Government relations: e.g. jurisdictional rivalries.
8. Finance and fiscal policy.
9. Planning concepts.
10. Responsible government, influence of the electorate.
11. Public health - the 'Sanitation Syndrome'.

The demographic growth of cities everywhere in the nineteenth century left them to face conditions of extreme poverty, demoralisation and disorder, with inadequate institutions and inchoate social policies. Durban coped with an added dimension in that practically the whole urban labouring class and a substantial section of the petit bourgeoisie - half of the population and more - were culturally and ethnically alien, having no political voice and little share in the fruits of its growth and maintenance. The municipal response was determined not only by the attitudes of its citizens but by its political constitution. The administrative functions and powers of municipal government had not been conceived as instruments of social service and construction. The municipal laws identified the preservation of public health and the exercise of police powers as prominent functions of the municipal corporation, although they gave it little real power to effect them. Also because of the nature of the urban poor, problems of public health and sanitation, overcrowding and slums, public order and security, were perceived in terms of racial differences. Conversely, it is remarkable to observe the universal imagery of infection and disease in which questions of race were conceived and discussed. The 'Sanitation Syndrome' reflected true necessities of urban growth, but it also helped to fix the logical direction of minds and emotions upon a rationale of quarantine to eliminate racial 'infections' from the social body. By the 1890's public health authorities were exceptionally influential in creating policy at all levels of government.

The failure of policy rested often upon administrative incapacity due to legal immunities and constitutional safeguards protecting the subjects of government from arbitrary powers. In the case of free Indians their status as British subjects checked exasperated efforts of the municipality to remove them from burgess rolls, to prevent property transactions, to deny residence and trade by means of the building and public health by-laws, and to apply vagrancy and registration laws.

Likewise, the inviolability of the European citizenry and their attitudes toward the law hamstrung policies aimed at non-European sections of the community. Thus the togt and registration laws could not be enforced as long as European employers ignored their injunctions and the government's policing apparatus remained limited and haphazard. The exclusive concern of employers with their own interests led them to desire to control their servants and employees free from obligations to any public authority or standards of social responsibility. An example was the collapse of a municipal togt barracks and compound scheme in 1894, when a survey asking for support and token subscriptions for housing their employees was completely ignored by 105, rejected explicitly by 48, and greeted with indifference by the remaining 16 of the 169 Durban mercantile firms approached.¹⁾

The existence of separate legal systems further bedevilled attempts to establish orderly procedures and controls, especially under the togt regulations which were passed as a proclamation under Native Law by the Governor acting as Supreme Chief. Although it freed the authorities from the need to submit class legislation to the home government, it also meant that there was no way to hold Europeans to an observance of measures that required their co-operation. Above all, there was no definition of a contractual obligation between employer and employee since each party was governed by a different legal system.

Municipal-government relations were an area of perpetual conflict, sometimes concerning jurisdiction over and use of government 'reserves' for port facilities and war and admiralty purposes, and sometimes over government's determination to manage its native and Indian workers within those reserves without municipal surveillance. Also government retained residual powers of review over local by-laws and their administration which involved frequent confrontations, particularly over fiscal responsibilities. Important to the entire scene was the imperial injunction enshrined in the Natal Charter against 'class legislation' distinguishing among Her Majesty's subjects. The interplay among municipality, colonial and imperial governments on the subject of non-European treatment before, approaching, and after the grant of responsible government to Natal in 1893 is vital to an analysis of urban affairs in their wider context.

The persistent failure to plan adequately for population growth and spatial development is of course a broad highway for depressing study. In the case of locations and other housing schemes, the inability to mount programmes that even met current needs, let alone future growth, was in large part a consequence of prevailing views of finance in native affairs. No government could expect to tap the general revenue for such purposes and escape the indignation of its electorate.

1) Durban Corporation Letter Book (Received) (1894): Vol. 101, No. 12,573, Inspector of Nuisances to Chairman, Sanitary Committee, 8 November. See also *Natal Mercury*, 29 November, 1894.

Finally, on the side of the municipality it must be shown how many of its objectives were legitimate and necessary ones judged by any standard; abatement of health dangers, slum clearance and housing, the rational spatial and functional development of the community, taxing and licensing for revenue, and the maintenance of the public peace. But in colonial society the pursuit of class interests, class advantage and the exercise of prejudices concerning race, culture and colour were inextricably enmeshed with those objectives. The confusion of the former with the latter is the crux of the story. And in the last analysis the urban history of South Africa must consider the question whether the urbanisation of non-Europeans, the amelioration of their conditions of life, and ultimately the provision of mass housing, must inevitably have been linked with the evolution and the practice of segregation and separate development.

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THE BIRTH AND GROWTH OF SALISBURY, RHODESIA

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In 1888, the emissaries of Cecil John Rhodes obtained a concession from Lobengula, King of the Matabele, giving them charge over all minerals and metals in his land and the right to exclude other people seeking them. Within two years the Pioneer Column, composed of a Pioneer Corps and a force of the British South Africa Company's Police, set off to establish a settlement in Mashonaland to the north-east of Matabeleland. The Pioneer Corps was to make the road, transport supplies and, on arrival, become the first settlers in the country; the Police force was to guard the expedition and keep order in Mashonaland.

When the Column set out its venue was not certain, though there was a reference to Mount Hampden.

When Mount Hampden was sighted the Commanding Officer, Colonel Pennefather and his staff, rode northwards to reconnoitre. They crossed the Makabusi, a strongly flowing stream, but found the river at the foot of Mount Hampden dry. They decided the Makabusi and the valley to the north of it would be a better site for the settlement. In the valley was a vlel (a bog) whose presence was to cause considerable difficulties for a number of years.

On September 12th 1890, the Column, leaving a small kopje on its left, proceeded northwards, turned eastwards to skirt the vlel and camped on the higher ground. The site was declared to be Salisbury and a fort and administrative offices were erected.

During the march of the Column the only person who concerned himself about what was to happen to the settlement *after* it had been made was Colquhoun. He wrote many requisitions and letters asking Rutherford Harris, the Secretary of the British South Africa Company in Kimberley, to forward food, medical supplies and tools, and for the appointment of a surveyor. Colquhoun saw the difficulties of crossing rivers and asked for wire-ropes and pontoons. The very success of the Column's march made Harris, who had been described by Rhodes' representative, Dr. Jameson, as 'meaning well but really a muddling ass', believe that Colquhoun's demands were unrealistic, and so nothing was sent.

When the fort had been completed the Pioneers were disbanded. The Corps had been a well organised force under military discipline. Now its members were individuals and difficulties arose. Most of them were too keen to get to the gold-fields but some, who realised more money could be made by staying, were immediately faced with the problem of cutting timber and digging holes.

When Colquhoun, who had left the Column to obtain a concession from another chief, reached Salisbury, a month after the settlement had been made, he found flimsy wattle and daub huts put up along the foot of the Kopje, as far away as possible from the administrative offices. So there were two building areas separated by the vlel.

Along the road which the Pioneers had cut, many wagons set off for Salisbury. When the rains came the road turned into a river of mud in which the oxen died exhausted, while their owners, trapped between

swollen rivers, died also.

Without food, attacked by malarial fever, the first settlers suffered severely during the wet season of 1890-91. Then as the roads dried out a trickle of wagons bringing food and tools began to arrive. The settlers wanted permanent homes and Colquhoun called on his nephew, an American surveyor, Ross, to lay out the township.

The rains had increased the vlei and the settlers' activities had already started erosion. Ross declared the vlei unbuildable and sub-divided into plots an area, called Causeway, to the north and east of it. Colquhoun wished to transfer those who had built at the Kopje to the new stands. There was opposition by the merchants and so this area was also sub-divided. At the kopje were the stores and hotels, at the Causeway the administrative offices.

By June the worst was over. Food, tools, clothing and medical supplies were available. The infant Salisbury, despite stupidity and incompetence had managed to survive.

Rhodes visited the settlement in October 1891, and agreed to a partly elected and partly nominated Sanitary Board empowered to collect and administer funds. A sanitary pail system was started, a cemetery marked out, regulations regarding health introduced, and the first attempts made to drain the vlei. The Makabusi had already become polluted and the sinking of wells began.

In 1892, the British South Africa Company, often called the Chartered Company, permitted the entry of women. There was an immediate improvement in dress and behaviour, followed by better health as the women looked after their menfolk.

In Bulawayo, Lobengula still held sway. The settlers looked enviously towards Matabeleland hoping they would find there gold-reefs not present in Mashonaland. They were apprehensive, too, of the Matabele whose customs were generally not acceptable to Europeans. At the end of 1893, a small force defeated Lobengula, and Matabeleland was added to the Chartered Company's dominion.

The effect on Salisbury was catastrophic. Many of those who had left did not return. Others rapidly made their way to Bulawayo. Houses were deserted and the owners no longer paid their rates. The town was overrun by dogs. The lamps were unlit, grass grew in the streets and roads were unrepaired. Requests for improvements made by the Sanitary Board were refused, and the acceptance of by-laws held up pending the return from Bulawayo of Dr. Jameson, the Administrator of the newly-named Rhodesia. Salisbury's position as administrative centre was thought to be in jeopardy. The Chairman of the Chamber of Commerce bluntly stated, 'From our Government we expect little, and get less'.

Bulawayo did not prove the eldorado expected and a drift back to Salisbury began, while Rhodes declared that the town would remain the capital and made a grant towards the draining of the vlei.

The first industry, a steam sawmill, was set up. The sawn timbers enabled wider and better buildings to be erected and merchants replaced thatch with iron roofs. By the early part of 1895 Salisbury began to feel that it had turned its back on the bad times.

Then came the slump on the Johannesburg Stock Exchange in the latter months of 1895, followed by the disastrous Jameson Raid, the Matabele and Mashona rebellions and rinderpest. When the Mashonaland rebellion broke out in 1896 the Salisbury gaol became a fortified laager. Food supplies were cut off by rebellious chiefs and it was not until October 1897 that peace came. Salisbury began to take heart again and was encouraged by Earl Grey, the new Administrator, and William Milton, his secretary. Grey believed in the development of agriculture, and Salisbury with advantages of soil and climate began to progress.

Milton, Grey's successor, replaced the Sanitary Board by an elected Council. Municipal officers were appointed. The time for these appointments was not propitious, for there were many unemployed and they were found work converting the upper part of the vlei into a park.

Salisbury's second industry started, when, after the water in the well in the Market Square had been tested and 'found eminently suitable for the manufacture of lager-beer', a brewery was erected.

The most important factor in the development of the town was the arrival of the railway early in 1899. The site for the station was equidistant from the commercial Kopje and the administrative Causeway, and near to the junction of the Makabusi and its tributary. The previously declared unbuildable area was developed, as store-keepers on the Kopje sought stands nearer the goods yards. Reservations were made for municipal buildings in the vlei area and the British South Africa Company selected plots for future Government buildings. It became fashionable for merchants and civil servants to live in the northern avenues of the town, and, as they moved away, the Kopje area began to decline.

When in 1898, Rhodesia was granted its first Council, a half-completed hotel was converted into a Legislative Assembly. Salisbury received an influx of civil servants who brought their wives and children with them, and the question of education arose. It was estimated that there were seventy children and an undenominational school was provided. A Municipal Constabulary, paid for by the Company, was established and police stations were opened in the town.

Near boom conditions, becoming more pronounced when the Anglo-Boer War broke out in October, 1899, developed. The railway south of Bulawayo was closed and the country became dependent on Salisbury and the east-coastline to Beira. For the first six months of the war the town revelled in its position as supplier to the nation. Then, as men left for military service and the railway to the south re-opened, there was general stagnation. The European population was now nearing twelve hundred, but there was already twice this number of Africans.

As the war drew to a close in 1902 there was a more hopeful feeling in Salisbury. A new Town Engineer was appointed from Durban to fill the post, unoccupied for two years. He suggested french drains for bath-water disposal, a macadamised road between the Kopje and Causeway; the construction of storm channels and the compulsion of owners to provide drains for the roof-water to these storm channels.

The Mayor and Council caught his enthusiasm. For the first time the Council had a credit balance, £300.7s.4d. A loan of £10,000 was raised from the Standard Bank. The first item was a new Town House costing £6,000, and the Mayor jubilantly declared that Salisbury was fast becoming an important financial centre.

Before his second year of office expired however, the Mayor had gone overseas leaving the Town Clerk to prepare the Mayoral Minute, in which he advised that there was a debit of over £5,000.

The Town Engineer resigned, the estimates of expenditure were cancelled and fresh ones made. European staff and Africans were dismissed and the posts of some officers amalgamated. The position worsened and relief works for Europeans were opened. They were paid 5/- a day and the Government provided them with quarters, blankets and cooking utensils. A street tree-planting scheme using jacaranda and flamboyant saplings grown from seed imported from the Durban Botanic Gardens was started.

An outbreak of East Coast Fever compelled the farmers to keep their cattle on their farms and to use them for cultivating their lands. Mashonaland began to develop into a successful maize and

tobacco-growing country. The Chartered Company allowed small workers in gold mines to pay royalties instead of floating companies. These agricultural and mining developments affected Salisbury. Some light industries, the repair of agricultural implements and mining machinery, harness-making, and maize-milling were established near the railway. In 1908 new buildings valued at nearly £18,000 were erected.

But the Medical Officer of Health fulminated against insanitary conditions. 'The dust', he stated, 'when mixed up with the dessicated excreta of natives and animals, is responsible for diseases. A Native is similar to a White man and a latrine should be provided for him on every occupied stand at whatever cost.'

Even as early as 1900 there were those who wished to avoid the urban life of Salisbury. Owners of farms on the edge of the Commonage sold sections as plots while one farm was wholly sub-divided and rapidly became a popular suburb.

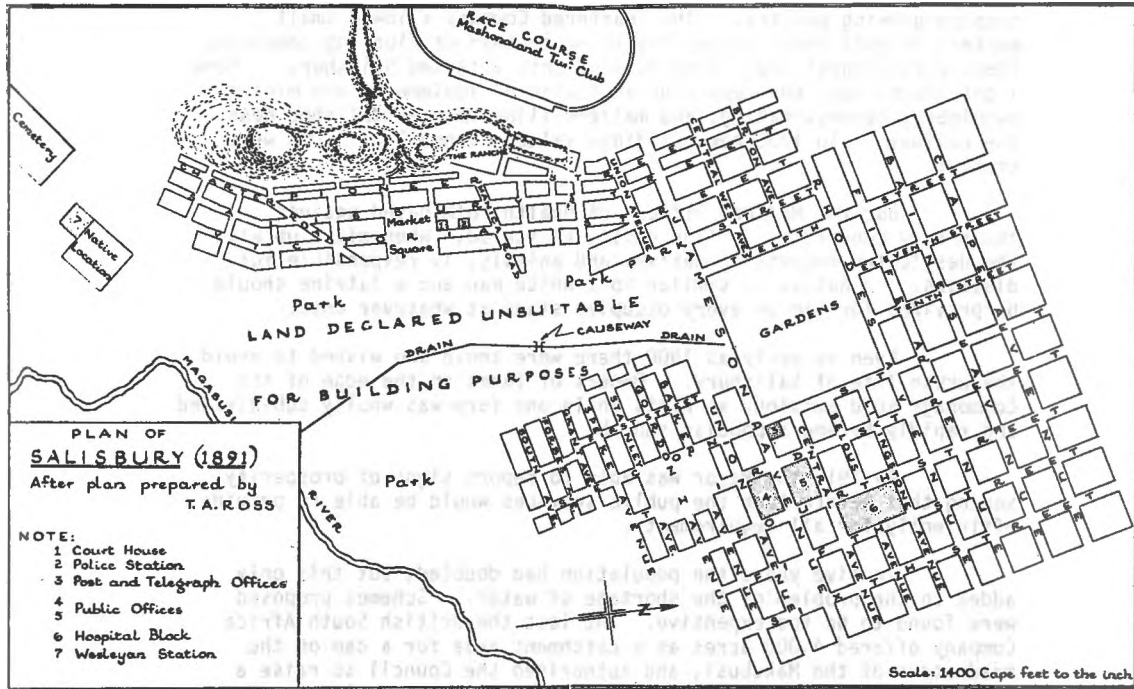
By 1910 the Mayor was able to report signs of prosperity, saying that before long the public services would be able to provide efficiently for all requirements.

In five years the population had doubled, but this only added to the problem of the shortage of water. Schemes proposed were found to be too expensive. At last the British South Africa Company offered 4,000 acres as a catchment area for a dam on the headwaters of the Makabusi, and authorised the Council to raise a loan for £120,000 for roads, water and electricity services. The year 1913 was a great one for Salisbury. The Cleveland Dam was constructed and electric light, produced at first by two mobile locomotive-type steam boilers, became available.

The First World War checked development and created so much unemployment that the Council provided work, making side-walks and cleaning unoccupied stands. By 1917, there was the appearance of the automobile which was to revolutionise not only Salisbury, but the whole world. By-laws demanding a certificate of competency of drivers and a speed limit of fifteen miles per hour, were laid down.

It took the town some years to recover from the war and within a ten year period up to 1924 the population had increased by only 120. Then came a sudden upsurge; new settlers, ex-officers and younger sons were arriving, and there was much agricultural and mining activity. Tobacco areas spread in a rough circle around Salisbury. Handsome profits were made, and, with the imperial preference, the industry expanded until about one European in five depended directly on tobacco. The grant of responsible government to Rhodesia in 1923 gave confidence and Salisbury, the capital, benefited. The population increased by 50%, cars were bought, social activities increased. An extensive area still farther north was sub-divided while stands in the central area increased greatly in value. Multi-storeyed buildings could not be erected because of the bucket system of sewerage. A water-borne system was dependent on a better water supply, so a new dam was built on the Hunyani. The effect was momentous. The value of building plans shot up to well over a quarter of a million pounds (£) each year. A great demand for industrial sites arose and a large area in the south was made available. More than a fifth of the population of Salisbury now lived in the suburbs and with the greater use of motor-cars, the sprawl in all directions increased. The use of motor-vehicles affected the commercial area of the town, for businesses no longer had to be near the railway. New shops and office blocks were built away from the line and the area near it declined and Indian traders moved in. Aeroplane arrivals heralded a fresh transport development, and an aerodrome reservation of two hundred acres and the provision of facilities followed.

ILLUSTRATIONS OF SALISBURY



From 'A SCANTLING OF TIME' The Story of Salisbury, Rhodesia 1890-1900
by G.H. TANSER.

PLAN OF SALISBURY, 1891
(From 'A Scantling of Time' : The Story of
Salisbury, Rhodesia, 1890-1900, by G.H. Tanser)



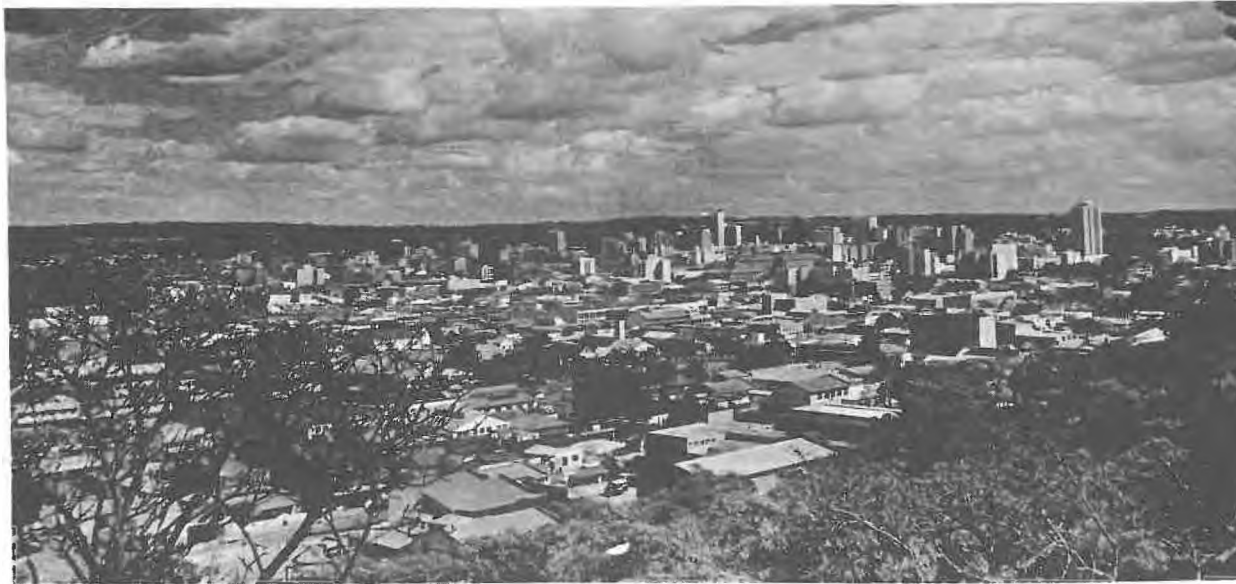
SALISBURY, 1898
(by Courtesy of National Archives, Salisbury)



SALISBURY, 1910
(by Courtesy, National Archives, Salisbury)



SALISBURY, circa 1935
(by Courtesy, National Archives, Salisbury)



SALISBURY, 1965
(Photo : Ministry of Information, Rhodesia)

When the world slump came, the prices of tobacco, maize and cattle, on which Salisbury's economy was based, fell. Once again work was found for the unemployed. Maintenance work on Municipal properties, the fencing of the aerodrome, the laying of strips on the Commonage roads, and the extensions for water-borne sewerage were undertaken by Europeans. The population remained static for several years while the value of building plans dropped from two hundred and ninety thousand pounds to seventy thousand. It took several years before the products of the farms, both in quality and quantity, reached the level before the slump.

By 1937 conditions had improved again, and the prosperity of the farmers led to the development of many light industries with a demand for industrial plots, while half the building plans were for factories. This brought into the country immigrants of the artisan class who desired a cheaper form of housing, and this was provided in a new area to the east of the town. The water-borne sewerage system enabled higher buildings, replacing the one-storey offices, to be erected.

As the second World War became imminent it was realised that the country would have to be, to a great extent, self-sufficient. Salisbury's industries based on the country's raw materials flourished. Rhodesian-made oil, soap, candles, washing and polishing materials were manufactured. Tiles and roofing of asbestos and cement were made; houses were furnished with locally-made furniture.

When war came, Southern Rhodesia, with its cloudless skies and remoteness from enemy interference, offered training facilities for the Empire Air Training Scheme, and Salisbury was ringed with air-training schools. At its peak there were probably five to six thousand airmen. Some of them brought with them their wives and families. In addition, there were military and internee camps. The war activities converted a village into a town. Despite building controls, new areas were developed, and the northern area previously occupied by single-storey residences, became bespattered with blocks of flats.

The return of ex-servicemen was followed by an influx of immigrants desirous of escaping from war-torn Europe. Though immigration was controlled by a selection board, the number of newcomers in 1948 was over seventeen thousand. Estate agents were besieged by applicants, while arrivals crowded into garages or tents just to get a roof over their heads.

Salisbury's older residents, while grumbling at the immigrant pressure on housing and other public services, made money from rising land values. The Council, though severely handicapped by shortages of staff, labour, materials, equipment and office accommodation, provided temporary constructions of pise-de-terre houses, made of compressed earth with a skin of cement, and thatched roofs. Pre-fabricated houses and even pole and dagga huts, erected at the rate of two a day, were accepted. Bricks, asbestos and corrugated iron, all in short supply, were used for permanent buildings.

This tremendous immigration led to a demand for industrial and residential stands. Water and power shortages occurred. The European activities engendered development of the African areas. Hostels were built to house the unmarried Africans while five hundred blocks of semi-detached houses were provided for married Africans.

The needs of Salisbury led to the development of the farming areas around it and the conversion of raw materials into food and other products, started during the war, was extended. The inflow of families necessitated additional schools, hospital accommodation, and there was rationing of water and load-shedding of electricity.

An increased water supply was essential and the Lake McIlwaine project to dam the Hunyani River was started. The Municipality entered into the field of European housing and built a large block of flats.

The Council was able to consolidate its position for two years before the effects of the political decision to form a Federation of Southern and Northern Rhodesia and Nyasaland began to be felt. Salisbury became the administrative centre of the new state and retained its position as capital of Southern Rhodesia. The Kariba Dam project was given preference over the Kafue scheme.

These three factors combined to change the town into a city. The large copper mining companies from Northern Rhodesia and commercial houses from other Rhodesian centres moved into Salisbury; industrialists wanted land for their factories; civil servants in the two Governments sought homes; the University College was granted a site by the Municipality; schools, sports, entertainment and cultural activities were affected by the up-surge of development.

At first six to seven storey buildings were put up, but later, the Northern Rhodesia copper companies erected buildings of fourteen to fifteen storeys. Hotels were affected and vertical extensions provided up-to-date accommodation. In the short space of six years the face of the central area of Salisbury changed completely. There was further expansion in the residential and industrial areas. Modern machinery was used to provide services and local materials and equipment were readily available. A low-cost housing area was provided close to the industrial area. The completion of Lake McIlwaine ensured that there would be an ample water supply while the city's Electricity Undertaking became the fifth largest in Southern Africa.

The Federation created a common market of which Salisbury was the centre. Financial confidence stimulated economic expansion and Salisbury revelled in the benefits which it brought. The city became ringed with suburbs governed by their own Town Management Boards. In the Municipal area building plans soared in one year from five to ten million and remained at this figure for three years. As the city became more and more industrialised there was a phenomenal expansion in every direction.

A disturbing factor of this development was the increase in the number of motor vehicles, necessitating the installation of parking meters, but flats, and office blocks of insurance companies, building societies and banks were indicative of the wealth which the Federation had brought into the capital.

After five years of Federation the value of building plans began to fall, though there was still considerable activity. By 1960 the Municipal valuation of property exceeded £103,000,000, while the income from assessment rates passed the million mark.

As the possibility of the Federation's break-up arose, the tempo of development slowed down appreciably and quickly. The value of building plans showed a sharp decline until in 1963, the year of the break-up of the Federation, the sum was just over a million pounds, the lowest sum since 1946. Ambitious schemes such as the building of a civic auditorium were abandoned and for the first time in its history the European population of the city showed a decrease.

Once, however, Rhodesia was on its own, confidence began to return. There was an increase of population and the last figure of building plans was just short of three million.

The two immediate questions which the City of Salisbury has to face are the solution of the parking problem and the housing of Africans.

Salisbury's growth in the comparatively short period of 75 years into a lovely city with a Municipal valuation of over one hundred and forty-two million pounds is a striking example of what can be achieved by men and women of ambition, courage and goodwill.

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FACTORS AFFECTING THE GROWTH AND FORM OF
PORT ELIZABETH, 1820-1963 : A STUDY IN
HISTORICAL URBAN GEOGRAPHY

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During the last two decades an increasing number of geographers have come to focus their attention on the study of urban areas and the problems of cities. Today the field of urban geography is very wide indeed and is composed of a number of highly specialised sections each advancing its frontiers by active research. The nature of research in urban geography since 1948, or thereabouts, has been characterised by a relative decline in studies of urban morphology and static analysis more than counter-balanced by the emphasis now given to functional and dynamic analyses of the city. While this trend is welcomed by all progressive geographers it appears unlikely that studies of the static and morphological aspects will be discarded altogether as such studies frequently provide the backdrop and necessary perspective for the more dynamic analyses which now characterise urban geography. The present paper is essentially morphological and is concerned with tracing the effects of three groups of factors - physical features, historical events and increased mobility of the population - on the growth and urban form of Port Elizabeth between 1820 and 1963¹).

Early Developments in Algoa Bay, 1486-1820.

The first recorded landing on the shores of Algoa Bay was made by Bartholomew Diaz in 1486 in the vicinity of Kwaaioek. Apart from occasional shipwrecks there were no other landings and no significant developments in the immediate vicinity of the Bay until the late eighteenth century. By then the Eastern Cape had a dispersed farming population. With the seat of administration at Graaff-Reinet, approximately 170 miles away, little assistance was forthcoming for the inhabitants in the environs of Algoa Bay during Hottentot and Bantu raids. In order to provide a measure of protection a number of small forts were established, amongst them Star Fort erected in 1798 at Cradock Place some four miles inland from the site of the present central business district of Port Elizabeth. This fort was 'serviced' from Graaff-Reinet, which in turn depended upon an overland route from Cape Town (Figure 1).

Early in 1799 Star Fort was attacked by the Bantu. Other disturbances farther inland, and the fear that the French might be contemplating an invasion of the Eastern Cape, finally led the British to investigate the feasibility of establishing a landing place on the inhospitable shores of Algoa Bay. This landing place was to serve a permanent military post which could provide the protection needed from Bantu raids in this area, and at the same time was to prevent possible

1) Except where otherwise stated factual material, referring to the history of Port Elizabeth is drawn from Redgrave, J.J. (1947): *Port Elizabeth in Bygone Days*, Rustica Press, Wynberg. Redgrave's work is based on data and sources culled from archival material and collections of private papers. It is considered authoritative. However, the writer accepts full responsibility for the geographical interpretations that are made in this paper.

foreign landings. The port was sorely needed because of the distance from Cape Town.

It appears that the choice of a landing place lay between two possible sites along the wide open sweep of Algoa Bay: the steep, sandy left bank overlooking the mouth of the Zwartkops River, and the steep-rising rock cliffs overlooking the raised beach on the north side of the mouth of the Baakens River. Of these an expedition in 1752 had already reported that the Zwartkops site was too exposed to the southeast winds to be of any value as a harbour. Furthermore the river banks did not provide good defence points, and the water was salty for some distance upstream. At the Baakens River mouth, on the other hand, there were two fresh water springs, a site on the cliffs where an easily defended fort could be constructed overlooking it, and furthermore, a gap in the line of heavy breakers that would allow surf boats easier access than anywhere else along the Bay. Consequently this site was chosen. By late 1799 a permanent stone fort (Fort Frederick) commanding the landing place and the main fresh water supply had been completed. The garrison of some 300 men were stationed in the vicinity of the fort and sundry civilians, numbering some 50 persons, formed the early settlement later to become known as Port Elizabeth.

After the erection of Fort Frederick but prior to the arrival of the 1820 Settlers the small number of additional buildings which were constructed were mainly associated with the military. A map (Figure 2) based on a survey in 1820 shows the location of buildings at the time¹⁾. The position of Main Street is clearly discernible. Whether its location was pre-determined by a track leading along the shore to the fresh water at the landing place that was in existence before the erection of Fort Frederick is not known. Such a track is clearly shown on a military sketch map published in 1818²⁾ following the present line of Main Street.

The street plan of the settlement as drawn up by Swan (Figure 2) in 1820, which with few modifications persists today, shows the effects of both the physical nature of the site - a raised beach backed by steep cliffs - and the location of Fort Frederick. As the fort was to provide some protection to the settlement, which in turn required easy access to the fresh springs, it was necessary that it too should be located on the northern side of the river on the raised beach. Swan also recognised and clearly demarcated the irregular shaped portions of land in the vicinity of what was to become Market Square. At that time they were occupied by sundry mud huts. These same irregular erven persist today and are a cause, at least in part, of the traffic chaos and congestion around the City Hall³⁾.

Founding and Growth of Port Elizabeth, 1820-1905.

Central Area: Rapid development of the town marked the period

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- 1) A plan compiled by Lt. Cunliffe-Owen, Royal Engineers, 14th September, 1845. Based on Mr. Swan's survey of Port Elizabeth made in June 1820. (Copy with Port Elizabeth Museum).
 - 2) 'A military sketch of that part of the Colony of Good Hope bordering on the Caffres' (*sic*) by Lt. Wily, 1816, London, 1818. (Copy with Port Elizabeth Museum.)
 - 3) Although some street lines are shown on the hill in the 1820 plan, these were merely indications for future streets around buildings already belonging to members of the military garrison.

immediately following the arrival of the 1820 Settlers¹⁾. This development was aided by the decision to abandon Port Alfred at the Kowie River mouth as a possible port and to concentrate instead on the development of Port Elizabeth in this role²⁾. Therewith an increasing flow of traffic with the interior became focussed on Port Elizabeth, and increasing numbers of ox wagons rumbled along the main street that connected the landing place with the roads leading inland, to Grahamstown and other districts to the north (Figure 3).

Shortly after the arrival of the Settlers, the settlement was named Port Elizabeth in memory of the wife of Sir Rufane Donkin, the acting Governor of the Cape. At the same time a large piece of ground on the crown of Castle Hill (hereafter referred to as the Hill) was proclaimed a reserve - the Donkin Reserve - which has ever since been maintained as an open space.

With the resumption of the Kaffir Wars the conveyance of troops and stores en route to the frontier brought large numbers of transients to the town, and provided the incentive for a number of merchants to open large stores and warehouses. Main Street and its environs now took on a distinctly commercial aspect, although some private residences continued to front on it.

By 1849 the town had developed into a sizeable settlement. From the map (Figure 4), compiled from a survey in 1849³⁾, it is clear that the early development took place in what is today known as the Central Area. Only at a later date did development extend southward across the river to South End and northwards to North End. Even at this early date the strong attraction of Main Street is obvious. Most of the public buildings such as the Assembly Hall, Post Office, Gaol, Courthouse, Exchange, Library and later the City Hall were located on and around the Market Square - the area formerly occupied by such buildings as the Commissariat and the Residency. The main commercial shopping area was along Jetty Street and northwards along Main Street.

It is apparent from the map that at this date very little development had taken place on the Hill where only a few private residences had been erected. The Hill in itself was not unattractive, but the absence of fresh water deterred potential residents until after 1876 when piped water supplies became available.

By 1845 the problem of supplying water to the rapidly growing town, then numbering 3,000 persons, began to affect the direction of its expansion. The main water supply was drawn from wells in three locations: on the Market Square, half way up Donkin Street, and at the foot of Military Road (Figure 4). A fourth well, not shown on the map, was on the banks of the Baakens River. Being little more than shallow pools that filled with each downpour of rain these wells provided only very limited supply. They were later improved by installing pumps and by deepening. To supplement these supplies small storage tanks were built in some of the kloofs (ravines) cutting back into the cliff line -

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- 1) Over a period of two and a half months a total of 2,659 settlers, including women and children, were landed; the majority of whom were destined for the interior. From Theal, George M. (1964): *A History of South Africa*, Vol.5, reproduced 'Star' edition, Struik, Cape Town, p.353.
 - 2) Ibid., p.360.
 - 3) *A Map of Port Elizabeth*, from a survey by R. Essenhigh, 1849. (Copy with the Port Elizabeth Museum.)

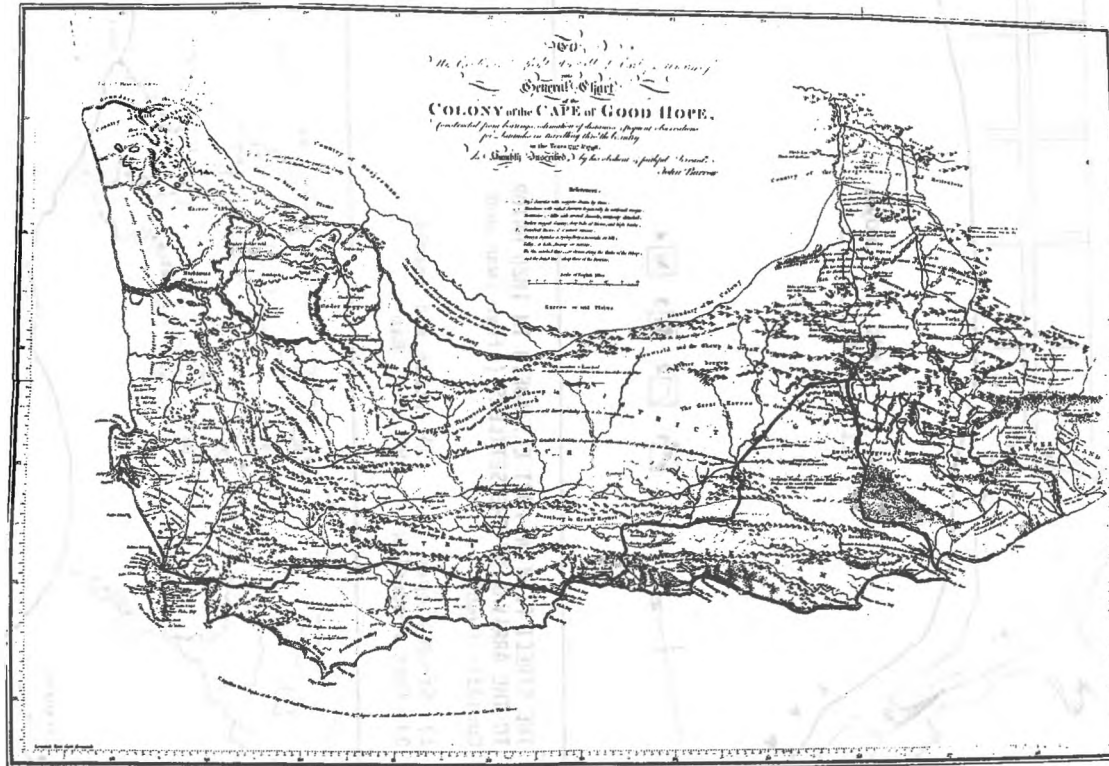


FIGURE 1 CAPE PROVINCE, 1798

The Overland route between Cape Town and Port Elizabeth

(Source: Barrow, J. (1801): *Travels into the Interior of Southern Africa*, London.)

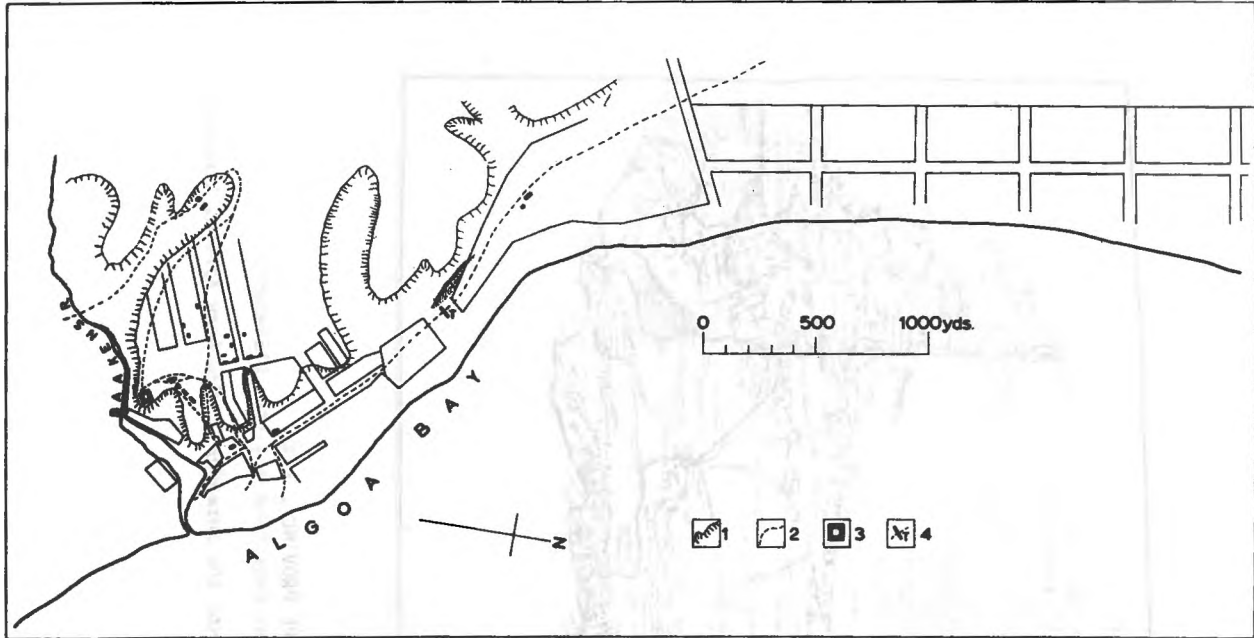


FIGURE 2 THE STREET PLAN OF PORT ELIZABETH IN 1820 PRIOR TO THE ARRIVAL OF THE SETTLERS (after Swan and Cur liffe Owen)

- 1) Steep Slopes
- 2) Roads and Tracks
- 3) Fort Frederick
- 4) Toll Bar

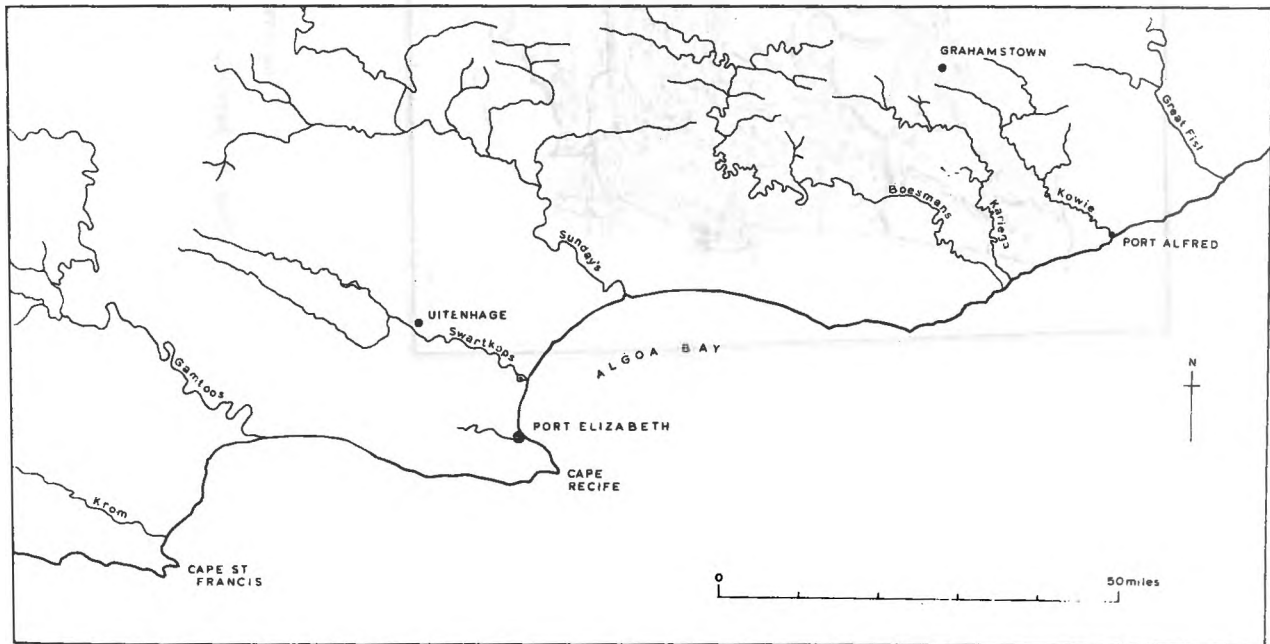


FIGURE 3 THE IMMEDIATE HINTERLAND OF ALGOA BAY

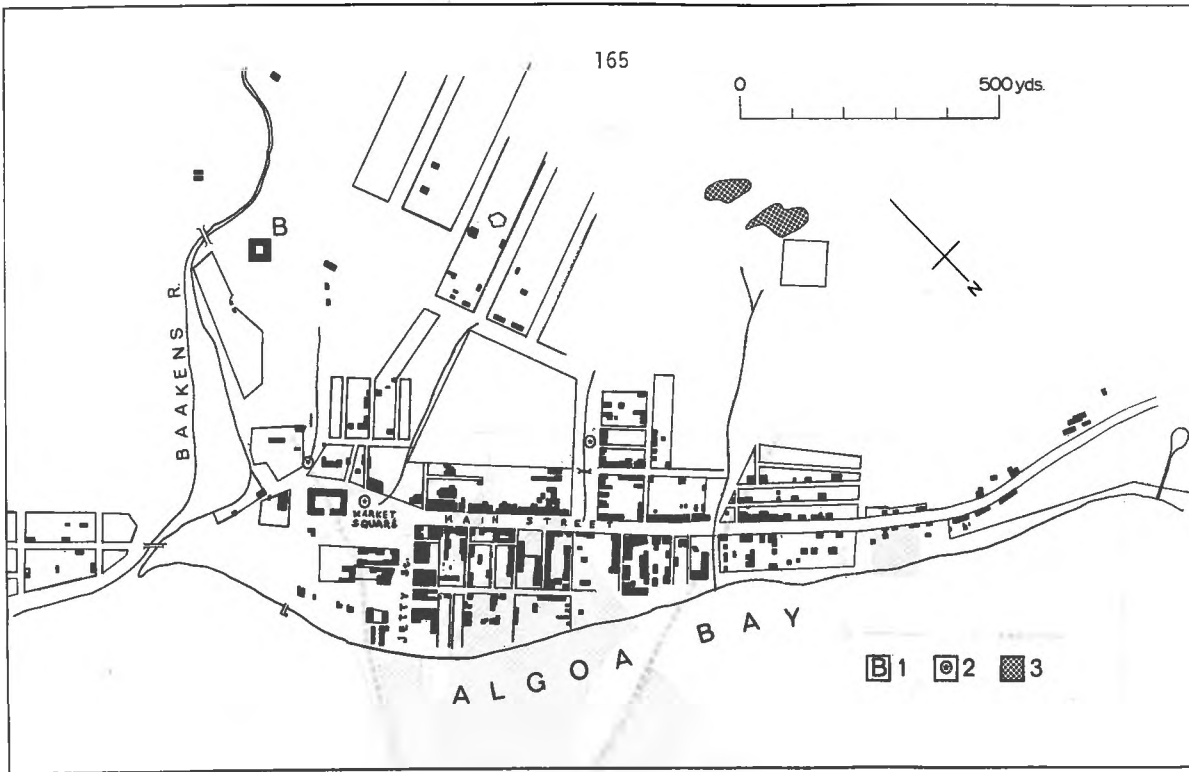


FIGURE 4 PORT ELIZABETH, 1849 (after R. Essenhigh)

- 1) Fort Frederick
- 2) Fresh Water Wells
- 3) Bantu Village

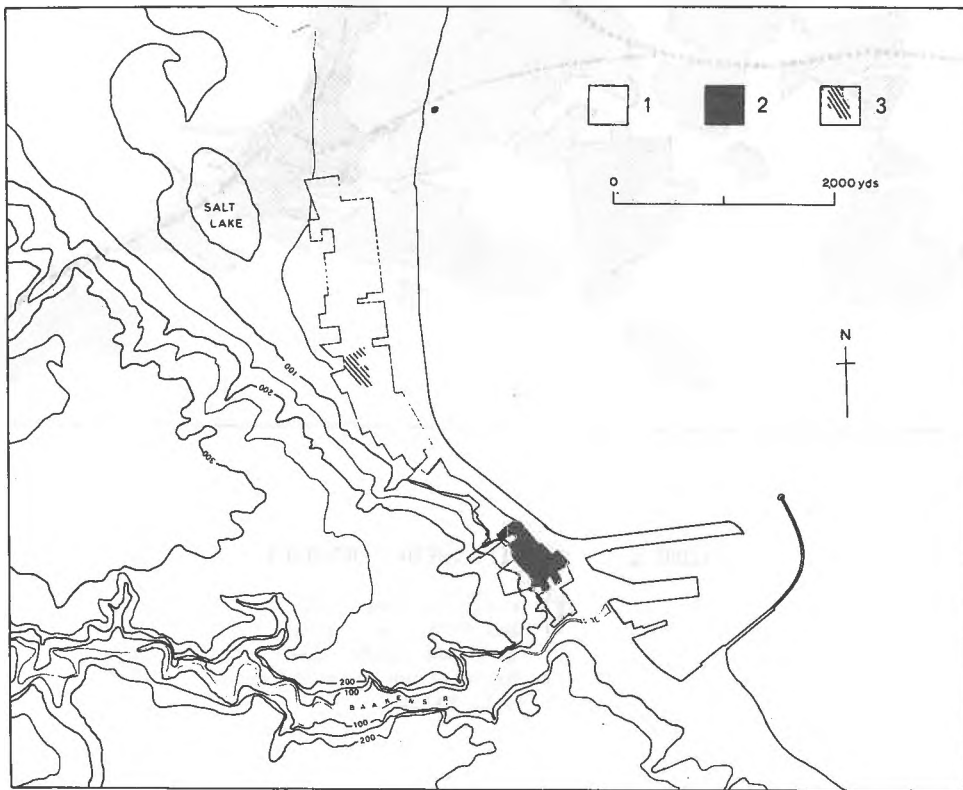


FIGURE 5 PHYSICAL SETTING OF MAIN STREET

- 1) Present zone of mixed Commercial, Industrial and Residential land use
- 2) Central Business District
- 3) The outlying Business District of North End



FIGURE 6 PORT ELIZABETH, 1905-1963

- 1) Built-up Area, 1963
- 2) Built-up Area, 1905
- 3) National roads (dual carriageways)
- 4) Major urban arterial roads
- 5) Main Railway Line

kloofs through which main roads such as Mount and Albany Roads were later built. Water was piped down the slope to the houses and stores along Main Street. At a later date a reservoir was constructed in Happy Valley, south of the Baakens River, from which water was piped along Main Street as far as the new gaol. (This lay on the outskirts of the town near the centre of the present business district in North End (Figure 5)). This scheme, like that of the kloof dams, was not entirely satisfactory mainly because of the low gradient and consequent lack of pressure. Neither of these schemes provided any benefit for the Hill, where residents still had to rely upon water collected in tanks from their own roofs.

It was only in 1876, when water was piped from Van Staadens River 30 miles west of Port Elizabeth, that a satisfactory water supply was obtained. Four years later this was supplemented by the Bulk, Palmiet, and Sand River schemes. Water from these schemes was piped to the city and, being led from a higher elevation, it could also be piped to houses on the Hill. This immediately brought about a change in the pattern of city growth.

Before this time expansion of the settlement had been wholly linear - along Main Street - and the hemming in of the developing area between the sea and the cliffs had not been conducive to the emergence of select areas. When piped water became available the Hill, being adjacent to the rapidly developing commercial core of the town, became attractive to the wealthier inhabitants. A high class area now began to emerge there, not in the immediate neighbourhood of the Donkin Reserve an old military area, but farther west beyond Rink Street. There a large piece of ground laid out as a park (St. George's Park) became the focus of a residential area characterised by villas, mansions and fine houses built by the wealthier inhabitants who possessed their own means of conveyance. This high class residential neighbourhood formed the edge of the built-up area in this direction in 1905.

South End: Urban development in the area known as South End lagged behind that of the rest of the town¹). This was probably due to the poor linkage between South End and the business centre of the town. Prior to 1847, when the first narrow footbridge was built, inhabitants had either to wade the Baakens River or to 'hitch a ride' on a passing wagon crossing at the ford. It was not until about 1860, after the original footbridge and its replacement had both been washed away, that a general utility bridge was constructed over the Baakens to provide the first effective linkage between South End and the central area²). This not only stimulated urban growth in South End but also encouraged the development of Humewood farther south on the coast.

In contrast to the development that was taking place towards and in North End (which represented a continuation of urban growth along Main Street), the development of South End and Humewood was discontinuous. These two places were for a long time separated by an open area, with Humewood regarded as an outlying residential area and popular coastal resort while South End was essentially a non-White area characterised by shops and houses of poor quality.

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- 1) A map entitled 'Naval Survey' by Lt. Joseph Dayman assisted by Lt. H.G. Simpson in 1855, shows only sixteen houses in the area known today as South End. (Copy with State Archives, Cape Town.)
 - 2) This bridge was eventually replaced by the present bridge in 1923.

North End: As the town grew, land values began to soar along Main Street between Market Square and Russell Road, forcing out all but retail and other commercial functions. This stimulated development in North End which by 1871 was the most diversified part of Port Elizabeth - an area of houses, shops and industries.

The area between North End and Russell Road was marked by low class housing, disreputable houses and canteens, and was occupied by the lower classes of the Irish and Malay groups of the population. This was the situation in 1870, and the blighted character of the area still tends to persist.

Local Transport: The construction of a railway line between Uitenhage and Port Elizabeth in 1875 provided a popular means of transport between the two places, but the location of the intervening stations was such that the railway did not develop as a suburban transport line. It was not until six years later that an efficient and cheap means of public transport was provided between North End and the central city area. Meanwhile the decision to bring the Uitenhage-Port Elizabeth railway line along the shore, (between the sea and the blocks on the seaward side of Main Street) to the terminus at the corner of Jetty and Strand Streets, cut the town off from the sea).

The first horse-drawn trams were introduced in 1881²⁾ along Main Street from the Market Square to North End. This had the effect of altering the time-distance relationship between North End and the central city area, allowing residents of North End to attend the morning market on the Square and to patronise some of the central shops. However, the limitations of horse traction restricted this line to relatively level ground and it was therefore able to serve only the inhabitants in the environs of Main Street and North End.

When the horse trams were replaced by electric trams in 1897 the line was extended up the Hill, bringing to it benefits that had previously been limited to North End. The provision of public transport up the Hill made the area between the Donkin Reserve and St. George's Park more accessible and must have stimulated the development of mixed middle and upper class housing.

By 1905 the town had taken on the form indicated in Figure 6³⁾. This clearly shows the strong alignment of the town along the Main Street axis. Only two deviations are apparent. One is the 'bulge' inland towards the Hill and St. George's Park, and the other is along Walmer Road in South End. Apart from these small deviations the elongated shape of the built-up area persisted.

Urban Growth 1905-1963.

Figure 6 also shows the development that took place between 1905 and 1963⁴⁾. Urban growth during this period had been away from the original axis of Main Street outwards along the main arterial roads leading from the city in the directions of Cape Town, Uitenhage, and Grahamstown - west, northwest, and north respectively. The sectors

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- 1) Lewcock, R. (1963): *Early Nineteenth Century Architecture in South Africa*, Balkema, Cape Town, p.410.
 - 2) City Tramways, Cape Trams, (1949): *From Horse to Diesel*, Fraser Gill, Cape Town, p.27.
 - 3) Based on a survey by Smythe in 1905. The original is housed in the Port Elizabeth Municipal Engineer's Department.
 - 4) A map entitled 'A City Plan of Port Elizabeth', 1963, prepared by the Port Elizabeth Municipal Engineer's Department.

between these arterials were soon built-up, and a full fan-shaped urban form had developed by the late 1930's. Thereafter detached suburban areas began to develop as time-distance relationships were further changed by the increasing use of the automobile.

As a result of the various physical and historical factors outlined above, Main Street dominated the earlier pattern of urban growth. The introduction of more rapid means of private and public transport did not alter its status; once established as the main shopping street it continued to attract retail and other commercial business. This cumulative attraction plus confinement by the terrain has made Main Street not only the major shopping street of Port Elizabeth but until very recently the only shopping street of significance. On it lie both a central business district (CBD) and a major outlying business district (MOBD) with an almost unbroken continuum of business between them and for some distance beyond the MOBD.

Conclusion.

In this paper an attempt has been made to analyse the effect of three factors - physical features, historical events, and increased mobility of the population - on the growth and form of Port Elizabeth. While it appears that these factors, either in combination or singly, have affected the growth and form of the city, they have also to some extent affected the functional pattern and efficiency of land use, particularly in the environs of Main Street. For example, the depth of the city blocks between Main Street and Strand Street, determined by Swan's survey of 1820, appears to have affected the functional efficiency of these blocks and the establishments now located in them; the Donkin Reserve has, and still does, act as a barrier to the expansion of the CBD¹).

It is beyond the scope of the present paper to examine in detail these and other functional problems related to the three factors under discussion. Nevertheless, an awareness and appreciation of the factors that have affected the growth and form of Port Elizabeth appears to provide a useful background against which functional analyses can proceed.

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1) These and other effects are discussed in greater detail in Beavon, K.S.O. (1968): 'An examination of certain aspects of the boundary of Port Elizabeth's central business district', *Journal for Geography*, April.

THE PUBLIC INQUIRY AS AN AGENT IN THE EVOLUTION
OF URBAN MORPHOLOGY : THE CASE OF FALKIRK,
SCOTLAND¹⁾

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Attempts to explain the morphological evolution of urban areas have traditionally leaned heavily on economic precepts, and particularly on the notions of spatial competition and locational costs. Yet it is completely accepted that market factors are by no means the only ones which are involved in the urban evolutionary process. Spatial competition, for example, is subject to a host of social and political restraints²⁾, and indeed the competition may be conducted for frankly political ends.

The role of public decision-making in urban development has received little critical examination so far³⁾. This may be partly because the decisions are often confused, illogical and unpredictable, conforming to no apparent laws, principles or models⁴⁾. This, in turn, is a reflection of the complex and cumbersome processes by which the decisions are reached, and the multitude of conflicting pressures to which the decision-makers are exposed. There are many channels by which political-urban decisions can be made and effected. One of the more significant is the public inquiry, a statutory device which is widely imposed on local authorities by their senior governments as a means of ensuring that major policy innovations are fully explored in public debate. The public inquiry therefore provides a forum for exposing local attitudes and conflicts. The actual form and authority of the inquiry can vary markedly, depending on the enabling legislation, but it is not uncommon for it to produce decisions which are both binding and long-enduring. In some situations, then, the public inquiry can be a most important agent in the evolution of urban forms and patterns.

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- 1) Except where noted otherwise, the material for this paper has been drawn from the Minutes of the Falkirk Town Council, and from interviews with Ian A. Ferguson, Burgh Architect and Planning Officer, Falkirk, and Roger Dyet, County Planning Officer, Stirlingshire.
 - 2) See, for example, Chapin, F. Stuart, Jr. (1962): *Urban Land Use Planning*, Urbana, University of Illinois Press, second edition, pp. 7-99.
 - 3) For recent examples see Cullingworth, J.B. (1960): *Housing Needs and Planning Policy*, Routledge and Kegan Paul, London, especially pp. 72-156; Martin Meyerson and Edward C. Banfield (1964): *Politics, Planning and the Public Interest*, The Free Press, Glencoe, paperback edition; Alan A. Altshuler (1965): *The City Planning Process : A Political Analysis*, Cornell University Press, Ithaca; Edward Sofen (1966): *The Miami Metropolitan Experiment*, Anchor Books, New York, revised edition.
 - 4) The point is not original but it bears repetition - see, for example, Mayer's observations in Knut Norborg (ed.) (1962): *Proceedings of the IGU Symposium in Urban Geography, Lund 1960*, Lund, C.W.K. Gleerup Publishers, Lund Studies in Geography, Series B. Human Geography No.24, pp. 466-468.

The burgh of Falkirk, Scotland, is such a case. It is the centre of a loosely-knit conurbation in which the effects of local political rivalries and jurisdictional conflicts can be clearly traced in the urban landscape. The conflicts have become manifest on many occasions, but never more openly and more vigorously than at two widely separated public inquiries which were called to rule on applications for extensions to the burgh boundaries. These inquiries are revealing on two levels. They give some insight into the all-too-human process of public decision-making, and particularly bring out the difficulty of presenting balanced arguments and reaching unprejudiced conclusions when strong conflicts of interest are involved. In each case, therefore, the background circumstances and the proceedings of the inquiry will be reviewed in some detail. On the second level, both inquiries have forced a reshaping of land development policies in the Falkirk area, with very pronounced morphological consequences.

Falkirk's Evolution to 1911.

Falkirk occupies a most strategic situation in Central Scotland (Figure 1). It lies near the head of the Firth of Forth at the intersection of natural north-south and east-west routeways. It is also midway along the principal axis of communication across Central Scotland, and is part of the largest urban agglomeration between Edinburgh and Glasgow. The burghs of Falkirk and Grangemouth are twin nodes in a misshapen, miniature conurbation which now contains some 100,000 people.

The conurbation is very much a creation of the Industrial Revolution. Through the combined advantages of situation and local mineral resources, Falkirk-Grangemouth became a major transport and manufacturing centre, with a pronounced specialisation in iron-founding. Its main economic growth occurred in the latter half of the 19th century. Between 1841 and 1911, the population of Falkirk burgh increased from 8,200 to 33,600, and that of the nascent conurbation from about 15,000 to 65,000. Approximately one-third of these people lived in a scattering of mining and factory villages which almost encircled the two towns (Figure 2). These unincorporated settlements fell under the jurisdiction of the Stirling County Council, a division of responsibility which has produced many conflicts of interest.

Falkirk Burgh Extension Application, 1911.

The burgh of Falkirk was incorporated in 1833, but its original boundaries were expanded twice by 1900, to give it a total area of about 1,800 acres. In 1911, a further and much more ambitious extension was applied for. If successful, it would have added 4,000 acres to the burgh, and would have carried Falkirk northward across the River Carron and eastward to the boundary of Grangemouth. The application was controversial, partly because of its scale and partly because it raised some novel concepts which were too radical for the landowners and industrialists of the area. Vigorous opposition was expressed by these proprietary interests, and by the Stirling County Council. A milder protest was voiced by the Grangemouth Town Council which had competitive aspirations toward some of the area. In accordance with statutory procedures, a public inquiry was called, and the verbatim record provides an excellent source of material on contemporary attitudes¹.

The extension was claimed to be necessary to provide land

1) 'Falkirk Burgh Extension Provisional Order', *Journal of Proceedings for Provisional Orders under the Private Legislation Procedure (Scotland) Act 1899*, 1911, pp. 427.

for industrial and residential expansion, though the argument was based mainly on the adverse qualities of the undeveloped land within the burgh (Figure 3). This amounted to 603 acres, of which only 202 acres was regarded by the Town Council as both suitable and available for building, with certain reservations. The potential industrial land, for instance, had many obvious merits: it was flat and serviceable, was near the canal and railways, and was well placed in relation to existing factories, but the annual ground rental was twice as great as for land outside the burgh. Similarly, the potential residential land on the southern boundary was expected to be unattractive for villa construction because it was near the poorhouse and fever hospital. Tenement development was thought equally improbable because of poor access to the main employment centres.

Various negative qualities were ascribed to the remaining 400 acres. Almost half was simply said to be 'not in the market', while the rest suffered from sundry physical handicaps, chiefly related to drainage. The northern and western parts of the burgh had first come under development before being annexed to Falkirk, and their drainage was therefore to the County Council's settling tanks on the River Carron. These were so seriously overloaded that the County Council would not permit any further building within the burgh catchment.

Beyond the burgh boundaries, problems of slope, drainage, mineral subsidence and current use formed barriers in almost all directions. Only along the eastern boundary was there a contiguous block of land which provided a natural extension to the built-up area of Falkirk, but all the landowners there were opposed to the application. They stressed that they had agreed to an extension in 1900 on the understanding that no further demands would be made on their land. Nevertheless, the Town Council viewed this as prime land for building factories and tenements and it was the only area which was specifically desired for its development potential.

The second purpose of the extension was to consolidate the urbanised area around Falkirk into a single planning unit, and so take advantage of the bold new powers provided by the Housing and Town Planning Act of 1909. In justification, it was argued that the area was already unified through 'community of interest', although it did not have unity of form. The supporting evidence was piecemeal and sometimes subjective but it added up to an incontrovertible case. It was simple, for example, to produce substantial evidence of commuting in both directions across the burgh boundary, or to point to the obvious pre-eminence of Falkirk businesses in the local economy. Great stress was also placed on common interests in urban service problems, such as drainage, water supply and public transport.

The objectors to the Falkirk petition unanimously denied the validity of either of the main arguments, and in the case of land needs they were on reasonably secure ground. It was easily demonstrated that the rate of land development in Falkirk was insufficient to warrant any increase in the burghal area in the immediate future, and there was some evidence that more land was actually available than the Town Council had claimed. On the other hand, this interpretation of land needs deliberately ignored two basic points. The first, which was explicit in the Town Council's argument, was that some land outside the burgh boundary was better suited to urban use, both physically and spatially, than most of the land within the boundary. The second point, which remained implicit, was that all future development should be confined to compact extensions of Falkirk's built-up area rather than dispersed through a string of fringe communities.

The most violent opposition was reserved for the notions of integrated planning and development control. Community of interest between Falkirk and the villages, and the advantages of unified administration, were flatly denied. The River Carron was referred to as a

'natural boundary' which the burgh should not be allowed to cross. These claims, however, were made merely to shield the paternalism and self-interest which were really at issue. The loss of present and prospective rateable value was obviously unacceptable to the County Council. The private landowners were unwilling to be subjected to the burgh's more stringent building controls, or to have to defer to burgh officials for development approval. Some industrialists also claimed that they were able to provide all the services needed by their workers.

The result of the inquiry was that the application was refused as premature, though the refusal was tempered by the observation that some extension would probably be necessary 'in the near future'. The Commissioners also recommended that the County Council and the Town Council should jointly undertake the construction of new sewage treatment works to permit the unserviceable land within the burgh to be developed. It is very apparent that the concept of administrative consolidation for planning and development control was as unacceptable to the Commissioners as it was to the objectors. Immediate building needs were viewed as the only sound reason for a burgh extension, and this need had not been convincingly demonstrated.

Urban Expansion in the Inter-War Period.

It would be idle to speculate on the morphological changes which Falkirk would have experienced if the 1911 application had been approved. There can be no doubt, though, that there would have been some differences from the actual development pattern (Figure 4), and these differences could even have been substantial in scale and significant in impact. Between 1919 and 1939 there was considerable expansion of the urbanised area, but this was made up almost entirely of public housing estates, as the local authorities carried out the responsibilities imposed by a succession of Housing Acts. Had the burgh extension been approved, and much of the Falkirk area brought under a single administration, there would have been an unprecedented opportunity to obtain a much more consolidated pattern of development. Instead, there was no co-operation amongst the several housing authorities, and the Falkirk Town Council was forced to reassess the qualities of the land under its jurisdiction. Falkirk itself expanded in a relatively compact manner, but the dispersed and attenuated form of the cluster was exaggerated.

Within the burgh, house building had first to be contained within the pre-war boundaries. Of the two potential sites from 1911 (Figure 3), only the westernmost was sufficiently convenient to employment centres to be considered seriously for working-class housing. It became a major building site while the less accessible southern block remained virtually untouched. In the northern and eastern parts of the burgh, where there were important factory concentrations, properties which had been unavailable in 1911 were pressured into development, but it was also necessary for the Town Council to encroach on one of the few remaining industrial sites. By the late 1920's there was almost no land left which was both suitable and available for working-class housing, so the Town Council once again promoted an extension application. The boundaries were carefully redrawn to forestall objections (Figure 4) and the application was approved without opposition. The County Council was appeased because none of the unincorporated communities were included and no other conflicting interests were at stake. Grangemouth's suspicions were allayed by placing the new boundary halfway between the old ones, opening the way for Grangemouth to be extended to the same line in 1937. Only one industrial firm was involved, and the agricultural landowners seem to have been reconciled to the justice of the Falkirk case.

The 1929 extension added 2,400 acres to Falkirk's area,

but appreciably less than half was both available and suitable for urban development. Moreover, within two years the extension was rendered largely unnecessary because the Town and County Councils finally reached agreement on the construction of a sewage treatment works. A large tract of land in the northern part of the burgh was thus opened for development. Another important effect was that the newly annexed land to the east, and particularly the area known as Middlefield, could be held in reserve for eventual industrial use instead of being taken up immediately for housing.

Planning Recommendations and Conflicts, 1946-1950.

The mid 1940's introduced a new breed of technical expert into the decision-making process at the local government level - the town planner. First to be involved in the Falkirk area was one of Scotland's most respected planners, Sir Frank Mears, who carried out a monumental survey of the Forth Valley between 1944 and 1946. He paid special attention to the Falkirk conurbation and noted four problems which were to be particularly bothersome in later public decisions:

- (i) the physical, economic and social problems of haphazard coalescence of urban communities, both within and beyond the conurbation;
- (ii) the need for planned industrial estates, both to stimulate investment interest (and so diversify the economic base of the area) and to provide a more rational distribution of industrial land use;
- (iii) the difficulty of finding enough suitable land to meet Falkirk's immediate housing needs; and
- (iv) the need for much more generous provision of public open space for outdoor recreation.

To resolve these problems, Mears offered six main recommendations, most of which were destined to plague the Falkirk Town Council for many years:

- (i) a green belt to prevent the coalescence of Falkirk and Grangemouth;
- (ii) a major recreation centre on the floodplain of the River Carron;
- (iii) an industrial estate at Lochlands, in the northwestern extremity of Falkirk, on a site with good access to road and rail services and convenient to Larbert and western Falkirk;
- (iv) a second industrial estate on the Grangemouth side of the proposed green belt;
- (v) the southward expansion of Falkirk, into the valley of the Glen Burn, to find ample space for the burgh's long-term housing needs; and
- (vi) the consolidation of the northern communities by allowing them to fill in the unoccupied land on the north bank of the River Carron, but a complete ban on northward expansion where another type of green belt, a 'health zone', was recommended as protection for several large medical institutions.

The only one of these recommendations which matched the Town Council's inclinations was the recreation centre in the Carron Valley. The other recommendations met with varying degrees of resistance, and played their part in bringing the Town and County Councils into head-long conflict once more.

The concept of a green belt between Falkirk and Grangemouth was acceptable in principle, but not at the expense of the Middlefield site, which had been viewed as prime industrial land for almost forty

years, and especially not if further industrial development was to be allowed on the Grangemouth side. The Lochlands proposal was also acceptable in principle but not instead of Middlefield which was considered much more likely to attract new industry to Falkirk. The Town Council adopted an industrial layout plan for the first section of Middlefield in 1950, and was prepared to extend industrial zoning almost to the Grangemouth boundary (Figure 5).

The residential land problem proved to be even more pressing than Mears had suggested. By 1950 it was apparent that he had badly under-estimated the burgh's housing needs, and that the supply of prospective residential land was rapidly coming to an end. The time therefore seemed appropriate for another burgh extension application.

Falkirk Burgh Extension Application, 1950.

The new application followed a course very similar to that of 1911¹⁾. Much the same area was involved, the same opponents were aroused and similar arguments were adduced at the public inquiry. The legal outcome was also virtually the same, though its spatial implications were much more profound. Perhaps the chief point of difference was that the Falkirk case was more carefully and professionally prepared than in 1911, as well as being more urgent and justifiable. It had taken forty years, but the constraints imposed by the Commissioners' decision in 1911 had finally become critical. Earlier pressures had been relieved by land becoming available unexpectedly and by the new drainage facilities, but it seemed that these safety valves had almost reached their limits by 1950.

The application was based on two main issues: the residential and industrial land needs of Falkirk, and the development of both in accordance with the town's advisory plan; and the desirability of comprehensive planning, under a single authority, for at least the area draining into the joint sewage treatment works. Expansion to the east was legally impossible, except into the green belt between Grangemouth and Laurieston. Expansion to the south was physically impossible because a new colliery had been opened on the town's southern boundary. Expansion to the west was undesirable because development would have to be channelled into a narrow corridor which would quickly link Falkirk to the next town of Bonnybridge. Only to the north, across the River Carron, did it appear that there was sufficient suitable land to satisfy Falkirk's needs, particularly in a district known as Mt. Gerald. The proposed new boundary therefore followed the natural drainage limit north of Stenhousemuir, and would have added more than three thousand acres to the burghal area.

The public inquiry lasted for three weeks, and by no means all the record is either rational or dispassionate. Even the professional evidence was often conflicting. For example, the development potential of several important areas was contingent upon the amount of mineral subsidence which could be expected, but the expert opinions were so divergent that the testimony became virtually meaningless. Similarly, two of Britain's most eminent planners were engaged by the opposing Councils, and they differed at almost every point on the desirable form of development for the Falkirk area.

As in 1911, one of the main concerns of the Town Council was to demonstrate community of interest between Falkirk and the Carron settlements. The physical evidence was primarily based on

1) 'Falkirk Burgh Extension, Etc., Provisional Order', *Journal of Proceedings for Provisional Orders under the Private Legislation Procedure (Scotland) Act, 1936*, 1951, 1,084 pp.

drainage, with particular stress on the point that no community should be forced to bear the cost of opening a new drainage basin as long as suitable land was still available in the established basin. The greater opportunity for morphological unity was also stressed, as was the desirability of a single planning authority. Finally, a considerable body of evidence was introduced to demonstrate the complex social and economic linkages between Falkirk and the Carron communities.

The countering arguments were identical to those which were used in 1911. There were the same flat denials - 'there is no community of interest between the northern area and the burgh, nor do they form a common centre of population'¹⁾ - and the same specious observations - 'the River Carron forms a permanent natural geographical boundary'²⁾. Once again, self-interest was the only meaningful motivation, and no attempt was made to hide it. The crux of the County Council's objection was simply expressed: 'Your petitioners submit that they are entitled to rely upon the area remaining within their jurisdiction and to reap the benefit of the rapidly increasing valuation'³⁾. The principal industrial land owners claimed that the Town Council would impose 'restrictions and regulations which will seriously hamper them in the conduct of their business'⁴⁾. The notion of a unified administrative and planning authority was no more acceptable in 1950 than it had been in 1911.

The second line of attack for the Town Council was through an assessment of Falkirk's predictable land needs and its available land supply (Figure 5). It was reported that 1,850 acres, almost half the land in the burgh, was not yet built on, but only 300 acres was believed to be suitable for residential development. It was calculated that only 43 per cent of the burgh's *immediate* housing needs could be met on this land, and that the land supply would be exhausted by 1958 at the latest. Rather more land, almost 400 acres, was considered to have industrial potential, most of it at Middlefield and Lochlands. The remaining area of 1,150 acres was not considered suitable for building at all, chiefly because of physical disabilities such as a high water table, broken terrain, excessive slope or subsidence risk. There were cultural constraints, too, particularly affecting the handsome park of Callendar House which was expected to remain permanently as open space. There were also problems of access to some areas, notably at Dorrator.

This assessment of Falkirk's land supply was strongly disputed by the County Council's witnesses. In briefest summary, three points were emphasised:

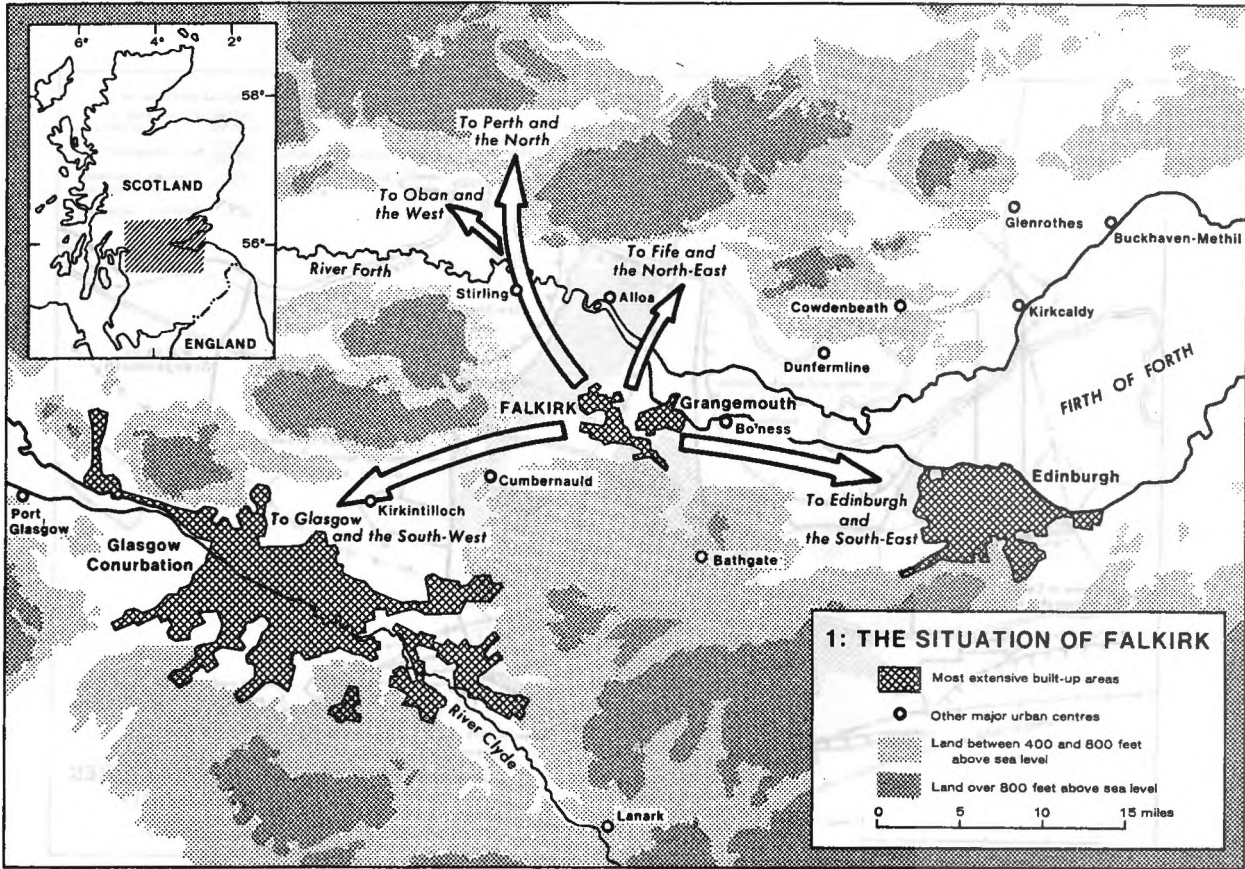
- (i) It was unrealistic to expect major industrial land demands in Falkirk, and the Middlefield and Lochlands areas would therefore be better suited for development as neighbourhood units.
- (ii) Another neighbourhood unit could be developed in the Dorrator area which had a major advantage in its proximity to the centre of Falkirk. It was also argued that the Town Council had been allowed to annex Dorrator, Middlefield and Lochlands in 1929 specifically to obtain space for its statutory housing needs.
- (iii) Falkirk's residential land needs should be based on a gross

1) *Ibid.*, p.22.

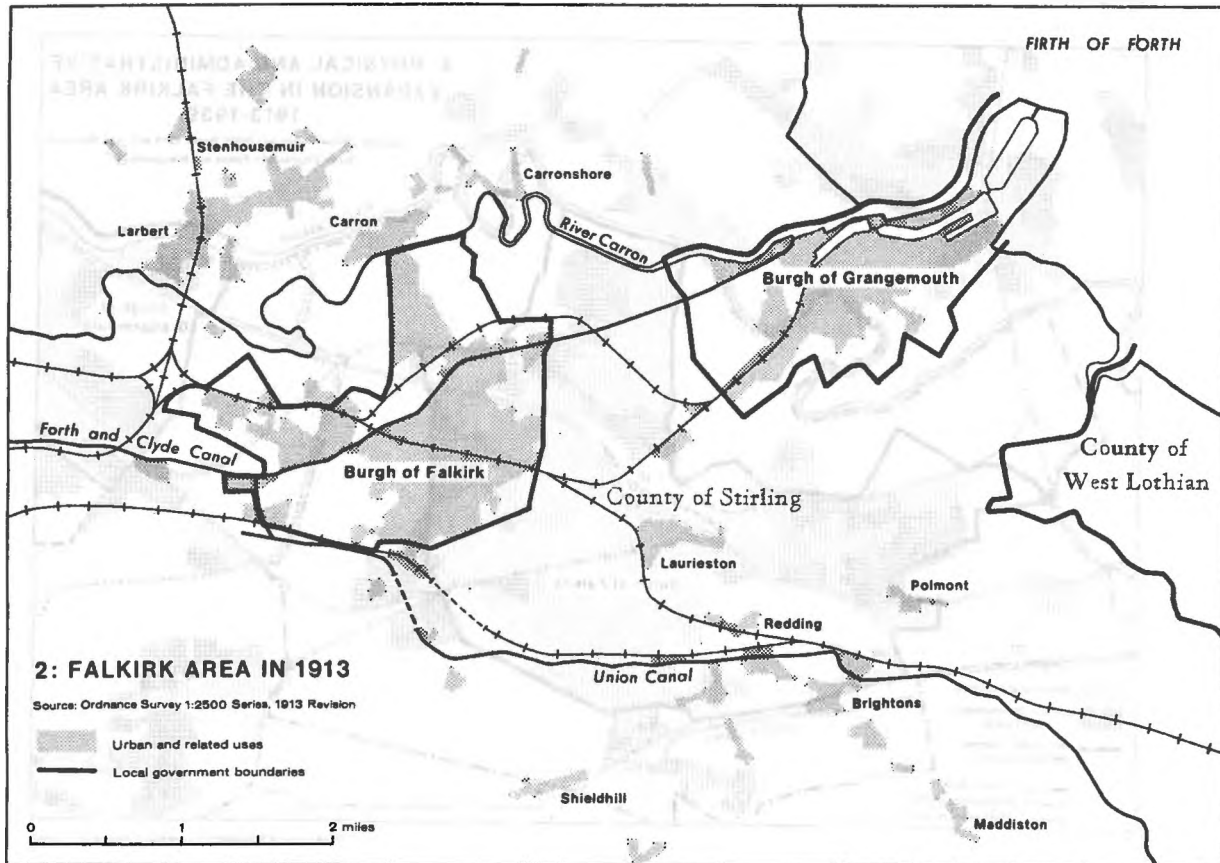
2) *Ibid.*, p.26.

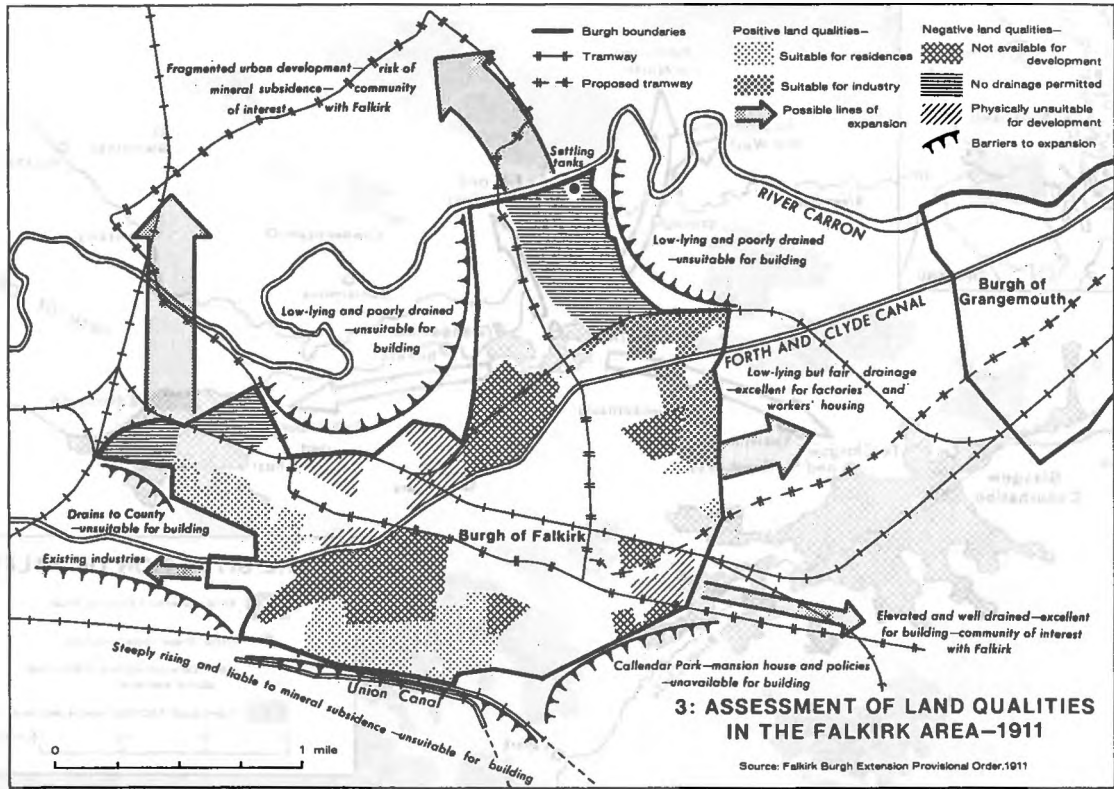
3) *Ibid.*, p.20.

4) *Ibid.*, p.27.



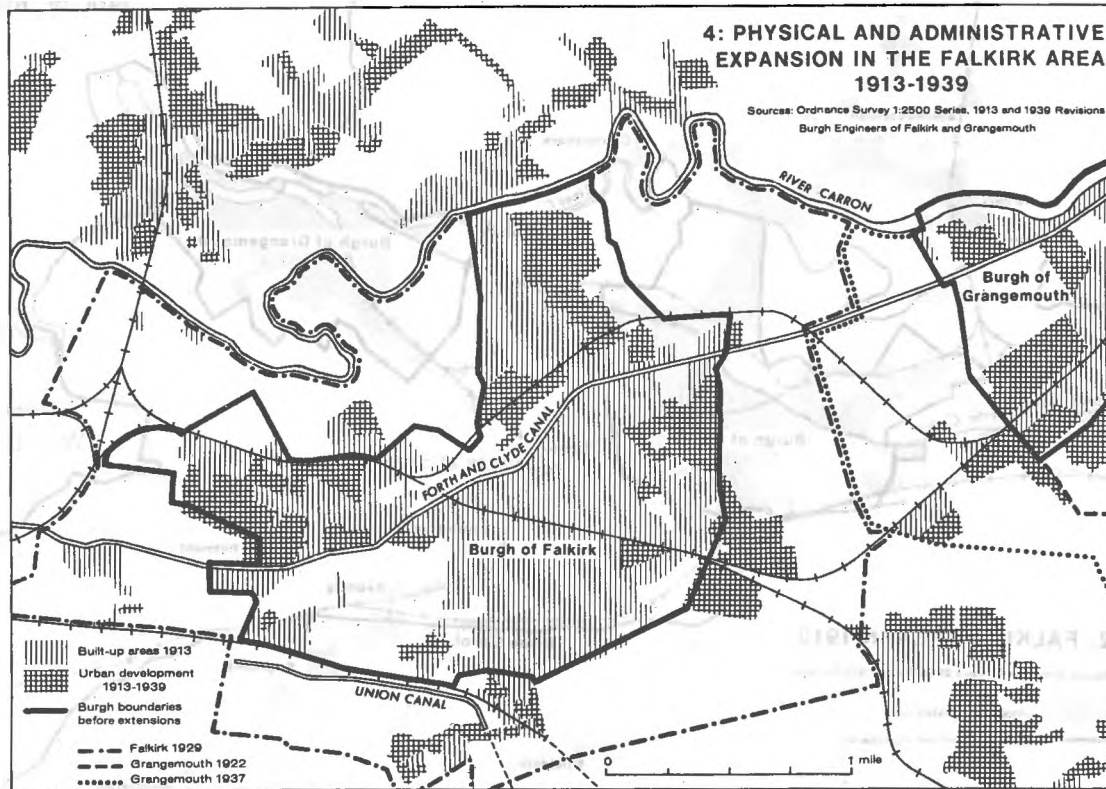
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Diagram 3



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Diagram 4

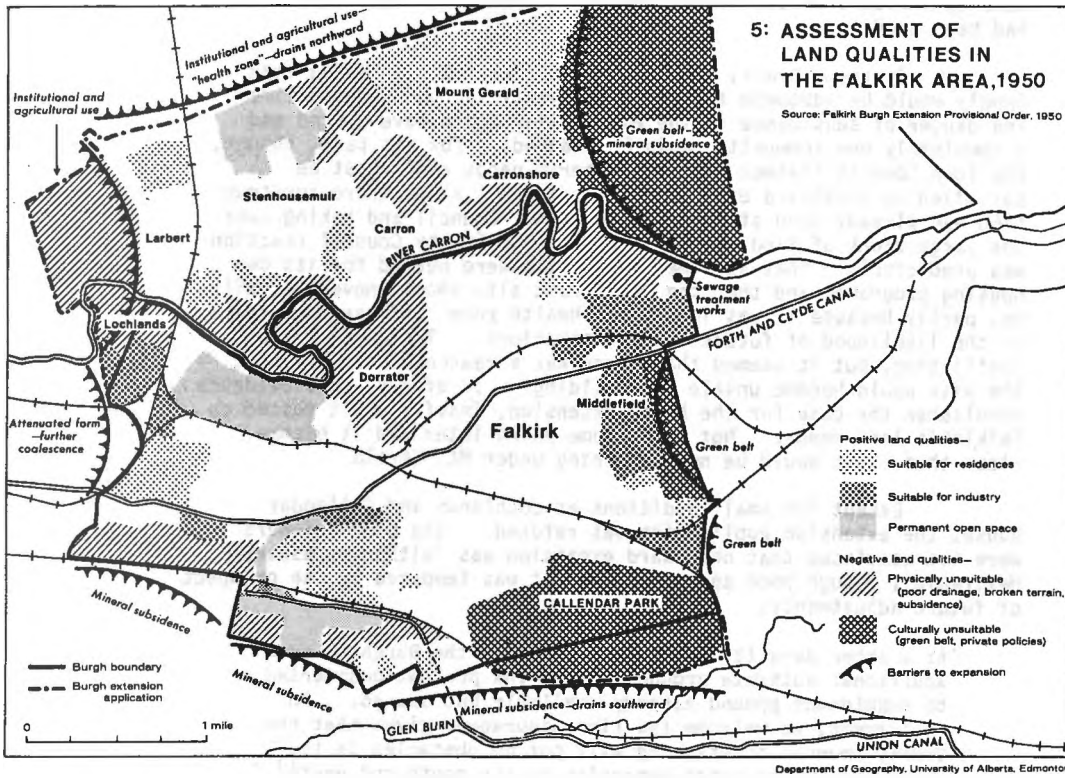


Diagram 5

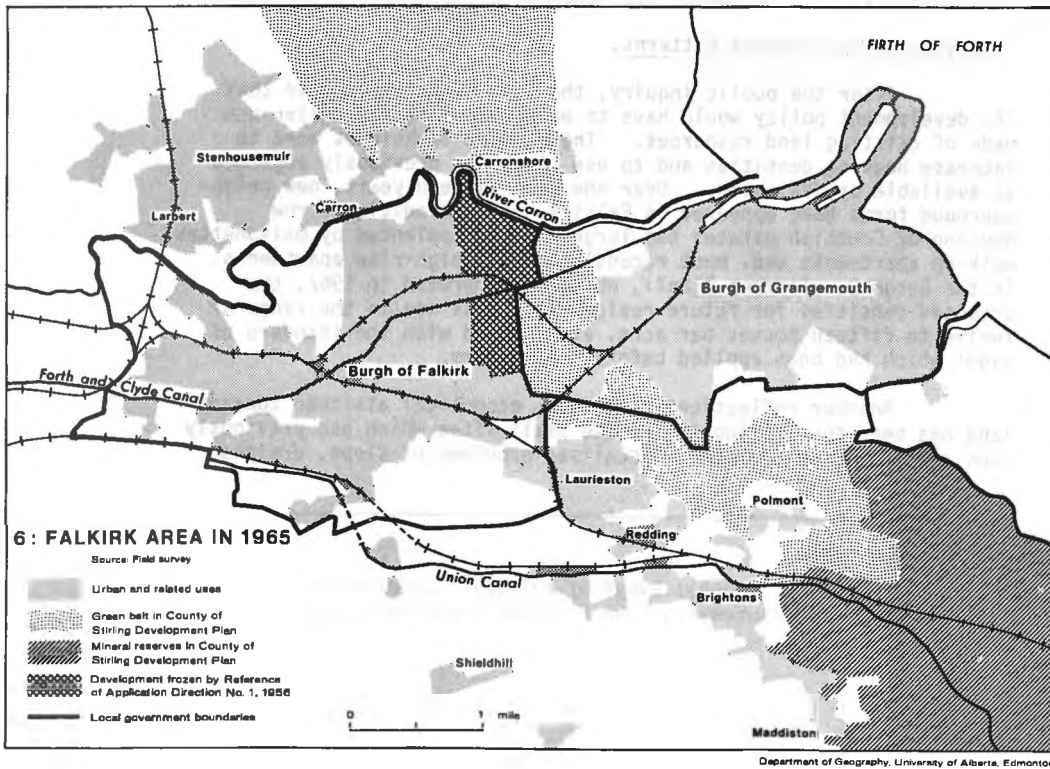


Diagram 6

density standard of ten houses per acre rather than the eight which had been used.

By these means, it was claimed, Falkirk's existing land supply would be adequate for at least twenty years, by which time the danger of subsidence in the Glen Valley would have passed and a completely new community could be planned. For its part, though, the Town Council claimed that its interim needs could best be satisfied by northward expansion, rounding out sites where construction had already been started by the County Council and taking over the large block of land at Mt. Gerald. The County Council reaction was predictable - that all the small sites were needed for its own housing programme and that the Mt. Gerald site should never be built on, partly because it was in Mears' 'health zone' and partly because of the likelihood of future mining operations. The evidence was conflicting, but it seemed that there was a reasonable chance that the site would become unsafe for building. In effect, this evidence demolished the case for the burgh extension, insofar as it rested on Falkirk's land needs. Not until some years later did it become clear that there would be no new mining under Mt. Gerald.

Except for small additions at Lochlands and Callendar House, the extension application was refused. The Commissioners were not convinced that northward expansion was 'either necessary or desirable', though once again a judgement was tempered by the prospect of future adjustments:

'At a later date it may be necessary for the Burgh to seek additional suitable ground outwith the present boundaries to supplement ground already available but unused. In that event, we welcome the firm assurances given that the County Council of Stirling will put no obstacles in the way of necessary burgh extension to the south and west¹.'

Southward expansion meant the Glen Valley, and this was Falkirk's best long-term alternative if integration with the Carron communities was permanently out of account. The reference to a westward extension, however, was incomprehensible since it would have led to corridor development and further urban coalescence along the Carron Valley. It has never been entertained by Falkirk Town Councils.

Post-Inquiry Development Patterns.

After the public inquiry, the Town Council accepted that its development policy would have to be re-examined and fuller use made of existing land resources. The obvious techniques were to increase housing densities and to use sites not previously regarded as available or desirable. Over the past fifteen years, new neighbourhood forms have appeared in Falkirk. The traditional row housing of Scottish estates has largely been supplanted by maisonettes, walk-up apartments and, most recently of all, high-rise apartments. In the Burgh Development Plan²), which was approved in 1962, the proposed densities for future residential areas are in the range of twelve to fifteen houses per acre, as compared with the standard of eight which had been applied before the inquiry.

Another reflection of the more economical attitude towards land has been the willingness to use small sites which had previously been overlooked or avoided. Localised problems of slope, drainage

1) *Ibid.*, p.1,083.

2) Burgh of Falkirk (1959): *Burgh of Falkirk : Development Plan - Written Statement*, Town Planning Department, Falkirk, pp. 12-14.

or unstable ground may no longer prohibit development, and low-intensity or non-urban uses (such as private grounds and nursery gardens) are no longer allowed to persist within residential districts. The older housing areas of Falkirk are now dotted with pockets of modern building of markedly different architecture and usually of appreciably higher density.

A third consequence of the pressures on the land supply has been the greater willingness of the Town Council to use expropriation procedures. Several building sites, both large and small, have now been obtained through compulsory purchase, or the threat of compulsory purchase. One of the unanticipated consequences of the 1950 inquiry, then, has been to force the Town Council to a new awareness of its legal powers to obtain development action.

Even with these devices, however, there has been an almost continual shortage of building land in Falkirk since the early 1950's, and the alternative sites suggested at the inquiry have provided no relief. The Dorrator area has never been considered, though its problems could be overcome quite easily and it has an attractive situation near the river and the centre of Falkirk. It is a remarkable illustration of the persistence of a negative and rather irrational attitude. In 1952, the Lochlands area was investigated for housing but neither the local Agricultural Executive Committee nor the National Coal Board was prepared to approve its development. In 1953 the Town Council finally broke its long-standing resolve and turned to Middlefield for a housing site, only to find that the Department of Health for Scotland had seriously accepted the notion of a green belt. After three years of dogged discussions the Department took the unprecedented step of assuming direct development control for the Middlefield area¹⁾. The land is now frozen in agricultural use, and this zoning will be relaxed only if the Secretary of State for Scotland is convinced that a site is needed for a major incoming industry. To all intents and purposes, Middlefield is part of the official green belt which was created in the County of Stirling Development Plan²⁾ (Figure 6).

The frustration of the Middlefield plans left only one significant block of land for the Town Council to look to. This was Callendar Park, a magnificent property which was still owned and occupied by the principal landowner of the Falkirk area, and which had never before been suggested for development. The first formal approach, in 1958, was strongly resisted but the Town Council finally obtained access to the property after several years of negotiation. It will provide a site for a completely new form of neighbourhood for Falkirk, a neighbourhood of high-rise towers judiciously spaced to preserve the landscape qualities of the park.

Even with the Callendar site, the Falkirk land supply is inadequate for the needs of the burgh. Private house-building has

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- 1) This action was effected through the Town and Country Planning (Reference of Application) (Burgh of Falkirk) Direction No.1, 1956, as provided for in Section 13 of the Town and Country Planning Act, 1947.
 - 2) Frederick W.F. O'Brien (1960): 'Report to the Secretary of State on the Objections and Representations in Connection with the Development Plan for the Burgh of Falkirk', unpublished manuscript, 5 pp. Also a letter dated June 19, 1961, and signed by A.C. Sheldrake, Department of Health for Scotland, informing the Falkirk Town Clerk of the Secretary of State's decision on the proposed Development Plan.

been almost non-existent since 1950, largely because there has been almost no land to spare from the local authority construction programme. New industry has been accommodated only by the abandonment of many of the nineteenth century foundries. Their sites are often unattractive and poorly situated for modern industry but at least they provide space. The move into the Glen Valley has now become an imminent necessity, but it will require a new burgh extension in accordance with the assurances given by the County Council in 1950.

Conclusions.

In a very real sense, the public inquiries of 1911 and 1950 have left an indelible mark on the morphology of the Falkirk area, and the effects of the more recent inquiry are not likely to be dissipated for several decades yet. On their own, they by no means provide a complete explanation of the patterns of urban change and development in the conurbation, or even in Falkirk burgh, but they have been important elements in the complex and tangled processes of public decision-making. One of the frustrations of this type of research, however, is that the consequences of public decisions can seldom be evaluated with complete certainty. The sequence from decision to development form can be traced quite readily, but there is always the tantalising question: Would a different decision have produced a radically different form of development, or was this development really being controlled by other forces? Would the morphology of the Falkirk area have been so different in 1939 or 1950 if the extension application had been approved in 1911? The question is unanswerable but the Falkirk experience suggests that two important generalisations can be built around it:

- (i) The impact of a given decision will vary with the special development circumstances of the time and place at which it is made. Virtually the same decision was reached at the two public inquiries under review but there is no doubt that the impact of the 1950 decision was far more profound, simply because of the different development pressures which prevailed at the time.
- (ii) Whenever a new decision is made on urban land policy, the parameters of urban development are modified. The possible courses of action are therefore changed. The important point is not that alternative decisions can produce different consequences in a given situation, but that the range of possible consequences is altered completely. Whether or not a particular decision will produce development forms that are very different from those that could otherwise have been expected will depend on the significance of the decision in relation to the other variables in the development equation. Because of the attitudes toward the siting of public housing estates in the 1920's and 1930's, it is reasonably unlikely that a burgh extension in 1911 would have produced significant modifications to the development pattern of the Falkirk area. In the very different atmosphere of the 1950's, though, an extended burgh would almost certainly have taken on a substantially different form. In either case, a positive decision at the public inquiry would have opened up a different set of development choices.

Some other useful generalisations from the Falkirk study will have to be treated more briefly:

- (i) The most significant effects of public decisions on urban land development are likely to be long-term rather than immediate. The failure of the 1911 application did not produce a real crisis for Falkirk until the 1950's; it was not the only reason for the crisis but it was a contributory factor. Similarly, the most notable consequence of the 1950 inquiry will be the eventual development of the Glen Valley community; again, the failure

of the extension application is not the only reason for this development, but it has helped to make it necessary.

- (ii) The unforeseen results of public decisions may be just as significant as those which had been anticipated. After the 1950 inquiry, it was quite obvious that new housing sites would have to be found within the burgh but no one would have predicted the use of Callendar Park while Middlefield, Dorrator and Lochlands remained untouched.
- (iii) The negative power of public decision-making, in the sense of prevention of land development, can be just as significant for morphological evolution as the power of positive direction. It is not enough to ask why a certain piece of land has been developed in a certain fashion; the reasons for lack of development elsewhere must also be asked, and the answer is increasingly to be found in local government policies.

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INDUSTRIAL DEVELOPMENT OF UITENHAGE

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INTRODUCTION:

From Figure I we see that Uitenhage lies in the middle reaches of the Swartkops River, Eastern Cape, where the valley becomes broad and shallow after being confined within the Suurberg Mountains as a steep, narrow, winding kloof. It is 14 miles from the mouth of the river and 21 miles North West of Port Elizabeth.

This town was established in 1804 as the seat of the magistracy for the Eastern Cape, and as such enjoyed considerable commercial advantages over other towns near the frontier. It therefore soon developed as an important marketing centre for products like wool, hides, salt beef, wheat, barley, oats and oat hay. An indication of the growth can be ascertained by examining the population figures.

TABLE I

POPULATION OF UITENHAGE, 1865-1967¹⁾.

YEAR	P O P U L A T I O N					
	Whites	Coloureds	Asiatics	Bantu	All Non-Whites	TOTAL
1865	?	?	?	?	?	3,342
1875	?	?	?	?	?	3,693
1904	6,679	?	?	?	5,518	12,197
1921	7,815	3,052	160	3,187	6,399	14,214
1936	9,437	4,334	225	6,588	11,147	20,584
1951	14,272	7,161	373	16,942	24,476	38,748
1960	17,531	9,309	396	21,519	31,224	48,755
1967	20,500	12,000	450	28,000	40,450	60,950

The adjacent urban area of Despatch, which in 1946 was established as a Municipality with 4,000 White inhabitants, in 1967 had 9,000 Whites, 1,500 Coloureds and 2,500 Bantu, making a total of 13,000. (Estimates of the local Health Department.)

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- 1) Sources: 1865, 1875, 1904: The 'Uitenhage Times'.
1921, 1936, 1951, 1960: Population Censuses, reported in Republic of South Africa, Bureau of Statistics (1963): *Population Census, 6th September, 1960: Vol. I: Geographical Distribution of the Population*: Government Printer, Pretoria: R.P. No. 62/1963: p. 88.
1967: Pienaar and Associates (1967): *1967 Population, Republic of South Africa: Stats*: Pienaar and Associates, Johannesburg, p. 24.

FIGURE 1.
LOCATIONAL MAP.

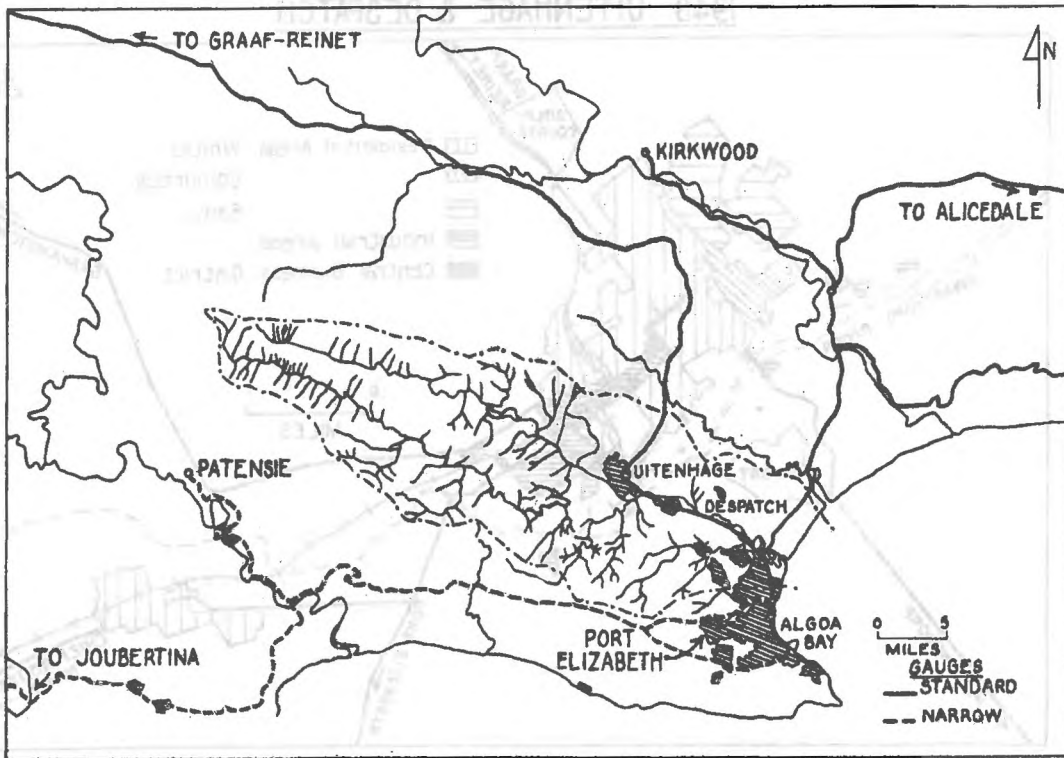


FIGURE 2.
1938 UITENHAGE & DESPATCH

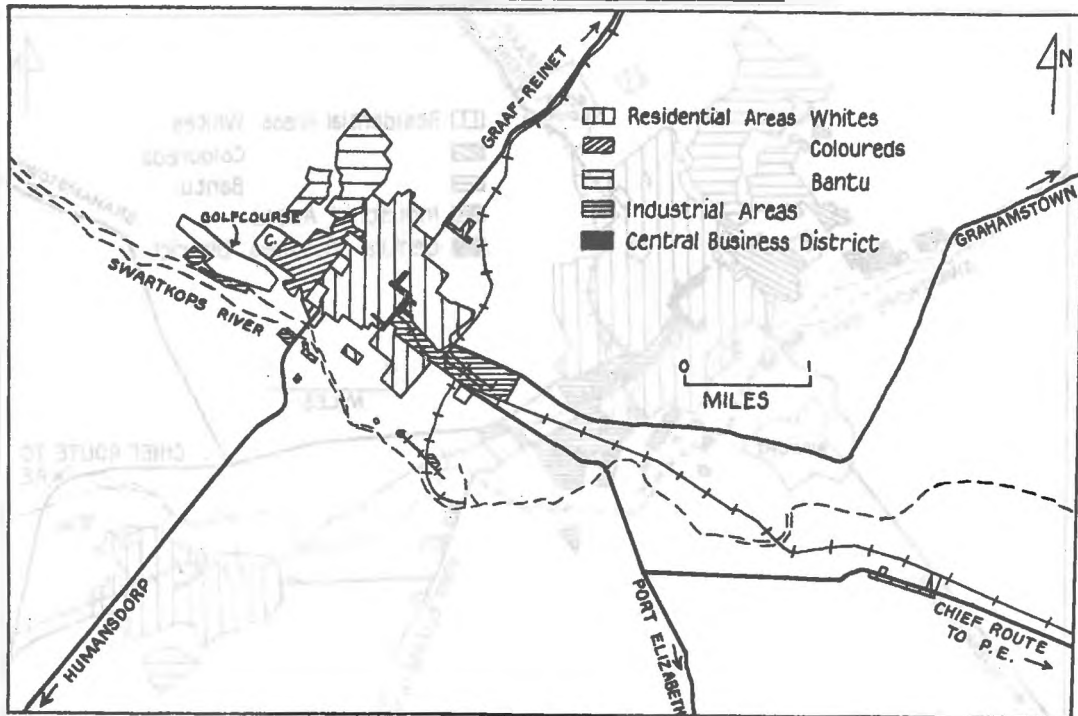


FIGURE 3.
1948 UITENHAGE & DESPATCH

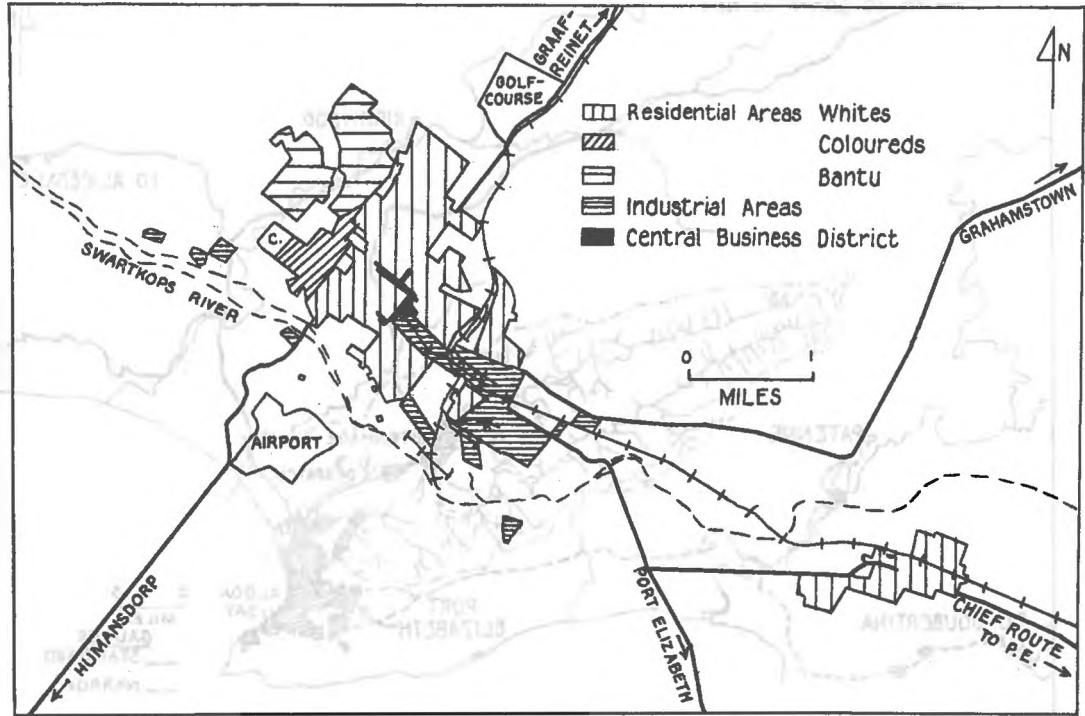


FIGURE 3 : UITENHAGE AND DESPATCH IN 1948

FIGURE 4.
1958 UITENHAGE & DESPATCH.

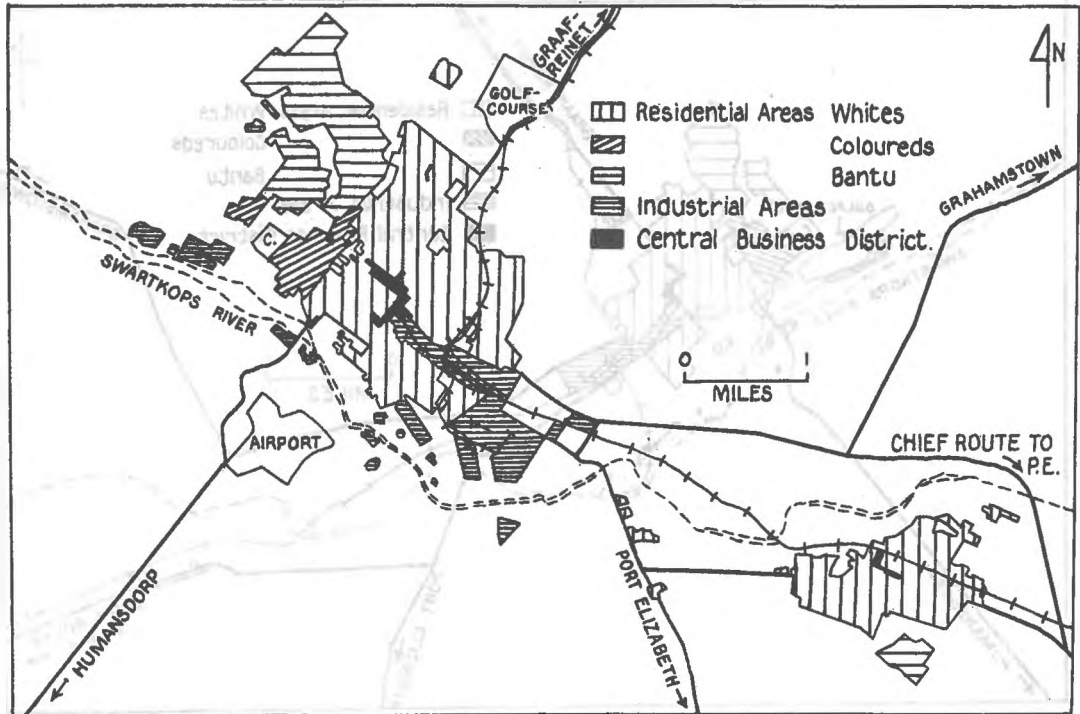


FIGURE 4 : UITENHAGE AND DESPATCH IN 1958

FIGURE 5. 1962 UITENHAGE & DESPATCH

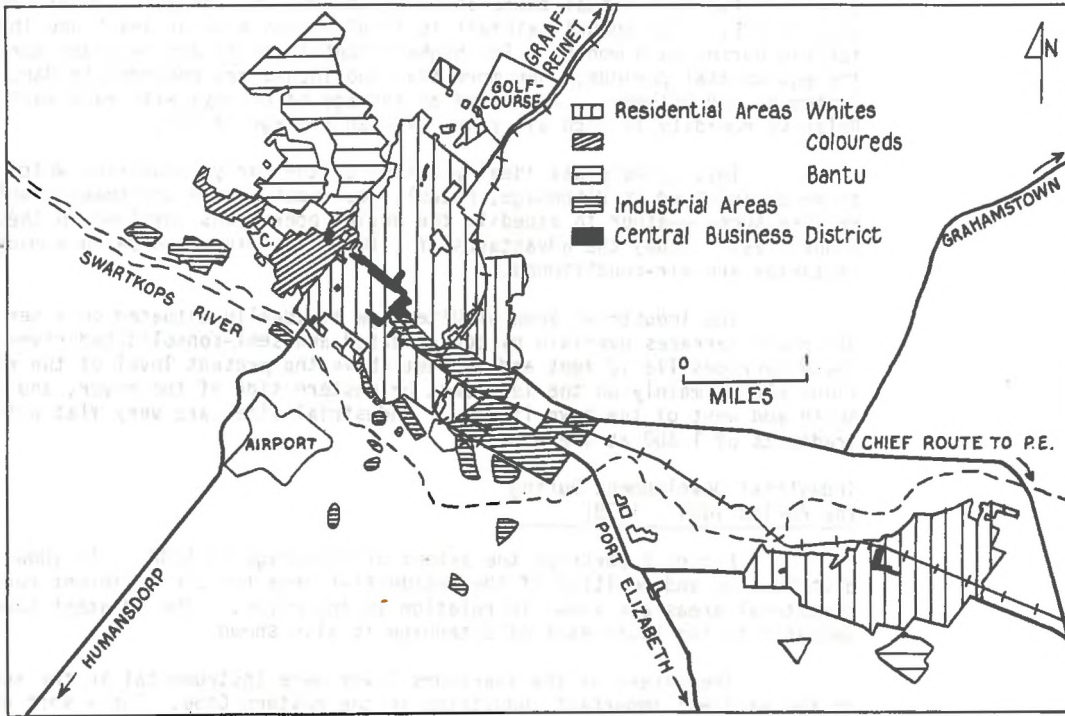


FIGURE 5 : UITENHAGE AND DESPATCH IN 1962

FIGURE 6. 1968 UITENHAGE & DESPATCH

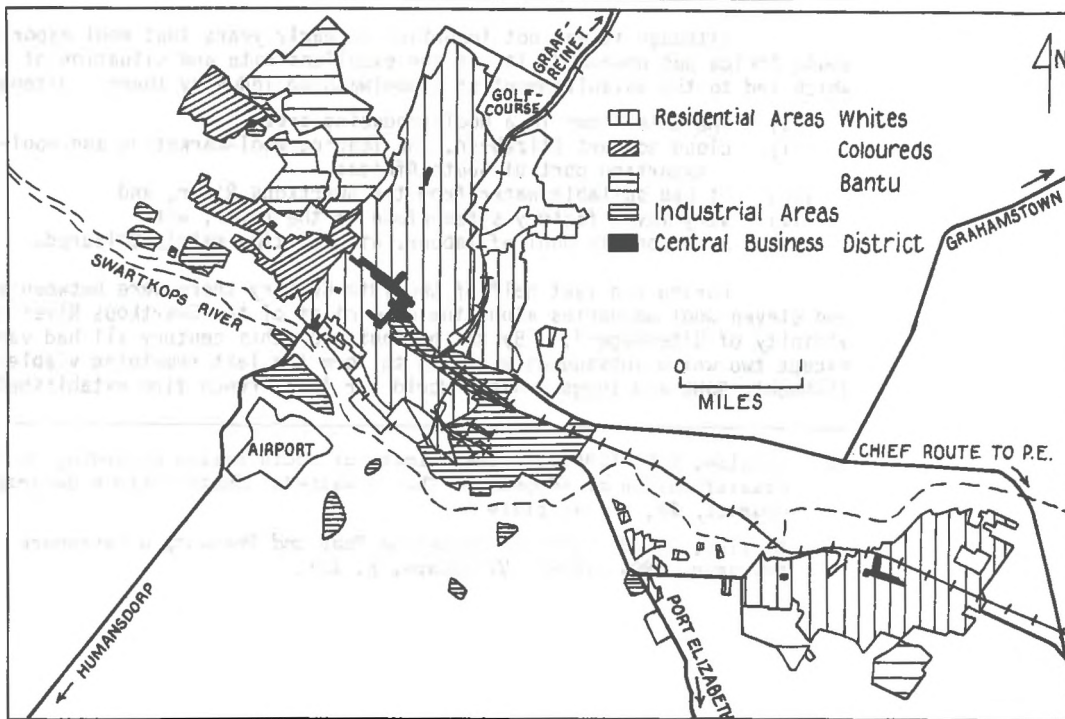


FIGURE 6 : UITENHAGE AND DESPATCH IN 1968

The climate of Uitenhage according to the Köppen Classification is BSha¹⁾. The mean annual temperature is 68.8°F. and the mean annual range is only 16.1°F. The annual rainfall is 18.89 inches with at least one inch falling during each month. The highest monthly falls are recorded during the equinoctial periods, when more than two inches are recorded in March, September and October. There are an average of 88 days with rain each year. Relative humidity is high all year, with an average of 82%.

This climate was ideally suited to the early industries which came to be established in Uitenhage, notably wool-washing and brickmaking which require sunny weather to expedite the drying operations involved in these industries. Today the advantages of climate are minimised because modern factories are air-conditioned.

The industrial area of Uitenhage is ideally situated on a series of old river terraces overlain by consolidated and semi-consolidated river gravels. These terraces lie 12 feet and 33 feet above the present level of the river flood plain, mainly on the left bank or eastern side of the river, and to the south and west of the town itself. Industrial sites are very flat with gradients of 1:300 at the most.

Industrial Development During
the Period 1804 - 1938:

Figure 2 portrays the extent of Uitenhage in 1938. It shows the distribution and position of the residential area for the different races. Industrial areas are shown in relation to the river. The adjacent town of Despatch to the south-east of Uitenhage is also shown.

The waters of the Swartkops River were instrumental in the success of the earliest important industries in the eastern Cape. Their soft nature and absence of impurities made them very suitable for washing wool, which is produced in abundance in the surrounding districts. Other rivers to the west had suitable water, but were too deeply incised, and in any case were not associated with the chief town in the area, as was this river. Those rivers in the east which have associated flat land, like the Sundays River, are far too saline for the purpose of washing wool.

Although it was not important in early years that wool exported from South Africa was unwashed, it was the excellent site and situation of Uitenhage which led to the establishment of a woolwashing industry there. Uitenhage was:

- i) The chief town in a wool-producing area;
- ii) close to Port Elizabeth, the leading wool-marketing and wool-exporting port of South Africa;
- iii) it had suitable water from the Swartkops River, and
- iv) very level factory sites close to the river, with
- v) a reasonable pool of labour, at that time mainly Coloureds.

During the last half of the 19th Century there were between eight and eleven wool washeries along the nine miles of the Swartkops River in the vicinity of Uitenhage²⁾. By the beginning of this century all had vanished except two which subsequently merged to form the last remaining viable establishment, Gubb and Inggs. After World War II a French firm established a

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- 1) Schulze, B.R. (1947): 'The Climate of South Africa According to the Classification of Köppen and Thornthwaite': *South African Geographical Journal*, 29, p. 34, plate I.
 - 2) Sellick, W.S.J. (1904): *Uitenhage Past and Present, a Centenary Souvenir, 1804 -1904: Uitenhage*, p. 131.

wool-washing factory in the town, and so now there are two producing 22 million lbs. of scoured wool and tops each year - one-third of the South African output.

These two firms give employment to 950 non-Whites and 150 Whites, and provide raw materials for the wool textile industry in Uitenhage and the rest of South Africa. They also export 'tops' to the United States, France, the United Kingdom, Japan, and Germany. In fact 17 million lbs. of processed wool are exported from Uitenhage each year.

The wool-washing industry from the 1850's can be cited as part of the cause for the presence of the 29,000 Bantu at present living in the townships of Uitenhage. Because of the unpleasant working conditions in the washeries, as well as the shortage of labour during the latter part of the 19th century in the town, the Coloured workers often refused to do this work. The result was that in the early 1870's local businessmen, headed by the directors of the washeries, applied to the Cape Government for permission to contract labour from the Territories, notably British Kaffraria. One report stated that at least 1,600 Bantu could be used in the town¹). From 1875, when permission was obtained, the numbers of immigrant Bantu have continued to rise, despite legislation in 1923, 1937, 1945, etc., attempting to put an end to this movement from rural areas to the towns²). (See Table I above).

Another early industry was tanning of leather, again sited in Uitenhage because of soft water, and the presence of the large local market in the Railway workshops, and also later the motor assemblers in Port Elizabeth. Initially local hides and skins were used, but as the market increased hides were brought from Port Elizabeth, one of the leading hide-exporting ports of South Africa.

The single tanning establishment started at the turn of this century, and has had a very checkered career, due mainly to competition from imported leathers and increasing use of cheaper synthetic materials as a substitute for leather, particularly for upholstery.

Today, all the hides processed in the town come from the Reef³), and all the leather produced is used in the Port Elizabeth shoe industry.

The tanning industry employs 160 non-Whites, Bantu and Coloureds, (the latter for work requiring greater skill), and 25 Europeans as supervisors. It produces two-and-three-quarter million sq. ft. of uppers per annum - 30% of the Republic's requirements⁴).

The brickmaking industry has since the earliest days until recent times adequately provided for all the local building requirements. Present-day production of approximately 100,000 bricks per month, using wood-fired kilns, is totally inadequate and must be regarded as the last stages of a dying industry. Competition from the modern, large-scale brickmaking concerns

1) *Uitenhage Times*, Friday, March 19th, 1875.

2) Act No. 20 of 1923, *Natives (Urban Areas) Act*, and subsequent amendments and consolidations. (Government Printer, Pretoria).

3) That is, the Witwatersrand complex centred on Johannesburg.

4) Personal interview with the Management.

in the vicinity must eventually render these establishments uneconomic. In addition, the land on which they are sited has now been sold to other industries, as the brickmakers previously only rented the land from the Municipality.

Railway workshops were established in the town by the Cape Government in 1876, shortly after the rail link between Port Elizabeth and Uitenhage had been completed on 2nd September, 1875¹⁾. Their main purpose was to serve the rail system being developed in the Cape Midlands during the period 1875-1883. They were sited on a piece of ground 26 acres in extent, which was donated by the Uitenhage Municipality to any company which would take the initiative to build a rail link to Port Elizabeth, an attitude of co-operation by the local authorities which still continues today. Initially the workshops were only large enough to accommodate three locomotives and six short carriages at any one time for purposes of repair. By 1880 there were 250 men employed, of whom 130 were skilled artisans. Twenty years later there were 1130 men employed, while in 1967 the total had risen to 2524. In the workshops today there are 1277 White skilled artisans, 200 White administrators, 350 White labourers, 400 Coloured labourers, and 269 Bantu labourers.

The area of the railway workshops site is now approximately 140 acres, while investments in buildings, machinery and tools stand at R84.3 million. The workshops produce 25 tons of metal castings per day from scrap metal; six heavy and 16 light engine-repairs are undertaken each month; while 10 heavy and seven light wagons are repaired every five days, and one heavy and one-and-a-quarter light coaches are repaired each day. In terms of size and output this industry therefore stands alone, and it has been since its inception the greatest single contribution to the wealth and welfare of the town. On numerous occasions attempts have been made to remove it to more suitably located centres, but each time these suggestions have been vigorously resisted by town members and municipal authorities alike.

The provision of adequate electricity and water supplies during the 1930's paved the way for the successful expansion of the industrial sector of the town immediately after the Second World War.

In 1910 the use of D.C. electricity was inaugurated, and in 1912 120,000 units were consumed. This system was used until 1929, during which year 688,000 units were sold. In December 1929 bulk supplies of A.C. electricity were purchased from Port Elizabeth for distribution by the local authority. In 1930 two million units were sold, over half of which were used by the railway workshops. In 1938 five million units were sold, and by 1948 9.4 million units were being used. In the decade 1958 to 1968 electricity consumption increased from 58 million to 131 million units per annum.

From the earliest times water supplies were obtained from the artesian supply at the 'springs', which initially produced 1.5 million gallons per day and has gradually dropped to half this figure, due probably to the increasing number of boreholes in the area.

In 1934 the Groendal Dam was completed on the Swartkops River, 14 miles upstream from the town. This dam ensures a supply of 3.5 million gallons per day. This adequate supply of water enabled industrial expansion to continue without hindrance, and it is only in 1968, when the daily consumption rose to well over 3 million gallons that plans are being made to augment this supply from a new storage dam.

1) Sellick, W.S.J. (1904): op. cit., p. 143

Industrial Development 1939 - 1962:

Figure 3 shows the town in 1948. The immediate post-war development of industry, and the expansion of Bantu and White areas in contrast to the 1938 position is evident. Figure 4 maps the 1958 picture. A new Bantu township (McIlhaughton Township) should be noted. The growth of Despatch is also clear.

During the second World War it was realised at Government level that South Africa was too dependent on imported manufactured goods. As a result, a period of active participation by the Central Government in the industrial expansion of the country followed. Private enterprise was encouraged to invest in industry, and tariffs were imposed on most imported goods to ensure the success of local industries. Where entrepreneurs were not forthcoming, the Government took steps to establish the necessary industries through the Industrial Development Corporation, which was especially formed in 1940 for this purpose¹⁾.

The first industry to be established in Uitenhage after the war was the Goodyear Tyre and Rubber Company in 1947. It was sited here for a number of reasons:

- i) The town was close to the Port Elizabeth motor vehicle assembly plants;
- ii) there was plenty of industrial land available, and at reasonable cost (R800 - R2,000 per acre). Sixty-four acres were bought by this company;
- iii) suitable housing was available for the imported labour;
- iv) a pool of skilled White labour was available;
- v) service industries were plentiful in Port Elizabeth, 20 miles away;
- vi) Uitenhage is central in the Republic, and
- vii) the local authority was co-operative.

This was followed by the building of the Studebaker Assembly plant in 1948. This factory acquired 50 acres of land on a site adjacent to the Tyre Factory, and in a position close to the existing railway workshops on the main road to Port Elizabeth. Studebaker vehicles were assembled in the town from 1948 - 1965, after which time the parent plant in Canada ceased manufacturing.

From 1950 - 1955 Austin motor vehicles were assembled in Uitenhage, and from 1951 onwards Volkswagen vehicles were produced. From 1965 to 1968 the latter were the only make of vehicle assembled in the town. The company is now known as Volkswagen South Africa, Ltd.

So in the immediate post-war years there was built up a nucleus of tyre manufacturing and motor assembling works, around which the later development of the motor component industry was to be built.

Another development was also taking place in Uitenhage at this time - that of the textile industry. In 1948 the Industrial Development Corporation established in Uitenhage the first wool textile plant in South Africa - Fine Wool Products of South Africa - producing worsted cloth and yarn.²⁾ It was sited next to the then most important wool-washing plant in South Africa, Gubb and Inngs, and also near to the non-White residential townships, from which the

1) Act No. 22 of 1940, *Industrial Development Act*, Government Printer, Pretoria.

2) *Financial Mail*, Johannesburg, February 9th, 1968.

main supply of labour is drawn. These two establishments standing apart from the rest form a unit and are entirely integrated, producing everything from raw wool to dyed cloth and yarn. Together they now employ 350 Whites, 2500 Bantu and 190 Coloured workers.

Also in 1948 a French firm established a wool-washing and carding industry in the town, because of the suitable water supply (Groendal Dam holds 26,000 million gallons), the presence of a large pool of experienced labour, and the small degree of competition from the other wool-washeries. Output is about 4.5 million lbs. of washed wool per annum - one quarter of that of Gubb and Inggs. Of this production, 70% is sent overseas to the company's associates in France. This factory employs 60 White and 240 Bantu workers, and handles 6 million lbs. of grease wool per annum, some of which is imported from Australia for blending purposes. In addition, Llama Wool and Knitwear Pty. Ltd., and Marble Carpet and Textile Company Ltd., are also situated in the town, close to the supply of raw materials.

Cotton weaving is also represented by the Union Cotton Mills, which is the second largest cotton weaving mill in South Africa, producing 24 million towelling units per year and employing 36 White, 40 Bantu and 130 Coloured workers.

Industrial Development 1962 - 1968:

Figure 5 portrays the town in 1962. Further expansion of industrial areas should be noted, as well as the expansion of residential areas for Whites in Uitenhage and Despatch, and for Coloureds in Uitenhage. Figure 6, showing the position in 1968, reveals the consolidation of the industrial area, and the opening of a new area upstream. Further housing for Coloureds, and new housing for Bantu (the Kwa Nobuhle Township) should be noted.

In an attempt to standardise the motor industry in South Africa and reduce the range of products produced, the Central Government introduced a new formula which enabled 'locally-manufactured vehicles', (i.e. those which had a certain percentage-by-weight of parts made locally), to have a reduction in import duty on those parts as yet not made in this country. The result of these measures was that the motor component industry in South Africa has expanded enormously, both for original equipment and for replacement parts. Uitenhage, because of its position in South Africa, close to the three largest South African motor assembling establishments, and far enough away from the sea air to be out of the rust belt, attracted many of these new factories; they include Bosal Africa, (producing exhaust systems and industrial tubing); S.K.F. (producing ball and roller bearings); Ramco (producing piston rings and pistons); Borg Warner (producing transmission units); and G.K.V. (producing drive shafts and other forged parts for the motor industry). All these factories occupy large sites close to or adjacent to the existing two plants, Goodyear and Volkswagen South Africa. These two latter plants have undertaken vast expansion programmes of R11 million and R5.5 million respectively. These extensions include manufacturing plants for belting and rubber products for the motor industry as well as household rubber products; while engine machining and body pressing facilities have been installed at Volkswagen South Africa. In addition, Hella (South Africa) has now erected a factory in the new industrial area across the river up-stream, while a machine tool factory is to be established on an 11 acre river-side site in the near future.

Because of all the building and construction involved in the erection of new factories, and extensions to existing buildings, together with the erection of private houses in the town, the building industry expanded enormously. Ready-Mixed Concrete Products, and Precast Concrete Products, each erected factories, while an engineering firm - Uitenhage Engineers (Pty) Ltd. - and another factory producing structural materials - National Standard South Africa Pty Ltd., also established themselves in the town.

During the period after 1962 to the present, the number of industrial establishments has increased from 12 to 30, and the areas of industrial land from 570 acres to 950 acres. Many new expansion programmes have been curtailed because of the current (1968) credit restrictions imposed by the Government. During the same period from 1962 onwards the Municipal budget has doubled, and is now R4 million per annum.

Problems Encountered in the
Industrial Development of Uitenhage:

1. Provision of Industrial Sites, and Housing:

The Municipal authorities have been hard-pressed to provide adequate facilities for the vast influx of new industries and labour, but delays have been few, and every effort has been made to expedite new housing projects and the provision of factory sites, services, etc.

During the period 1963 - 1968, ten blocks of flats, containing 220 units were built, one by the Municipality and nine by private enterprise. In the same period, 800 dwellings were built for their own occupation by private White individuals, while 300 houses for Whites were constructed by the Municipality. This building programme was necessitated by the large inflow of skilled immigrant labour into the town, both from overseas and from other parts of the Republic.

The Municipality was also responsible during this period for providing 450 houses for Coloureds. In 1968 it will provide 1500 houses and 157 sixteen-bed hostels for Bantu in a new township called Kwa Nobuhle. The Coloured population will then find additional housing in the renovated houses of the McNaughton township formerly occupied by Bantu, and in the extension to their existing township. The oldest Bantu township, which is closest to the town, is to be entirely demolished.

2. Utilization of Existing Labour Resources:

The problem of labour absenteeism is being tackled by the Municipality providing adequate housing; and by the factories providing pleasant and adequate facilities for their workers, as well as additional fringe benefits including canteen facilities, pension schemes, creches, and long-service awards. Absenteeism has been a problem since earliest times, with alcoholism being cited as the chief cause, with the result that many workers only complete a four-day week.

Recently more active steps have been taken in the textile and leather industries to reduce absenteeism and the resultant labour turnover, by introducing aptitude tests¹⁾, induction training, and improved communication between management and workers. Considerable success has been achieved, and in many cases labour turnover has been significantly reduced, by as much as 40% and in some sections by 100%.

The normal pattern is that during the second half of the year labour is fairly stable with a monthly turnover of round about 5%; while during the first quarter of the new year the turnover can be as high as 10% - 15%. This high labour turnover is due to the unsettled nature of the worker after the annual factory shut-down at the end of the year. The result is that during the first quarter of each year, the factories are desperately attempting to build up their numbers to the normal staffing requirements, as most of them start the year with only 70% - 80% of their normal number of workers.

1) Backer, W. & G.C.V. Graham (1967): *The Needle Dexterity Test*, Acme Printers, Port Elizabeth.

3. Employment Opportunities in Uitenhage and Despatch:

An interesting aspect of the employment of labour is the large number of workers who daily commute from Uitenhage and Despatch to their work in Port Elizabeth. From Uitenhage and intermediate stations there were in 1967 14,533 1st class, 56,789 2nd class and 117,701 3rd class season tickets sold, these being mostly workers' weekly tickets. This represents nearly 5,000 people of all races taking return trips each day to and from their work in Port Elizabeth. This number represents approximately 20% of the total working population of these two towns. Uitenhage therefore plays a considerable role as a dormitory town, though its relative importance in this respect has decreased. On the other hand Despatch acts as a dormitory town for both Port Elizabeth and Uitenhage. It is 16 miles from the former and only three miles from the latter, and has few employment opportunities.

4. Disposal of Effluent:

A problem of considerable magnitude has been that of the disposal of industrial effluent. This has been of importance from earliest times, and the tannery and wool washeries were the chief offenders, fouling the water of the lower reaches of the Swartkops River to a marked degree so that fish-kills were frequently experienced. Legislation by the Central Government in 1956 now requires that establishments such as industries and sewage disposal works, which discharge noxious effluent, must have their own evaporating basins for the disposal of their waste water.¹⁾ In 1968 there are 102.5 acres of such evaporating basins in association with these establishments.

Future Expansion:

Uitenhage has made adequate provisions for future urban and industrial expansion and has laid out large residential townships for Europeans on the eastern and northern sides of the town, while adequate extensions to the townships for Coloureds and Bantu are under way. Large tracts of industrial land have been demarcated on the west bank of the river to the south-east of the present industrial area. This is near the new Bantu townships under construction, nearer to Despatch.

The town seems set for even greater expansion in the near future, as all the facilities are available in the form of land, labour, power, water and transport. What is perhaps even more important is that the utilisation of these physical advantages, as an overall-basis for development, has been planned by an energetic and sympathetic local authority, which is ready at all times to meet any additional demand made on the town's resources.

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1) Act No. 54 of 1956, *Water Act*, Government Printer, Pretoria.

THE ROLE OF NEW TOWNS IN DEVELOPING COUNTRIES,
WITH SPECIAL REFERENCE TO MALAWI

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General.

In his analysis of the Urbanisation and Development of the American West, Wade stated 'that the towns were the spearheads of the frontier'¹⁾. The validity and importance of this statement is often forgotten in programmes for the development of newly developing countries, probably due to the fact that development programmes are generally applied on a sectoral basis and imposed from above and that development today does not proceed along a military frontier as it did in Colonial days. Furthermore, the developing countries generally present a picture of a settled rural population interspersed with numerous villages. It frequently escapes the observer that these villages are almost entirely static and that they have few, if any, links with the rest of their country and with the outside world. In our endeavour to establish growth points based on the extraction of mineral or other natural resources where western technology, administrative and commercial systems can be imposed, we neglect the poorly-endowed areas and fail to see opportunities in the existing pattern.

Malawi is a country richly endowed with natural beauty, while basic mineral resources which could serve to accelerate development, appear to be extremely meagre. The country will have to be developed by making the best use of its apparently poor resources, and it is felt that the establishing of new towns as well as the conversion of existing rural villages to fully-fledged towns, can contribute towards its progress.

Phases of Development.

Using industrial development as a yardstick, many writers have shown that there appear to be four phases of national economic development, each of which poses special problems to the economist while it manifests certain features of interest to geographers, planners and other social scientists.

In the *pre-industrial phase*, in which industry contributes less than ten per cent to the gross national product of the country²⁾, the country's so-called 'economic space' is generally unstructured and its physical space poorly articulated. There is frequently only one city of consequence which dominates the country politically rather than economically. There are few, if any, cities of intermediate size, while there are a substantial number of small towns and villages. In general, a small proportion of the country's population, probably

1) Wade R.C. (1959): 'The Urban Frontier' in *The Rise of Western Cities, 1790-1830*, Harvard University Press, Cambridge, p.1.

2) John Friedmann (1966): *Regional Development Policy*, M.I.T. Press, Cambridge, p.7.

around ten per cent, lives in these towns and cities. The most important feature of this urban landscape is that the towns are independent rather than interdependent and do not form a hierarchical system as frequently found in more developed countries. The villages, in particular, have few links with the outside world and their small service-areas form a series of enclaves in the national space. Only a few towns can be regarded as central places with well-developed service functions, usually consisting of a large number of retail stores, a small market and some health and educational services.

In the *transitional phase* of development, the economic space is becoming more structured and better articulated, and the search is generally for additional growth points. At this stage of a country's development, the governments are usually involved in improving the country's transportation and communication systems in an endeavour to open up the country. Unplanned towns begin to grow at the newly established transportation nodes, and waves of migration are frequently set in motion. At this stage, regional development policies should be formulated with the object of 'creating a spatial organisation capable of sustaining transition to industrialism'¹⁾. The core-periphery spatial model begins to evolve from the previously unstructured economic landscape, and the new transportation and communication systems serve to drain the rest of the country of men and material while the core or cores grow at a fantastic rate. Resource frontiers develop in areas with adequate mineral deposits, but they merely serve and strengthen the existing core regions. The general pattern of development is therefore one of rapidly growing core regions, and possibly frontier areas, with vast intervening areas remaining stagnant while supplying labour and material to the other areas. The central-place system shows a certain hierarchical structure, and a degree of interdependence, but it tends to be unbalanced due to the dominance of the cores over the rest of the country.

In the *industrial* and *post-industrial phases* of development, the economic space of the country is well-organised and articulated, and the towns form an integrated system of interdependent central places. If new towns are developed, the object is generally to alleviate population pressures in certain metropolitan areas. Although they can be used to restructure metropolitan complexes, such towns are not of such vital importance in the development of the country as in the transitional phase when the spatial organisation of the country is still comparatively fluid.

The Present State of Malawi.

The population of Malawi was slightly over four million in 1966, and in the period 1945-1966 the rate of increase was 3.3 per cent per annum. If this growth rate is maintained, the population of the country will be in excess of six million in 1980 and over 12 million by the year 2000. In 1966 it had an overall population density of 110 persons per square mile, compared with approximately 20 in Mocambique and ten in Zambia. At the present rate of increase, the average population density will be in excess of 200 persons per square mile by 1980 and over 300 persons per square mile at the end of the century. No other country in Southern Africa will even approximate to these densities. Considering that less than 60 per cent of the total land area of the country is suitable for cultivation, there will be about 1.3 acres of cultivable land per person by the end of the century.

1) Ibid.

According to the 1966 census, 203,000 persons or five per cent of the total population live in urban areas. The provisional census report however, states that:

'only Blantyre, Zomba and Lilongwe really provide an element of urban living in the sense of persons' homes and work places being within a built-up environment. It would probably be true to say that not more than 112,000 or 2.8 per cent of the population can be regarded as being dissociated from rural living in their day-to-day lives'¹⁾.

There are 22 towns in Malawi, each with a population exceeding 1,000. Eight of these towns are situated in the Southern Region, nine in the Central and five in the Northern Region. The total population of each of these 22 centres is indicated below.

The distribution of these urban centres are shown in Map 1. It is significant that 74 per cent of the total urban population is concentrated in the Southern Region. The Central and Northern Regions respectively have 17 per cent and nine per cent of the country's urban population. Even more significant than the concentration of urban population in the Southern Region is the fact that Blantyre has no less than 59 per cent of the total urban population of the country. Blantyre together with Zomba and Lilongwe account for 80 per cent of the country's urban population. With the possible exception of Mzuzu in the Northern Region, there are practically no other towns of any significance. It can therefore be said that Malawi is not only characterised by a low degree of urbanisation, but also by an almost complete absence of any towns of any significance for development outside the Southern Region.

Besides the small towns and urban villages, there are scores of rural villages which can be divided into three functional types. The first type is purely a residential area for the farmers, while the second type has a shop and possibly a primary school as well. The third type usually has a larger residential component, a small cluster of shops, and a market which is the focal point of the town and also serves surrounding villages. They often appear at minor transport nodes and can on occasion be used as the embryo of a future regional town.

If the population of the three regions is studied separately, several interesting facts come to light. In 1911 40 per cent of the total population of the country resided in the Central Region and by 1966 this had decreased to 36 per cent. If these trends persist, the Central Region will contain only 34 per cent of the country's population by the year 2000. The relative decrease of the population in the Northern Region is even more significant. In 1911 it contained 19 per cent of the total population and 12 per cent in 1966. Under present circumstances it might contain only 9 per cent in the year 2000. These percentages are set out in Table II.

In the period between 1911 and 1966, there was a net shift of population out of the Northern Region of 270,000, and in the same period a shift of 136,000 out of the Central Region. In this period, the Southern Region therefore, gained some 400,000 persons from the other two Regions. If these past trends persist, the Northern and Central Regions will each lose another 60,000 persons to the Southern Region between 1966 and 1980. Under these circumstances, the

1) *Malawi Population Census 1966* - Provisional Report, Government Printer, Zomba.

TABLE I

Population of Urban Areas in Malawi, 1966
(Places with 1000 persons and over)

Region	Population	% of total population of Region	% of total population of urban areas
<u>Southern Region</u>			
Blantyre	109795		59
Zomba	19616		11
Balaka	1633		
Fort Johnston	1464		
Nsanje	1365		
Monkey Bay	1306		
Mlanje	1225		
Cholo	1162		
Total	137566	6.4	74
<u>Central Region</u>			
Lilongwe	19176		10
Salima	2301		
Dedza	2261		
Kasungu	1629		
Dowa	1552		
Mpanela	1310		
Ntchisi	1223		
Ncheu	1118		
Nkhota Kota	1118		
Total	31688	2.1	17
<u>Northern Region</u>			
Mzuzu	8176		9
Mzimba	4152		
Rumpi	1892		
Chitipa	1347		
Nkhata Bay	1188		
Total	16755	3.4	9
Total Malawi	186009	4.6	100

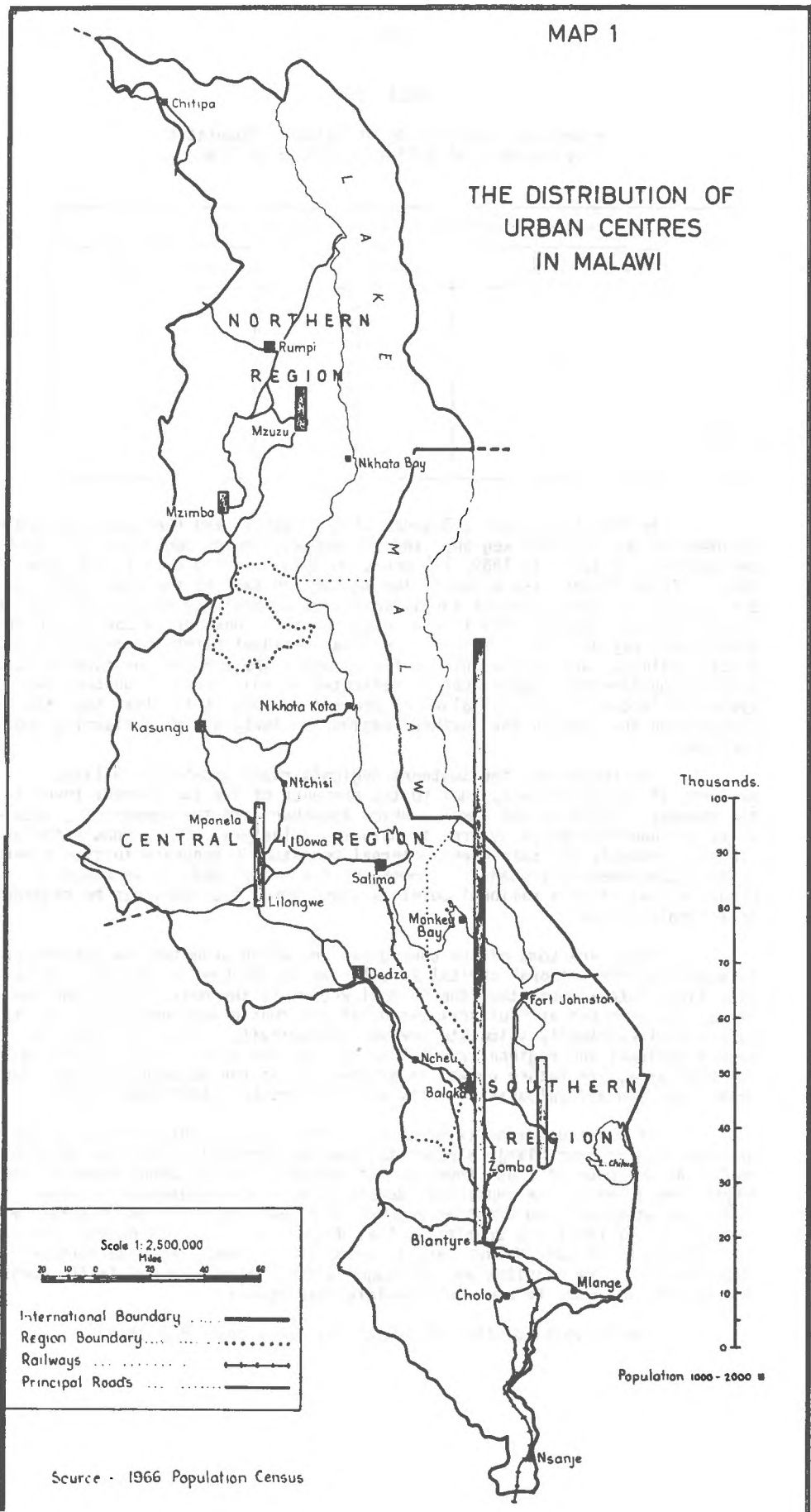
population density of the Southern Region would increase from 169 persons per square mile in 1966 to 280 persons in 1980. In contrast, the population density of the Central Region is likely to increase from 108 persons per square mile in 1966, to approximately 162 in 1980; and in the Northern Province, the increase would be from 48 in 1966 to 68 in 1980. By 1980, the population density of the Southern Region could, therefore, be nearly double that of the Central Region, and four times that of the Northern Region.

From the preceding analysis, it is evident that there has been a steady migration from the Northern and Central Regions to the south in the past few decades; and if these trends persist, 57 per cent of the country's population will be resident in the Southern Region by the year 2000.

As a result of this migration, the overall population distribution pattern is likely to become progressively more unbalanced by this tremendous concentration in the south. Table III shows the affect of this in the rural areas.

MAP 1

THE DISTRIBUTION OF URBAN CENTRES IN MALAWI



Source - 1966 Population Census

TABLE II

Percentage Distribution of Malawi's Population
By Regions, at Different Points in Time

YEAR	Percentage Distribution of Population by Region		
	Northern Region	Central Region	Southern Region
1911	19	40	41
1921	18	39	43
1931	14	39	47
1945	14	37	49
1966	12	36	52
1980	11	35	54
1990	10	34.5	55.5
2000	9	34	57

In 1966 there were 2.3 acres of cultivable land for every non-urban resident in the Southern Region; and, if present trends continue, this will decrease to 1.5 acres in 1980, 1.1 acres in 1990, and 0.8 acre in the year 2000. These figures are based on the assumption that by the year 2000, ten per cent of the population of the Northern and Central Regions, and 15 per cent of the Southern Region, will live in urban areas. However, according to the traditional way of life in Malawi, the urban resident maintains rights in his tribal village; and unless this system changes, the pressure on farming land will be considerably higher than is reflected in this table. Whether the system of land-ownership in Malawi is changed or not, it is clear that the pressure on the land in the Southern Region is slowly assuming alarming proportions.

The reason for the Southern Region's rapid growth is in large measure, if not exclusively, due to the presence of the two largest towns in the country - Blantyre and Zomba - which together form the commercial, industrial and administrative centres in Malawi. Blantyre, with a population of 110,000, probably has sufficient internal momentum to generate further growth without government assistance. Zomba, on the other hand, is so close to Blantyre that, from a national point of view, these two towns can be regarded as a single centre.

These are some of the considerations which prompted the government to establish the national capital at Lilongwe in the Central Region. It was also taken into account that the Central Region is the most fertile and that it has the greatest agricultural potential and that a developing city in its centre will eventually stimulate greater productivity. Since Lilongwe is both a national and regional capital as well as the centre of a fertile agricultural area, its future growth is assured and it can be expected that industries based on agricultural products will in time be established there.

Of the known mineral deposits in the country, only bauxite in the Southern Region near Mlanje appears to have any prospect of further development. At the present stage there do not appear to be any other minerals that might lead to mining or industrial development in the foreseeable future. There are at present no frontier regions in Malawi and the known mineral resources do not offer any promise in that direction. The fishing and recreation potential of Lake Malawi can, if properly directed, generate further development. The existing and envisaged afforestation schemes in the Northern Region can, however, be used to stimulate development.

The present position of Malawi is, therefore, that it has

TABLE III

Regional Distribution of Population, Arable Land, and Density of Population,
in Malawi in 1966, Together with Estimates for the Future

R e g i o n	Rural - Population in Thousands at the various dates				Land suitable for cultivation, in Thousands of Acres	No. of Acres per person, for the rural population at the various dates			
	1966	1980	1990	2000		1966	1980	1990	2000
Northern Region	477	656	807	986	3054	6.4	4.6	3.8	3.1
		641	775	932			4.8	3.9	3.3
Central Region	1444	2107	2796	3727	5558	3.8	2.6	2.0	1.5
		2063	2705	3520			2.7	2.1	1.6
Southern Region	1918	3096	4279	5902	4502	2.3	1.5	1.1	0.8
		3026	4108	5554			1.5	1.1	0.8
Malawi	3839	5859	7882	10615	13114				
		5730	7588	10006					

two urban nodes - one in the Southern Region which is already fairly well established, and another in the Central Region in the process of being established. With a rapidly increasing population and a poor mineral resource base, other employment opportunities will have to be created, and it is suggested that the establishing of further new towns will contribute towards this end.

New Towns.

Friedmann¹⁾ has pointed out that it is essential for countries in the transitional phase of development to formulate regional development policies geared to the overall national goal. For the sustained development of practically every region, it is essential that urban nodes should be strengthened, as they are the centres which diffuse culture and education and help to maintain political and administrative control over otherwise remote areas.

The first step in any regional development programme should, therefore, be to select a node or nodes which can efficiently perform the function of regional service and administrative centres, and simultaneously be an integral part of the national spatial framework. Most developing countries are committed to the improvement of the national transportation network, and the establishing of new urban nodes should be integrated with that network. Alternatively, the transportation network should be planned to optimise the location of these nodes. Once the broad principles and pattern of the national infrastructure have been determined, the regional pattern should be planned to give the maximum degree of articulation to the national system. It is not always necessary to establish new towns as some existing villages will be suitably situated and lend themselves to further growth. Once these points have been selected, all the other government programmes should be aimed to strengthen them by establishing health and educational facilities, decentralised administrative offices and other activities consonant with the future function and scale of the town.

It is essential that the new towns should be suitably spaced to ensure that each will have an adequate service area. In this respect, there are many problems in developing countries where vehicle ownership is extremely low and bus services minimal. The tendency is to place these towns too close together for the convenience of the inhabitants of the area but as this could lead to future stagnation of certain towns, it is desirable to have them at least forty or fifty miles apart, depending on the topography, the future population densities and the productivity of the region.

The government should, in particular, concentrate on the establishing of labour intensive industries and technical training facilities in the major centres. The normal procedure of allocating these activities at random should be avoided at all costs. If a country has a developing core region, it should form the base of the new transportation and communication network and once other growth points in this network become firmly established, the network should be further extended to encourage and include new growth points.

In the case of Malawi, it will be possible to establish a major recreation centre on the lake once the proposed lake shore road has been constructed and another road is built to Lilongwe, the nearest international airport. This will open up the southern end of the lake to international tourists. The northern end of the lake can be made more accessible by extending the lake shore road and improving transportation facilities on the lake, and establishing minor aerodromes

1) Friedmann (1966): op. cit.

in the Northern Region.

It is felt that more can be achieved in stimulating development in some areas if the locating and spacing of new towns receive greater attention, particularly in developing countries.

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TABLE

Year	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Population	1,000,000	1,050,000	1,100,000	1,150,000	1,200,000	1,250,000	1,300,000	1,350,000	1,400,000	1,450,000	1,500,000
Urban population	400,000	420,000	440,000	460,000	480,000	500,000	520,000	540,000	560,000	580,000	600,000
Rural population	600,000	630,000	660,000	690,000	720,000	750,000	780,000	810,000	840,000	870,000	900,000
Urban density	100	105	110	115	120	125	130	135	140	145	150
Rural density	20	21	22	23	24	25	26	27	28	29	30

THE ROLE OF MIGRATION IN THE DEVELOPMENT OF SOUTH AFRICAN TOWNS, WITH SPECIAL REFERENCE TO KING WILLIAM'S TOWN AND EAST LONDON*

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Migration is one of the important factors frequently involved in the development of towns and cities, and plays a key part in affecting and changing the demographic characteristics of communities.

Examining the recent history of the development of the urban population of the Republic as a whole, a very marked trend towards urbanisation is evident. Table I indicates the percentage of the population at various censuses residing in urban areas¹⁾. Diagram 1 shows the information graphically. (The curves through the points have been drawn by inspection).

TABLE I

The Percentage of Each Racial Group in South Africa Living in the Urban Areas, at Various Censuses, 1904-1960, and also Estimated for 1967²⁾

Race	Percentage of each race residing in the urban areas at various dates							
	1904	1911	1921	1936	1946	1951	1960	1967
Whites	53.6	53.0	59.7	68.2	75.6	79.1	83.6	86.1
Coloureds	49.2	50.4	52.4	58.0	62.5	66.2	68.3	70.2
Asiatics	36.5	52.8	60.4	69.5	72.8	77.6	83.2	85.8
Bantu	10.4	13.0	14.0	19.0	24.3	27.9	31.8	34.8
All non-Whites	15.4	18.5	19.3	24.4	29.7	34.0	37.9	41.0
Total Population	23.6	25.9	28.2	33.6	39.3	43.4	46.7	49.8

1) In studying Table I, it must be realised that the completeness of the enumeration of the rural population, especially in the case of the Bantu, has varied from one census to another. Thus the percentages of the population in urban areas are subject to an unknown and varied error. Comparisons from one date to another must be made with some caution.

2) The sources for the above figures are:

The years 1904-1960: Republic of South Africa, Bureau of Statistics (1966): *1966 Statistical Yearbook*, Government Printer, Pretoria, p.A24; the non-White percentages were calculated from p.A22.

The 1967 percentages were calculated from figures in Pienaar and Associates (1967): *Stats: 1967 Population, the Republic of South Africa*, Pienaar and Associates (Pty.) Ltd., Johannesburg, pp. VII and VIII.

The figures are in terms of the classification of the urban areas made as at the 1960 census. (Vide, the Republic of South Africa, Bureau of Statistics, (1966): op. cit., p.A77.) This classification is as follows:

'.... a population of 500 (all races)' (in a town is) 'the dividing line between urban and rural, with the following exceptions -

These figures, together with the graph, show changes representing major population shifts. They are not the results purely of natural population growth in urban areas.

It should be noted that the curves in Diagram 1 show a marked flattening off, especially in the case of Whites and Indians. The proportion of the White and Indian populations in South Africa living in urban areas appears to be stabilising. This gives grounds for thinking the White and Indian rural-urban migration has been slowing down, possibly because their rural population reservoirs have been depleted to the point where in future only an outflow resulting from their natural increase will occur. It may be that rural-urban migration of Whites and Indians will no longer be on such a scale as to play a major role in the continuing development of our towns.

While the curves for the Coloureds and Bantu populations also are flattening out to an extent, the fact that about three-tenths of the Coloured and two-thirds of the Bantu are still in rural areas suggests that this may be a temporary stage, and that further urban development in the Republic will draw on these rural population reservoirs.

To what extent are our towns growing and developing as the result of migration, rather than as the result of the natural increase of their resident population? Lacking census figures, this important question is impossible to answer directly. However, an estimate can be made for the White population, as the vital statistics for this group are the most accurate of the figures for our different races in the Republic.

If we know the annual rate of growth of our White urban population, and subtract the annual rate of natural increase, the balance reflects the volume of the net inflow of population from rural areas and from outside South Africa. Between 1951 and 1960 (i.e. the dates of the last two censuses in South Africa), the White urban population grew at a rate of 2.3 per cent per annum¹). The natural increase for urban Whites is unknown. For all Whites

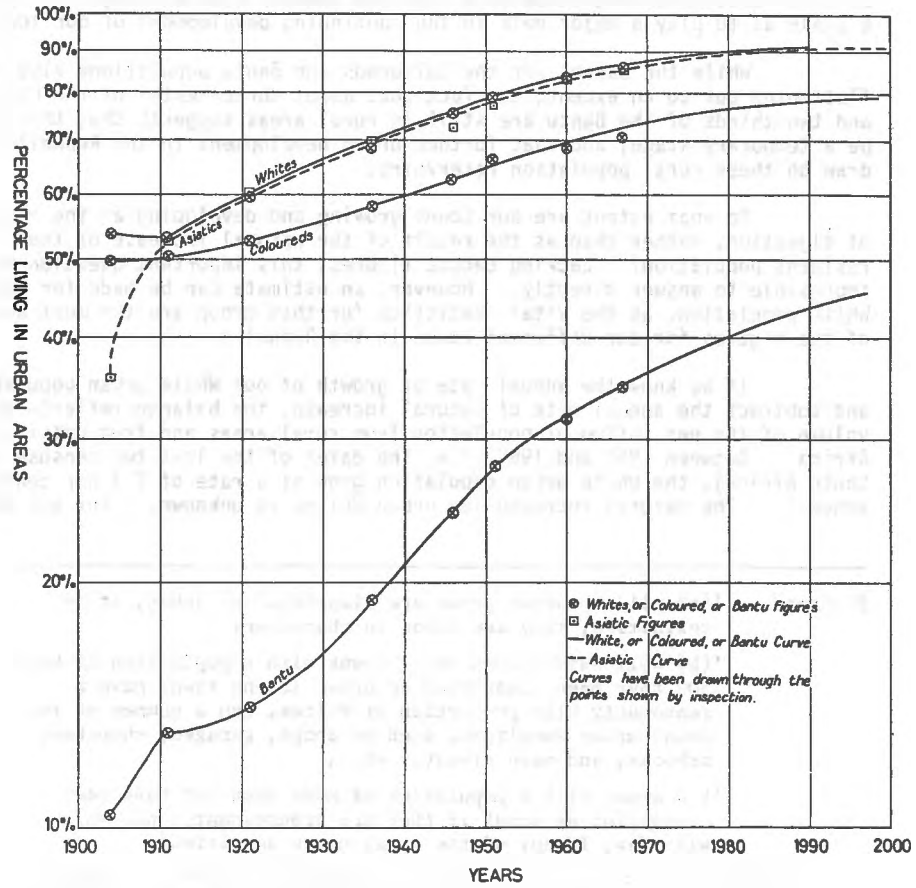
-
- 2) Contd. '(a) all sub-urban areas are classified as urban, as by definition, they are urban in character;
- '(b) well established small towns with a population of below 500 have been classified as urban if the towns have a reasonably high proportion of Whites, and a number of the usual urban amenities, such as shops, garages, churches, schools, and main streets, etc.;
- '(c) areas with a population of more than 500 have been classified as rural if they are predominantly non-White with few, if any of the usual urban amenities'.

(Republic of South Africa, Bureau of Statistics (1963): *Population Census 6th September, 1960, Vol. I, Geographical Distribution of the Population*, Government Printer, Pretoria, R.P. No. 62/1963, see p.vi.)

*Part of the material in this paper is from a study of King William's Town, and also from a study of East London. I wish to acknowledge the generous financial assistance received from the South African National Council for Social Research, Department of Higher Education, in connection with these two projects. The Council has no responsibility for any of the data I collected, or for my interpretation thereof.

- 1) Calculated from the formula $R = (1+r)^n$; where R = the population figure at the close of the inter-censal period, divided by the population at the start of the period; n = the number of years covered by the inter-censal period (which in this case was 9.33 years); and r = the rate of growth as a fraction of 1.0. Source: Barclay, G.W. (1958): *Techniques of Population Analysis*, John Wiley and Sons, New York, pp. 206-7.

DIAGRAM 1. GROWTH IN THE PERCENTAGE OF EACH RACE IN THE REPUBLIC OF SOUTH AFRICA LIVING IN URBAN AREAS, 1904-1967.



In 1967 the estimated Population, by Race, was :
 Whites 3.13 millions Asiatics 0.49 millions All Non-Whites 6.18 millions
 Coloureds 1.28 millions Bantu 4.41 millions Total Population 9.32 millions

in the Republic it was a mean of 1.6 per cent per annum for the same period¹). The urban figure is not likely to be higher and may be lower than this national figure. Therefore, at least 0.7 per cent per annum increase in the urban White population of the Republic was due to a net inflow of persons into the urban areas. Between the years 1951 to 1960 inclusive, the excess of White immigrants into South Africa over White emigrants was a mean of 7,830 per annum²). This is 0.33 per cent of the mean size of the White urban population 1951 and 1960 combined.

We can assume most of the immigrants settled in urban areas. Therefore, by subtraction this gives a figure of about 0.4 per cent or under half-a-per cent, as the estimated annual rate of growth of White urban areas produced by a net inflow from rural areas. In 1960 this would represent only 10,300 net Whites coming in from rural areas to the towns. This supports the hypothesis that it is possible our White rural population reservoir is drying up. It strengthens the argument that as far as Whites are concerned, most of the development of our towns will in the foreseeable future depend not on White rural-urban migration, but on the natural increase of Whites living in towns. In addition, population shifts from smaller urban areas to the larger ones will no doubt also affect the development of our cities.

As far as the large non-White rural population reservoir in South Africa is concerned, this will no doubt become increasingly urbanised as time passes, and will aid in the development of towns in the Republic. In the absence of relevant statistics, further comment on their migratory patterns is not possible.

It is worthwhile examining the contribution of migration to the five largest cities in the Republic. Again, because of the lack of statistics only indirect inferences can be drawn. I limit my analysis to the White population, for reasons already given. Table II for the five largest cities compares the rate of increase of the White population with the rate of natural increase, from 1951 to 1960.

TABLE II

A Comparison of the Actual Rate of Increase of the White Population with its Rate of Natural Increase, in the Five Largest Cities of South Africa, 1951-1960

City (According to rank size of the 1960 White population of the Metropolitan Area)	Annual rate of growth of the White population, 1951-1960 ³)		Mean rate of natural increase for municipal area only, 1951-1960 ⁴)	Rate of growth or decline of municipal population due to net out/inflow of Whites	Estimated No. of Whites involved by net population growth or decline relative to natural increase, at 1960 level of population
	Metro-politan Area	Muni-cipal Area			
Johannesburg	1.4%	0.8%	1.59%	-0.79%	-2,910
Cape Town	1.5%	0.4%	0.82%	-0.42%	- 810
Pretoria	3.4%	2.1%	1.97%	+0.13%	+ 210
Durban	2.8%	2.2%	1.10%	+1.10%	+1,790
Port Elizabeth	2.0%	2.0%	1.02%	+0.18%	+ 150

1) Bureau of Statistics, Republic of South Africa, (1964): *1964 Statistical Yearbook*, Government Printer, Pretoria, p.C9.

The two largest metropolitan areas in the Republic - Johannesburg and Cape Town - show a net outflow from the core city (consisting of the municipal area). This outflow is probably into the surrounding suburban areas of the metropolitan area concerned. Unfortunately, natural increase figures are not available for the metropolitan areas as a whole, which are composed of a large variety of local units.

The three remaining cities in Table II show a rate of growth in the municipal area which is faster than the average natural increase. However, only in the case of Durban does this difference amount to more than 1 per cent per annum. The last column of Table II shows that in absolute numbers the population shifts are not large, judging by the 1960 level.

It would be worthwhile to compare the rate of growth of the metropolitan population with the metropolitan natural increase, and I suggest it is time official vital statistics be kept for metropolitan areas, and not only for the patchwork of local authorities making up these areas.

At first glance, the small net population movements shown by Table II occurring in our five largest cities could be the result of only small population movements. The figures could suggest that at least as far as Whites are concerned, migration, relative to natural increase, is at present of minor importance in the development of our cities. However, these figures could mask a large population turnover, produced by a large inflow and a correspondingly large outflow of population. Is this in fact so? Secondly, to what extent, is there a large and probably *selective* turnover of population in our urban areas as a whole? The question is an important one for the planner and social scientist, as population movements and turnover, especially if these processes are selective, may well affect many facets of the development of towns and town life. Regrettably, no statistics are available. While some study has been made of the rural migrant, either Black or White¹, none of the investigations concerned provide a comprehensive picture of population movements. In particular, we know nothing about the patterns of migration into towns and between towns.

Between 1962 and 1964 I conducted fieldwork in two towns, in an attempt to gain some tentative understanding of the role of migration in the life of our towns in South Africa. In both cases only the White population of the community was studied, in order to keep down the costs of the research. The first investigation deals with King William's Town, and has already been

2) Contd. Ibid., p. B4.

3) Based on figures given in Republic of South Africa, Bureau of Statistics (1963): op. cit., Table 7, pp. 48-64.

4) Based on vital statistics kindly supplied by the Medical Officers of Health for the cities concerned.

1) As far back as 1932, Grosskopf of the Carnegie Commission on Poor Whites produced a study which in part dealt with 'Rural Impoverishment and Rural Exodus'. Schapera (1947) produced a now wellknown work on migrant labour and tribal life. At about the same period Pauw (1946) published a study on the Afrikaner in the city. This touched on migration. Even more recently, the Governmental Commission of Enquiry (1959/60), op. cit., published a report on a study of European occupancy of rural areas. It dealt fairly extensively with rural depopulation of certain areas.

published¹). It concerned a static small town in the Border Region of the Cape Province. The second study, which is not yet published, relates to the city of East London and its adjoining suburb of Beaconsburg²). East London, a port city, is the metropolitan centre of the Border region. Situated about 40 miles away by road from King William's Town, its White population was almost stationary at the time of the investigation. Table III gives details of the growth of the White population in these two towns.

TABLE III

Growth of the White Population of King William's Town³) and East London⁴), 1951-1960

Town	Rate of Increase in Whites		Net relative inflow or outflow of population annually	
	Actual increase recorded by census, 1951-1960	Mean rate of natural increase 1951-1960	%	Estimated No. at 1960 census
King William's Town	0.526%	1.051%	-0.525%	- 35
East London	1.01%	1.44%	-0.43%	-206

Source: King William's Town: Watts (1966a): op. cit., p.44.
East London: Watts, H.L. : Unpublished MS.

In the case of King William's Town, Table III reveals an average net outflow of Whites from the town at the rate of $\frac{1}{2}$ per cent per annum, while in East London the figure is 0.43 per cent per annum⁵). This outflow has been responsible for keeping the White populations almost stationary⁶). Therefore it was with surprise that I found evidence of considerable population turnover occurring in the White populations of both towns. Table IV provides details.

- 1) Watts, H.L. (1966a): *South African Town : Some Community Patterns and Processes in the White Population of King William's Town*, Institute of Social and Economic Research, Rhodes University, Grahamstown, Occasional Paper No.8. See also by the same author - (1966b): 'The Main Findings of the Sociological Study of the White Population of King William's Town', *Journal for Social Research*, 15, No.1, (June), 29-39.
- 2) The census definition of metropolitan East London was not taken on the grounds that it was desired to take a physical/social unit made up by East London. Some of the outlying communities which seemed to be separated to an extent from East London itself, such as Collindale, Bonza Bay, etc., were excluded.
- 3) The municipal area of town covers the built-up area, and was studied.
- 4) The built-up area of East London covers East London Municipality and the suburb of Beaconsburg. This whole area was covered by the survey. However, in Table III only the municipal area is dealt with, as vital statistics for the full survey area were not obtained.
- 5) Calculated from figures given in Republic of South Africa, Bureau of Statistics (1963): op. cit.
- 6) Watts (1966a): op. cit., p.44.

TABLE IV

Duration of the Most Recent Stay in the Town, for a Sample of White Adults, in King William's Town, 1962 and East London, 1964, (Measured from Date of Entry to the Town to the Date of the interview)

Duration in years of the most recent stay in the town	Percentage of Sample of Adults from			
	King William's Town		East London	
	%	Cumulated %	%	Cumulated %
0 - 4 years	15.4	15.4	22.0	22.0
5 - 9 years	13.8	29.2	15.2	37.2
10 - 19 years	26.5	55.7	22.7	59.9
20 - 29 years	12.0	67.7	10.9	70.8
30 years or more	32.3	100.0	29.2	100.0
Total	100.0		100.0	

Note: The King William's Town figures were based on a aystematic sample of 401 completed cases for adults drawn from the voters roll for King William's Town, and 636 completed cases for adults drawn by means of a three-stage stratified sample for East London.

It is estimated that of the adult White population in King William's Town about three-tenths, and almost two-fifths in East London, had lived in the town for less than 10 years. Given White populations growing more slowly than their rate of natural increase, this volume of inflow requires a slightly larger outflow of people. This being so, it implies during the course of a decade a combined inflow/outflow of population equivalent to about three-fifths of the adult Whites in King William's Town, and about three-quarters of those in East London. This is indeed an unexpected considerable volume of population turnover. This turnover does not imply, for instance, that three-fifths to three-quarters of the people living in these communities leave within ten years, as part of the population is stable, staying for long periods, and part consists of what has been described as nomads¹⁾. The rate of turnover of different socio-economic strata in a population varies²⁾.

Measures of migratoriness are affected in part by the age of the persons concerned - i.e. the period of time during which the individual has been exposed to the possibility of migrating. One way to try to measure how far the population of the two towns has lived there, relative to age, is to analyse the percentage of their life people have spent in a town. Table V provides details for the King William's Town and East London samples; Diagram 2 portrays the figures in King William's Town in ogive-form.

The shape of the two curves is very similar. The only real difference is that East London has a lower percentage of adults who have spent 100 per cent of their life up to the time of the survey in the city. About one in four of adults in King William's Town, and over one in six of those in East London, had lived 100 per cent of their life in the town concerned.

It is noteworthy that even though the White population of King

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- 1) Goldstein, S. (1955): 'Repeated Migration as a Factor in High Mobility Rates', *American Sociological Review*, 19, 536-41.
 - 2) Vide Watts, H.L. (1966a): op. cit.

TABLE V

Percentage of Life which White Adults have spent in King William's Town, 1962, or East London, 1964, as the case may be

Per cent of life spent in community concerned	Adults in King William's Town			Adults in East London		
	Estimated Number	% known cases		Estimated Number	% known cases	
		%	Cumulated %		%	Cumulated %
0 - 9	420	14.5	14.5	4490	16.4	16.4
10 - 19	280	9.6	24.1	2810	10.3	26.7
20 - 29	290	9.9	34.0	2580	9.4	36.1
30 - 39	220	7.5	41.5	2510	9.2	45.3
40 - 49	260	8.8	50.3	1700	6.2	51.5
50 - 59	160	5.4	55.7	3140	11.5	63.0
60 - 69	180	6.3	62.0	1190	4.3	67.3
70 - 79	140	4.8	66.8	1360	5.0	72.3
80 - 89	170	5.7	72.5	1310	4.8	77.1
90 - 99	100	3.3	75.8	1350	4.9	82.0
100%	710	24.2	100.0	4970	18.0	100.0
Unknown	50	-		380	-	
	2980	100.0	-	27790	100.0	-

Note: Percentages for King William's Town were based on the unrounded data from the sample. In this case they were the result of a simple random sample of 195 White occupied properties in the town.

East London data are from a three-stage stratified sample of 636 responding adults.

William's Town and East London is more or less stationary, the adult population is mainly composed of people who have lived in one or more other towns or rural areas. Tables VI and VII give further figures pointing to the extent of migration amongst White adults. Diagrams 3 and 4 show the data in graphic form. The pattern for King William's Town and East London is very similar. The data indicate that in both towns we are dealing with a population containing an important number of persons who have been highly mobile spatially. For example, in East London, nearly two out of every five adults are estimated to have spent less than ten years on average per place they have lived in during their life prior to being interviewed. In King William's Town, the proportion is somewhat lower, standing at about one-third. Roughly one in eight adults in each town has lived on average less than six years per town or rural area.

From what types of communities are these two towns in the Border region drawing their population, and what are the effects of all this population movement on the communities concerned? Are the movements selective, and how do they affect population structure and community life? There is time to sketch in only some of the picture emerging from my research. The tables show that considerable population turnover must be occurring.

Both towns are drawing population from far afield. East London is drawing adults from an average distance of 314 miles. King William's Town has less pulling power, for the mean distance of the previous place of residence is 165 miles, excluding overseas cases. Including them, the figures rise to 703 as against 341 miles. Table VIII gives details, while Diagram 5 graphs the data.

DIAGRAM 2. OGIVE OF THE PERCENTAGE OF LIFE SPENT IN KING WILLIAM'S TOWN AND EAST LONDON, FOR A SAMPLE OF WHITE ADULTS

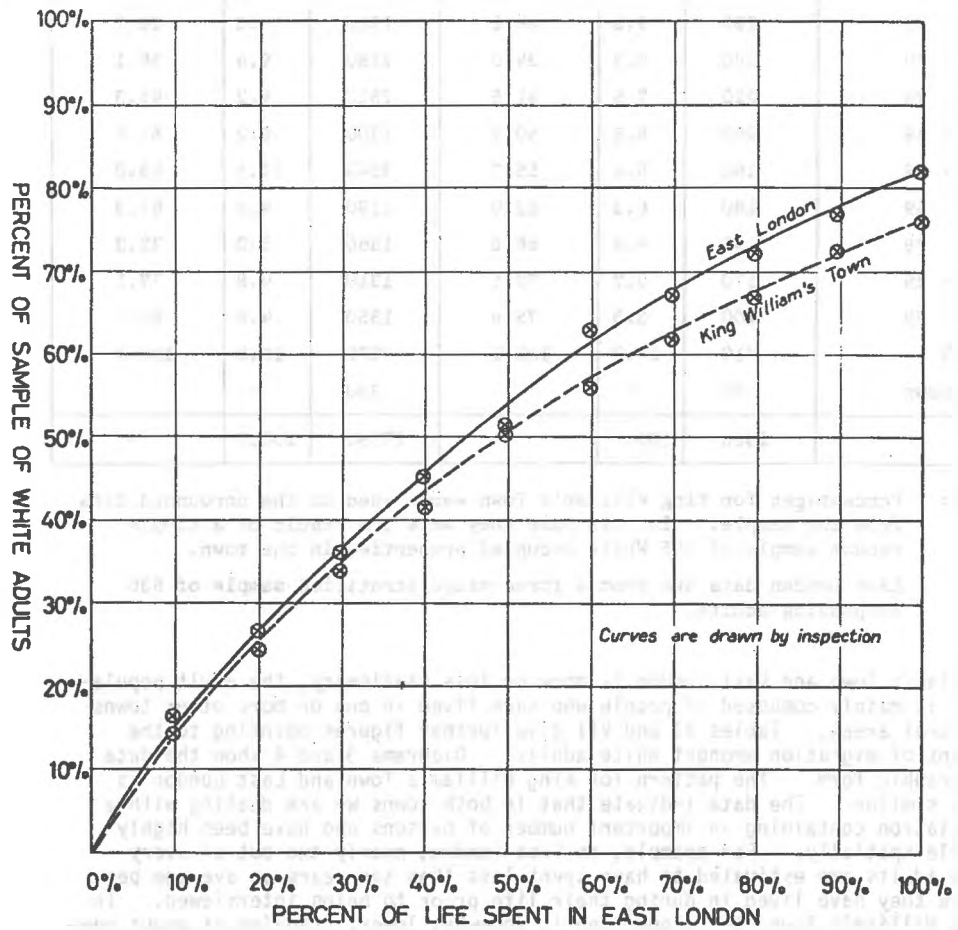


TABLE VI

Total Number of Moves made, and Number of Towns and Rural Areas Lived in, since Birth, and since 18 years of Age, by a Sample of White Adults from King William's Town, 1962 and East London, 1964

Total Number of		PERCENTAGE DISTRIBUTION							
		Whole Life Until Interview				Since Age 18 Years			
Moves made	Towns/Rural Areas Lived in	King William's Town		East London		King William's Town		East London	
		%	Cumulated %	%	Cumulated %	%	Cumulated %	%	Cumulated %
0	1	15.2	15.2	18.4	18.4	34.7	34.7	37.0	37.0
1	2	22.8	38.0	18.8	37.2	19.9	54.6	17.1	54.1
2	3	19.8	57.8	18.9	56.1	16.5	71.1	17.8	71.9
3	4	14.3	72.1	14.1	70.2	9.8	80.9	10.8	82.7
4	5	8.8	80.9	9.4	79.6	7.5	88.4	5.3	88.0
5	6	5.5	86.4	6.3	85.9	4.1	92.5	3.9	91.9
6	7	4.0	90.4	4.8	90.7	2.6	95.1	2.8	94.7
7	8	3.5	93.9	2.8	93.5	1.1	96.2	1.4	96.1
8	9	2.3	96.2	1.2	94.7	1.9	98.1	1.9	98.0
9	10	1.3	97.5	3.3	98.0				
10	11			0.5	98.5				
11	12			0.8	99.3	1.9	100.0	2.0	100.0
12	13	2.5	100.0	0.2	99.5				
13	14			0.2	99.7				
14	15			0.3	100.0				
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
MEANS									
No. Moves		2.73		2.79		1.91		1.87	
No. Places Stayed In		3.73		3.79		2.91		2.87	

Note: Cases with insufficient information have been excluded, and percentages calculated for known cases only. The estimated number of White adults in King William's Town in 1962 was about 2,850 (using this sample and not the different sample for Table V which estimates 2980); in East London in 1964, 27,790.

DIAGRAM 3. OGIVES FOR THE NO. OF MOVES FROM ONE TOWN/RURAL AREA TO ANOTHER MADE BY A SAMPLE OF ADULT WHITES FROM EAST LONDON AND KING WILLIAM'S TOWN.

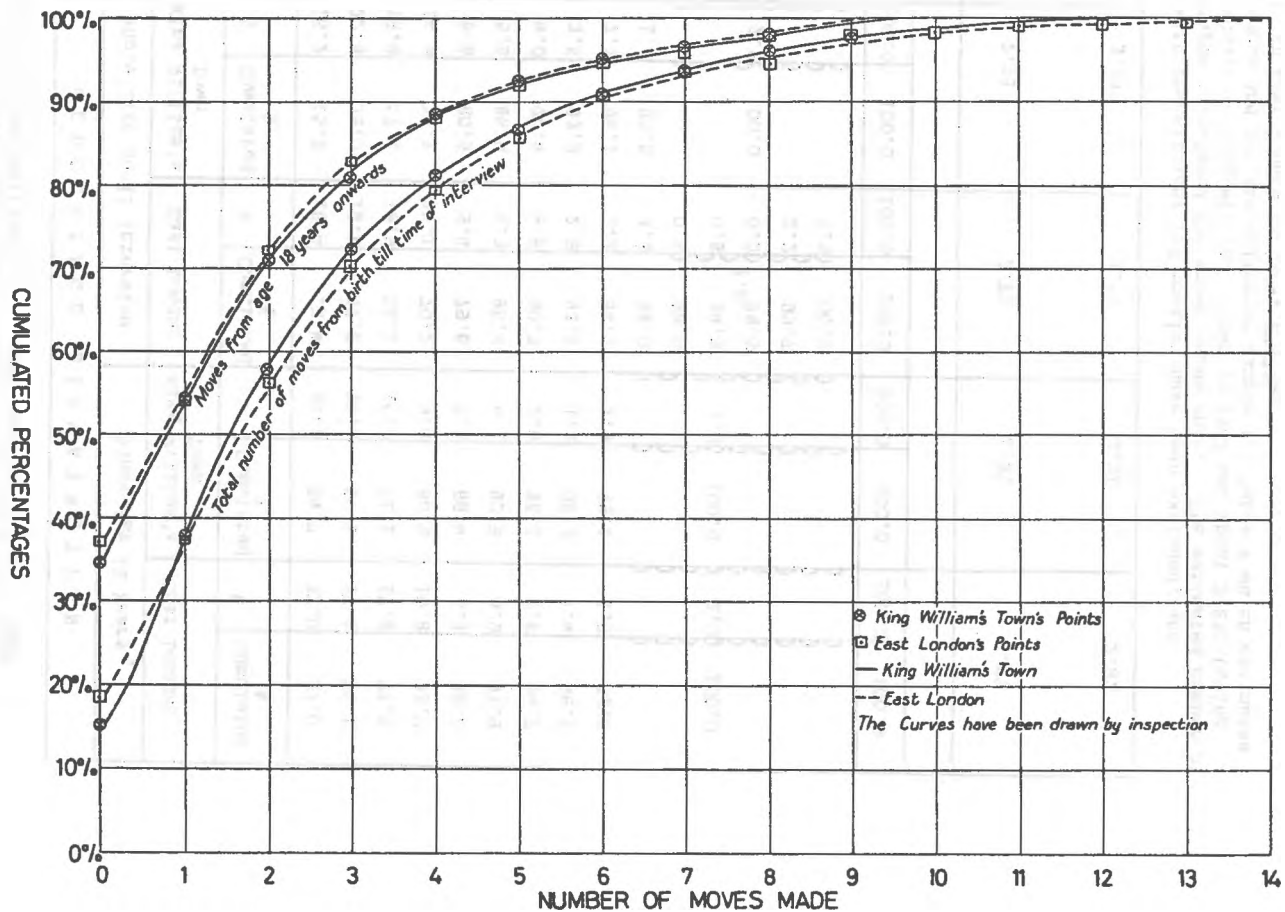


TABLE VII

Average (Mean) Length of Stay per Place since Birth for a Sample of White Adults from King William's Town in 1962, and from East London in 1964, Together with Average Length of Stay per Place from Age 18 Years Onwards for the East London Sample

Mean length of stay per town/rural area, in years	King William's Town		East London			
	Life up till survey ¹⁾		Life up till Survey		From age 18 years till survey	
	%	Cumulated %	%	Cumulated %	%	Cumulated %
0 - 2 years	0.3	0.3	...	...	...	...
(0 - 4) "	...	...	6.6	6.6	29.7	29.7
3 - 5 "	11.6	11.9	...	...	...	...
6 - 9 "	21.1	33.0	...	...	...	...
(5 - 9) "	...	...	31.1	37.7	26.9	56.6
10 - 14 "	18.8	51.8	20.5	58.2	15.1	71.7
15 - 19 "	13.8	65.6	10.8	69.0	8.3	80.0
20 - 24 "	10.1	75.7	6.8	75.8	7.1	87.1
25 - 29 "	6.3	82.0	3.5	79.3	4.1	91.2
30+	18.0	100.0	20.7	100.0	8.8	100.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

- Notes:
- 1) The percentages are for cases providing sufficient information.
 - 2) No data on mean length of stay per town/rural area from age 18 years onwards, were available from the King William's Town study.
 - 3) The information for 'life up till survey' - i.e. from birth onwards - for East London is preliminary, and may have to be slightly adjusted once the final tabulation has been prepared.

People are drawn from a variety of areas, and from different types of rural-urban backgrounds. However, as Table IX shows, urban backgrounds predominate. The figures in this table show the complexity of migration occurring, and suggest strongly that large scale *inter-town migration* is occurring, at least among Whites, in South Africa. Most of the reasons for migration seem to be economic in the case of men, and kinship ties in the case of women. Table X gives details. As the women usually migrate because of economic factors affecting their kin, we can agree with Pihlblad and Gregory (1952) that migration seems primarily motivated by the search for occupational opportunity²⁾.

This agrees with post-war research findings in the United States³⁾.

- 1) Watts, H.L. (1966a): op. cit., p.165.
- 2) Pihlblad, C.T. and C.L. Gregory (1952): 'Occupation and Patterns of Migration', *Social Forces*, 36, 56-64. Also see Price, D.O. (1951): 'Some Socio-Economic Factors in Internal Migration', *Social Forces*, 29, p.410.
- 3) United States of America, Bureau of Census (1957): Current Population Reports, Series P-20, No.4, *Post-War Migration and its Causes in the United States: August, 1945 to October 1946*, Department of Commerce, Washington, D.C.

DIAGRAM 4. OGIVES FOR MEAN LENGTH OF STAY PER PLACE FOR A SAMPLE OF WHITE ADULTS FROM KING WILLIAM'S TOWN AND EAST LONDON.

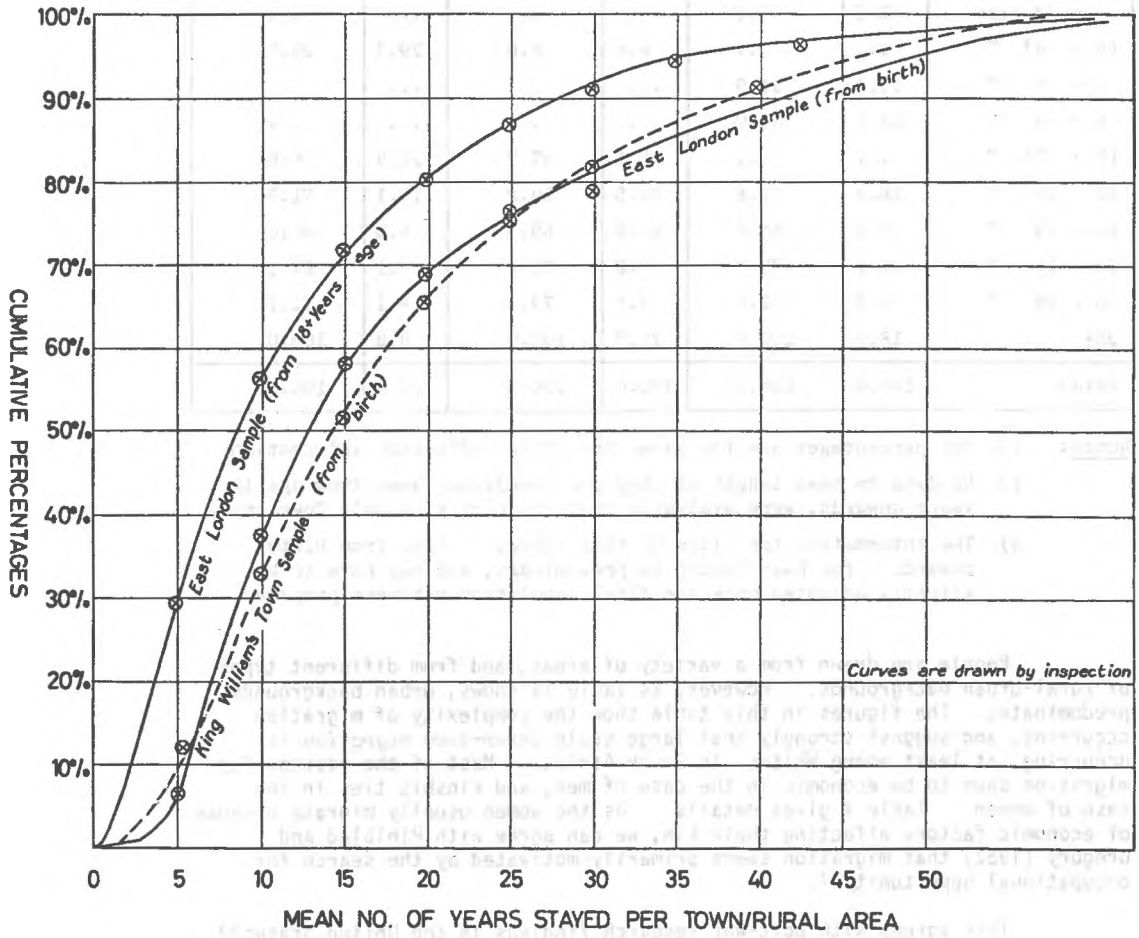


TABLE VIII

Distance of Last Place Lived in, Measured in Miles Along a Radius, From King William's Town, 1962, or East London, 1964, for a Sample of Adult Whites from Each Town (Known Cases Only)

Distance away from towns measured in miles along a radius	Percentage Distribution of Adults in King William's Town		Percentage Distribution of Adults in East London	
	%	Cumulated %	%	Cumulated %
0 miles	14.5	14.5	18.6	18.6
1 - 24 miles	25.5	40.0	1.0	19.6
25 - 49 miles	21.3	61.3	5.1	24.7
50 - 74 miles	5.0	66.3	3.5	28.2
75 - 99 miles	2.3	68.6	4.3	32.5
100 - 199 miles	9.3	77.9	17.9	50.4
200 - 499 miles	6.3	84.2	19.5	69.9
500 - 999 miles	11.3	95.5	20.7	90.6
1000+	1.5	97.0	2.2	92.8
Overseas	3.0	100.0	7.2	100.0
Total	100.0	100.0	100.0	100.0
MEAN DISTANCE (excluding overseas cases)	165 miles		314 miles	
Including overseas cases	341 miles		703 miles	

Regrettably, it is not possible at present to test detailed theories of migration (such as 'the socio-economic push/pull' type of theories, or the 'size-distance or gravitational' type of theories, if I may copy Anderson's labels¹). Such testing must await detailed statistics collected at a national level by the Bureau of Statistics.

- 1) Anderson, T.R. (1956): 'Intermetropolitan migration : A Correlational Analysis', *American Journal of Sociology*, 61, 459-62. Examples of the 'Socio-economic push/pull theory' are provided by Isaac, J. (1947): *Economics of Migration*, Kegan Paul, Trench, Trubner and Co., London, or Goodridge, C. et. al. (1936): *Migration and Economic Opportunity*, Philadelphia, University of Pennsylvania Press, or Thomas, D.S. (1942): *Social and Economic Aspects of Swedish Population Movements, 1750-1933*, McMillan, New York. Examples of the 'Size-Distance' or 'Gravitational Theory' explaining migration are Stouffer, S.A. (1940): 'Intervening Opportunities : A Theory Relating Mobility and Distance', *American Sociological Review*, 5, 845-57, or Zipf, G.P. (1946): 'The P_1P_2/D Hypothesis : On the Inter-City Movement of Persons', *American Sociological Review*, 11, 677-86, or Dodd, S.C. (1950): 'The Interactance Hypothesis : A Gravity Model Fitting Physical Masses and Human Groups', *American Sociological Review*, 15, 245-56.

DIAGRAM 5. OGIVES OF THE DISTANCE OF THE LAST PLACE OF RESIDENCE FROM EAST LONDON, OR KING WILLIAM'S TOWN, MEASURED ALONG A RADIUS FROM THE TOWN CONCERNED, FOR A SAMPLE OF WHITE ADULTS FROM THE TWO TOWNS.

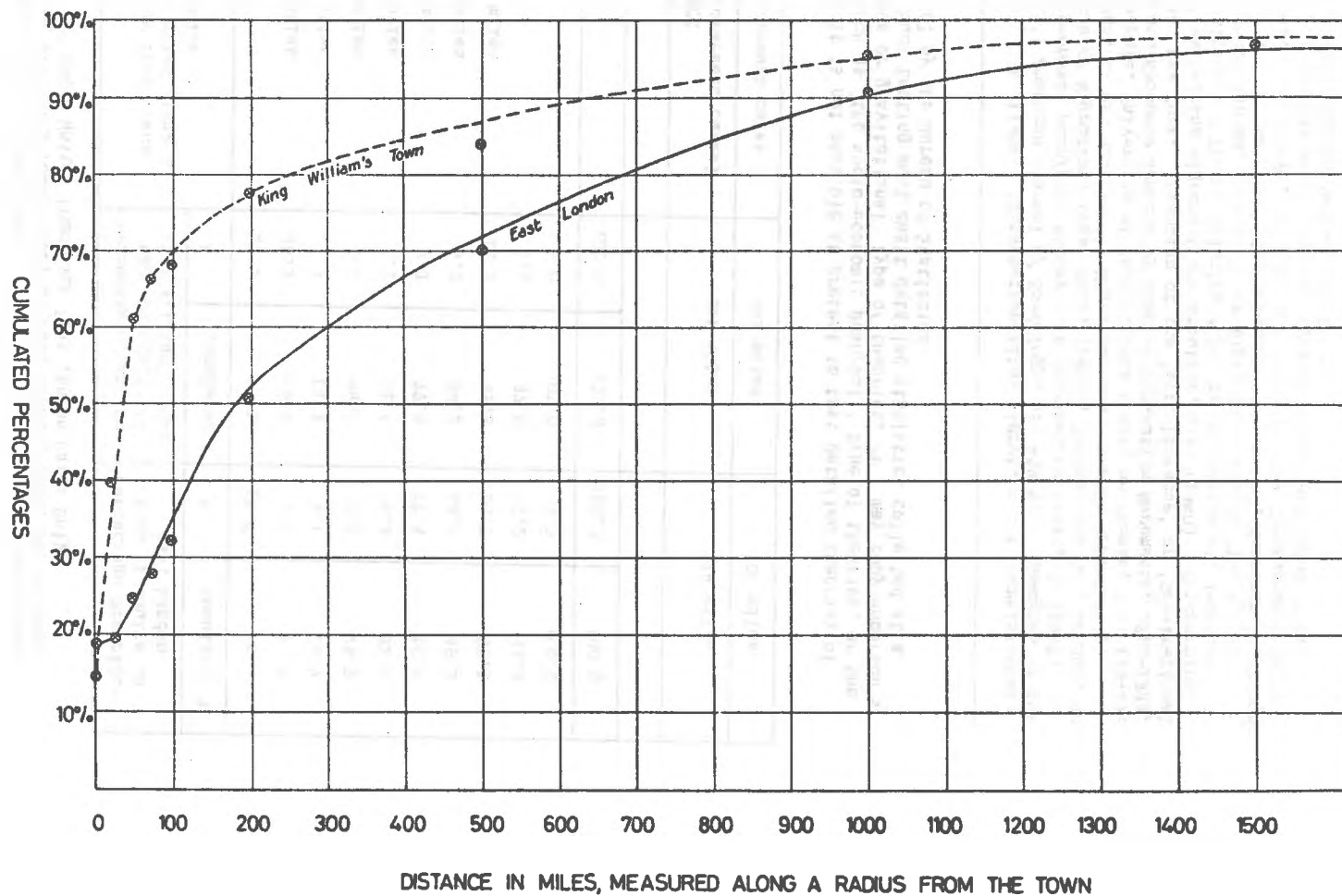


TABLE IX

Rural-Urban Pattern of Moves during Life up to the Time of the Study, for a Sample of Adult Whites from King William's Town in 1962, and from East London in 1964

Rural-Urban Pattern of Moves Prior to Coming to the Town	King William's Town		East London	
	Estimated No. Adults	%	Estimated No. Adults	%
From medium towns and cities (with 6000+ Whites in 1960)	1020	35.9	7560	27.2
From small towns (under 6000 Whites in 1960)	210	7.4	970	3.5
Sub-Total for Urban Areas	1230	43.3	8530	30.7
From farms and rural non-farm areas	460	16.2	3590	12.9
Rural to urban areas	480	16.9	2920	10.5
Sub-Total for those Originally from Rural Background	940	33.1	6510	23.4
Mixed Rural-Urban Pattern of Moves From overseas/elsewhere in Africa (without first being in S.Africa)	170	6.0	2150	7.7
From overseas via rural areas/small towns	60	2.1	1800	6.5
From overseas via S.A. medium towns/cities	?	?	110	0.4
	?	?	1890	6.8
Sub-Total for from Overseas/From Outside S.Africa	60	2.1	3800	13.7
From hometown, then elsewhere	?	?	1070	3.9
Stayed in hometown all life	430	15.1	4990	18.0
Unclassifiable	10	0.4	740	2.6
Total	2840	100.0	27790	100.0

An unexpected finding of the King William's Town's study, and also the East London investigation, is the importance of kinship ties in connection with migration. Two-thirds of the White adults in King William's Town have either parents or more distant relatives in the town. Only one-third had never had any relative living there. The figures for East London were virtually identical. The findings suggest that despite a high level of spatial mobility in our urban populations, kinship ties within a town are still important.

Some of the ways in which migration affects the White community of King William's Town may be summarised as follows:

'Despite considerable individual variation, it is true to say that the better educated, more intelligent young people tend to leave King William's Town and gravitate to clerical and professional jobs in other centres. On the other hand, the less well educated, and those with lower intelligence, seem to be more likely to stay in the town after completing their schooling. Migration of young people out of the town thus is selective and follows the lines described by some American studies.

TABLE X

Reasons Given by a Sample of White Adults from King William's Town, 1962, and also from East London, 1964, for being in the Town Concerned

Reasons Given For Being In The Town	King William's Town ¹⁾	East London
	%	%
To get a job or start business in town	16.0	16.7
Transferred	7.2	11.4
Moved with parents	17.9	16.1
Moved with or to spouse	15.5	17.1
To be with or near relatives	5.0	1.8
Health reasons (own or family)	5.0	3.0
Educational/training purposes	3.5	1.2
Returned because missed it	2.7	3.5
Retired	1.2	4.4
Other reasons	10.0	6.4
Born and never left	15.5	17.4
Unknown reasons	0.5	1.0
Total	100.0	100.0

'... the town appears to be losing a disproportionate number of the better-educated, more intelligent young adults.... this outflow is counter-balanced by a selective inflow of migrants. It was found that the newcomers to the town tended as a group to have above average education, and therefore presumably above average ability. The present office bearers of the various clubs and associations in the town, and the town councillors, are very largely drawn from the ranks of the migrants who have come into the town in later life. Thus there is an interchange of ability going on between King William's Town and other communities. It is mainly to the larger towns and cities of the Republic that the young, able adults of the town go - and it is mainly from these areas that the town draws its present leaders and influential adults. There are thus no grounds for assuming that the skill, education, and training of the Whites in the town are gradually being depleted

'Occupation is linked with migratory mobility' (both in terms of frequency of moves and distance covered) 'and with urban background the urban migrants in the town tended to have the highest socio-economic level, and participate most in community affairs. This is in agreement with the finding of Blizzard and John, in their study of Pittsburg, U.S.A.²⁾.

1) Watts (1966a): op. cit., p.54.

2) Blizzard, S.W. and M.E. John (1952): 'Social Participation and Patterns of Husbands and Wives who are Migrants in the City', Paper No.1722, *Journal Series*, Pennsylvania State College. The quotes are from the paper by Watts, H.L. (1966a): op. cit., pp. 31-36.

At this stage it is not possible to give full results of those of the East London findings which parallel the above details for the King William's Town research. Preliminary investigations of the data collected suggest that unlike King William's Town, social participation amongst Whites in the city is not associated to any important extent with migratoriness or migratory behaviour. Rather, there is a slight suggestion that the more stable type of person (stable in terms of migratory history, with a longer length of stay in the town) takes a greater part in the community affairs. If so, this might well reflect the difference between life in a small town and that in a city with its wider range of social organisations, and broader spectrum of social activities.

The White elite in the city¹⁾ who were very largely from outside East London, (only 14 per cent were born in the city), tend to come from further afield than the general adult White population of the city. Excluding overseas-born, the average distance of their birthplace was 492 miles, against 314 miles for all White adults.

As with King William's Town, in East London the school leavers who have left the city tend to have a higher I.Q. than those who have stayed behind²⁾. The differences are not large, but suggest that some selection is involved. These results agree with some American findings³⁾.

Further details of the way migration may or may not affect the life and development of East London must await the completion of the analysis of the survey results.

Concluding Remarks.

In conclusion, the evidence from the studies of King William's Town and East London points to the likelihood of a considerable population turnover occurring amongst our White populations in the towns and cities of South Africa. This turnover tends to be socially selective. The volume of inter-town migration may be far larger than previously anticipated. If, as I have suggested, the rural reservoir of Whites is drying up, then inter-town migration will probably become crucial in the future development of our cities. Will the larger towns grow bigger at the expense of the smaller? If this occurs, the implications could be far-reaching.

What are the population movements involved by our non-White populations? Are they relatively as great, or greater than movements of Whites? How selective are they, sociologically? How do they affect the development of our towns? we do not know, and social scientists should study the topic.

I could go on raising important questions, but suffice. My research has convinced me of the need for much more research by many scientists. Our ignorance in this regard as students of society is serious. I plead strongly for research, and for the collection of national statistics on

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- 1) The 'elite' were, for reasons of cost and time available, operationally defined as individual persons listed on the East London Mayoral reception list. This covered all the important formal leaders and office bearers in the city.
 - 2) Amongst the boys, those who stayed in East London had an I.Q. of 102; those who had left for larger cities had an I.Q. of 111, whereas those in the other parts of the Republic had about the same I.Q. as those who stayed. Similarly for the girls, those who stayed in East London had an average I.Q. of 106; for those who were in other cities of South Africa 113, and those in other areas of the Republic 109.
 - 3) Watts, (1966b): op. cit., footnote 12, p.38.

population movements and for vital statistics for metropolitan areas as units. Such research and information is essential for understanding the development of our towns, and is of importance for planning.

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Note: A list of the important publications, except the most recent ones, in the field of migration insofar as it relates to this paper, will be found in the reference to Watts (1966a).

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DISCUSSION ON THE SECTION
'HISTORY AND DEVELOPMENT OF TOWNS'

This section of the Conference proceedings was spread over two sessions, each with its own discussion. The discussion at the end of the first session was formally introduced by Professor Davies of the University of Natal. He opened by pointing out that the four speakers 'laid stress upon events, decisions, and development patterns of the past as they have affected four different cities. Now the historical record of past development is important in its own rights as the essential part of our cultural heritage and social capital. However, in terms of the particular needs of contemporary urban man, the value of the papers goes beyond the mere level of recording past events. Their real value to us at the present time lies also in the isolation, analysis and explanation of urban growth processes, many of which are as relevant today as they may have been in the past'.

He went on to make the point that it 'is essential that we encourage the historical approach in the study of cities in order for us to understand the way in which urban growth processes operate ...'

Professor Swanson stressed the role of the city as a powerful and perhaps over-riding force in the development not only of local policy and legislation, but also of national policy and national legislation. This view 'stresses the traditional role of the city as arbiter for human affairs'.

Professor Davies went on to question whether in many parts of South Africa today the city was arbiter and whether the carry-over by migrants of traditional attitudes from rural areas to cities plays any part in the determination of attitudes and policies of the cities. He queried to what extent the city is able to change traditionally-held views of rural migrants. He felt that this was an important issue, and of significance at the present time, given the rapid urbanisation of the Afrikaner population.

In regard to Councillor Tanser's paper, Professor Davies commented that in giving the historical view of the evolution of a city, the paper stressed the part played by individual personalities in urban growth processes, and the responses which a growing city must make to changing local, national and international pressures. Professor Davies felt that the lesson here was 'the obvious need for a comprehensive and widely-based approach to the analysis of cities' development', and the need for building contingency-planning into master plans for cities.

In Professor Davies' view, Mr. Beavon's paper showed how physical services provided within a town can affect the form and nature of its growth. He felt that this suggested that the physical services of a city could be used more adequately for guiding future development for directing the spatial development of cities.

Lastly, commenting on Dr. Smith's paper, Professor Davies felt that the paper suggested that public enquiries should always have as a major part of their objectives a very careful assessment of the long-term effects of decisions made to solve the immediate problems. In South Africa the creation of many small local authorities within the large metropolitan areas, (created to satisfy local and perhaps short-term needs), was a close parallel to the case in Falkirk. Durban, the Witwatersrand and Cape Town were, for example, areas showing this problem.

Mr. Jordan of the University of the Witwatersrand, commented that 'it still seems to be almost inevitable that people should adopt the approach of the local government area, without setting the problem in its regional background. So much is this the case that we have at this Conference papers on towns within 60 miles of each other, namely Port Elizabeth and Uitenhage, which are each presented as dealing with the problems respectively of Port Elizabeth and Uitenhage. And yet, in many ways, it might be argued that the most interesting thing about Port Elizabeth and Uitenhage is the extent to which

Uitenhage could provide a suitable locus to which the activities - the surplus activities of Port Elizabeth - could be decentralised ...' He felt that 'sometimes the most interesting thing about even the best papers is the things they do not say'.

He also considered that the case of Falkirk illustrated the 'wholly inappropriate approach' adopted by decision-making bodies, such as local Government Enquiry Commissions. Experts should not be used by the conflicting parties, but first of all the conflicting interests should be demarcated, and then the experts used to advise on all the issues, rather than taking sides. Dr. Smith in replying agreed with the latter point whole-heartedly, and added that most people seem to have basic loyalties towards local Government more than any other unit that they identify with - most people do not think in terms of the regional context, but in terms of their local loyalties.

Councillor Dr. Robertson of Salisbury joined in the discussion, by commenting that 'the position in which we find ourselves in Salisbury... illustrates this imposition of a possible regional problem upon an immediate local problem ... Salisbury has developed exactly like a star fish with a centre (conglomerate centre), and radiating out from it eight different town management board areas'.

These local board areas were allowed to develop during the war, when the City of Salisbury experienced a good deal of pressure and could not afford to incorporate these areas. Now the local town management boards 'have fierce local pride and are very anxious to keep their own individuality ...' 'This ... is enormously hampering the proper development of Salisbury as a city, and the Salisbury City Council is therefore faced with increasing problems ...' of financing out of its own resources services for people from the region as a whole. Despite several years spent on trying to achieve a consensus of opinion between the City Council and the eight town management boards, a solution seemed no nearer ...

Joining in the discussion on forces affecting the pattern of development of individual towns, Dr. E. G. Malherbe (of Salt Rock) raised the point that military authorities and the needs of defence may sometimes play a major determining role in shaping cities. He discussed this with reference to the city of Adelaide in Australia. Professor Swanson commented that he wondered to what extent studies of the territorial instincts, (which some scientists have contended man has acquired during the course of his evolution as an animal), would throw light on some of the difficulties experienced by planners. He further developed the point that planning inadequacy and planning mistakes are often only seen as such in the light of history - that decisions made at a particular point in time seem eminently reasonable to contemporaries. This point was illustrated by reference to the history of Durban - he recalled that the ideal solution of the day in the 1880's, 1890's and early 1900's as far as providing amenities for the Bantu flooding into the towns was concerned, was to select as locations portions of the eastern plain and around the Umgeni River mouth. These locations were seen as garden areas where the Africans could reproduce for themselves under municipal control, conditions familiar to them in their rural life. He said that when these decisions were made, '... no-one apparently envisaged the growth of Durban as it has come to be in the middle of the Twentieth Century; and it is perfectly obvious that under the sway of later ideas, the placing of such masses of people in what is now the built-up area - a large part of it in Durban - would have been a great mistake. Likewise we have had to phase-out the barracks and compound housing which were the only sensible solutions to a housing problem of 50 years ago'.

Finally, referring to the point raised by Professor Davies about the attitude of people coming from the country into the cities, he contended that in the case of Durban, long before the poor Whites had migrated into the city, the basic programme and principles covering later action had been accepted by the urban dwellers in the city. Professor Beinart of the University of Cape Town and Dr. Smith also contributed to this aspect of the discussion.

The discussion on the second section of the history and development of towns was formally introduced by Mr. Jordan of the University of the Witwatersrand. He raised some questions which the authors of the papers subsequently answered. (Professor Viljoen's paper was read for him in his absence, as he had not been able to attend the Conference personally, and therefore it was not possible to have him answer some of the questions raised).

A fairly extensive discussion took place on migration, sparked-off by the paper on East London and King William's Town. Mr. Jordan supported the plea for statistics to be collected by the census in future, and Professor Watts again underlined the need for statistics not only for Whites but also for non-Whites in the Republic. Professor Kingsley Davis of the University of California, suggested that as far as he could remember from American figures, the migration found in King William's Town and East London was not as comparatively high as Watts seemed to think it was. He also commented that in the United States interchange of population resulting from reciprocal migration between towns was not seen as all that important. Professor D. Reader, of the University College of Rhodesia, queried whether Watts had found any seasonal fluctuation in migration, as he pointed out that in a study amongst Africans in the Transkei, he had found very definite seasonal fluctuations. In reply, Professor Watts replied that the life histories of the adults sampled from King William's Town and East London gave no indication of any definite periodicity associated with particular times of the year. However, he thought that amongst the African population, and perhaps also amongst Coloureds and Indians there could be a certain amount of seasonal fluctuation involved in migration. On the wider question of migration generally, he felt that the problem for future research was not only how far population turnover was occurring in particular communities, but whether or not such turnover was in any significant way affecting the development of particular types of communities. Was a migration selective, and therefore of theoretical interest and planning concern?

Others taking part in the discussion on the papers were Mr. D. Kopke of Rhodes University, Mr. W. D. Hurt, a Chartered Town Planner of Durban, Professor D. Page of the University of Stellenbosch and Mr. R. G. Waldeck of Witsco, University of the Witwatersrand, and Mrs. L. Willgoose of the City Engineer's Department, Durban.

URBAN MAN

SOME SOCIAL SCIENCE VIEWPOINTS

including

THE AFRICAN AND CITY LIFE

THE MYTH OF URBAN MAN

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The idea that cities breed a different kind of person is probably as old as the city itself. It is as explicit in the Biblical attack on Sodom and Gomorrah as it is in the agrarianism of the late nineteenth century.

As long as ruling classes were land-oriented and economies depended heavily on agricultural produce, the tendency was to praise farmers and the country and decry urbanites and cities. Although the rapid technological and economic changes of the past century have shifted the bases of power and placed urban men firmly in the saddle, so-called rural values still remain the ideal. Urban sociology all too frequently becomes social pathology, with an emphasis on disorganisation rather than reorganisation; religious bodies uphold ideas about love, marriage, and 'the family', which are out of gear with the patterns of modern industrial societies; and an 'urban' presidential candidate in the United States would stand little chance of success unless he projected a predominantly 'rural' image.

Side by side with this rural nostalgia goes the conviction that a new kind of man has emerged in cities¹). It is generally conceded that he is not yet superior in all respects, but few doubt that he will be so as soon as he can bring his moral behaviour up to the standards of his intellectual performance. This view is full of inaccuracies and inconsistencies, of which I will mention two. Firstly, the idea that tribesmen and countrymen are virtuous but dim is wrong on both counts, and can be held only by someone who has never lived with or studied rustics²). Secondly, if we uphold the belief

- 1) This view of urban man is expressed in statements such as the following: 'The city is remaking human nature, and each city is producing its own type of personality': (Louis Wirth in Robert E. Park and Ernest W. Burgess (1967): *The City*, 4th impression, Chicago University Press, Chicago, p. 217); 'there is a city mentality which is clearly differentiated from the rural mind. The city man thinks in mechanistic terms, in rational terms, while the rustic thinks in naturalistic, magical terms' (*ibid.*, p. 219); 'The social processes that characterise rural life do not apply in the city. A new moral order has developed' (*ibid.*, p. 223). 'Something has happened to human beings since they have become urban dwellers'. (Ericksen, E.G. (1954): *Urban Behaviour*: Macmillan, New York, p. 3); 'by making the city man has remade himself' (*ibid.*, p. 4).
- 2) It is surprising to find in a reputable text book the following nonsense: 'The city is the breeding ground for individuals as units of thought and action rather than passive, adaptive mechanisms motivated by simple physiological drives ... the urban community is where (man) first achieved a self-conscious, intellectual life and elaborated on those characteristics that distinguish him from lower animals and primitives' (Ericksen, E.G., (1954): *op. cit.*, p. 3). Robert E. Park, writing thirty years earlier, may be excused for stating that modern man is more rational, because he lives in cities and his mentality 'is based upon the machine and the application of science to all the interests of life', (Park and Burgess (1967): *op. cit.*, p. 130). Park appreciated the flaws in Levy-Bruhl's theories of primitive mentality, found magic on the stock exchange and the golf course (*ibid.*, p. 128), and insisted that because of lack of knowledge we should not assume 'that there is no area of the experience in which primitive or preliterate people think realistically and rationally ... We need not assume - except for the sake of contrast - that the thinking of civilised man is always and everywhere either rational or scientific' (*ibid.*, p. 140).

in urban man, and thus implicitly accept the Marxian view that man makes himself, we cannot at the same time claim that some elements of man's nature do not change. Robert Park, for instance, assumes that men are born with a given nature, 'with all the passions, instincts, and appetites, uncontrolled and undisciplined'¹). The greater variety of city life provides opportunities for the emergence of 'characters and traits which are ordinarily obscured and suppressed in smaller communities'²).

There is no doubt that city life has produced a new series of experiments in living, and that urbanisation must be regarded as both a cultural and a psycho-social process. Furthermore, although writers have stressed that there are many types of city and many different urban ways of life³), we may accept that urban cultures have enough in common to be considered as instances of one general phenomenon⁴). Obviously they are not the same as peasant cultures, but in spite of the enormous volume of studies, it is by no means clear how they differ. Are the processes of expansion, from Loop and factory to residential and commuter zones, essentially different from the patterns of expansion of Asian or African villages? How far has research corroborated the suggestions of Simmel and Spengler about metropolitan man⁵). Does urban man signify a new stage in *human* evolution, or is he merely a product of technological and social developments?

Ever since Oscar Lewis questioned the validity of Robert Redfield's folk-urban continuum in his re-study of Tepoztlan⁶), more and more empirical studies have suggested that 'stereotyped notions of urban personality may apply to only a small proportion of the urban population'⁷). Also, as studies such as M.J. Field's investigation of mental illness in rural Ghana⁸) have shown, personality adjustment in folk societies has been considerably overrated. The psychological traits of both rural and urban people have often been inferred from descriptions of the social characteristics of their life, and the 'integrative factors in urban personality have often been overlooked, while the disorganising factors have been unduly emphasised'⁹). Even the common assumptions about the social characteristics of urban life have been questioned by

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- 1) Park, R.E. (1967): *op. cit.*, p. 43.
 - 2) *Ibid.*, p. 45.
 - 3) For example, Gans, H. (1962): *The Urban Villagers: group and class in the life of Italian-Americans*: The Free Press of Glencoe, New York. This is also clear in Max Weber's classic, *The City*, tr. Don Martindale & Gertrud Neuwirth, London, Heinemann, c. 1958.
 - 4) See Lewis Mumford (1938): *The Culture of Cities*: Secker & Warburg, London, especially the sentiments expressed in the Introduction.
 - 5) See especially Simmel's pioneering essay of 1903, 'The Metropolis and Mental Life', in *The Sociology of Georg Simmel*, tr. and ed. by Kurt H. Wolff, Free Press of Glencoe, New York, 1950, pp. 409 - 424.
 - 6) Oscar Lewis (1951): *Life in a Mexican Village: Tepoztlan Re-studied*, University of Illinois Press, Urbana, Ill.
 - 7) Noel P. Gist and Sylvia F. Fava (1964): *Urban Society*: Thomas Y. Crowell, New York, p. 436. See especially Chapter 19 for well-documented criticisms of the concept of urban man.
 - 8) Field, M.J. (1960): *Search for Security: an ethno-psychiatric study of Rural Ghana*: Faber and Faber, London.
 - 9) Gist and Fava, (1964): *op. cit.*, p. 436.

recent studies, which have

'shown that the isolated anonymous urbanite is a gross oversimplification. Instead it has been found that participation in the family and with kin occupies much of the time and interest of most urbanites, and that ties to neighbourhood and local area are often strong; while on the other hand, that only a minority of urban dwellers belong to any formal organisation other than the church and that work interests seldom affect other areas of life, such as the formation of friendships and the family. Furthermore, it has been shown that other factors, particularly socio-economic level, age, and marital status, are more highly related to how an individual behaves than city residence per se'¹).

Since modern research has demonstrated 'that there are no hard-and-fast rural-urban differences'²), you may ask why I should waste your time discussing further what is clearly a myth.

First, whether or not they are true, myths are often important as charters for social action. The myth of urban man is used in many different contexts and for a variety of purposes, and particularly in South Africa, where it has been adopted uncritically by politicians, market-researchers and industrialists, psychologists, sociologists and anthropologists.

Secondly, the rise and fall of the theory of urban man has exposed certain weaknesses in the methodology of studies of change, and in particular of cross-cultural analysis and rural/urban change. It therefore seems worthwhile considering a different approach to the study of urban cultures.

Thirdly, in spite of the evidence against him, the phantom of urban man is still being pursued by social scientists, who feel that it is the methods rather than the concept that have been inadequate, and that all that is needed are better diagnostic and descriptive techniques. Studies on urban Africans seem particularly promising, and they may well revive serious interest in the idea of urban man. Owing to the impossibility or undesirability of living with the objects of study, a common practice has been to observe, rapidly and often second-hand through a team of assistants, a random selection of only the external forms of social life, and then to subject the 'facts' to statistical analysis. The superficial results of this kind of research tend to give greater credence to the myth of urban man³).

The idea that there is a new, urban man, and especially the claim that he is more advanced, is part of the twentieth century version of the body of myths which regularly appear in societies, to justify systems of government and the righteousness of ruling classes. Power is reinforced with claims of a prerogative over truth, and the truths that are emphasised vary according to the kinds of power that are adopted. Just as at the time of the Reformation the rising middle class used the authority of the Bible to break the authority of the church and the feudal class, so the myth of urban man is used to support the belief that man is a rational being and to justify the current industrial system, of which a fundamental, but erroneous, tenet is that 'economic power is the most basic form' of power ' and that all other forms are

1) *Ibid.*, p. 441.

2) *Ibid.*, p. 446.

3) For a brilliant and stimulating criticism of this kind of research, see C. Wright Mills (1959): *The Sociological Imagination*, Oxford University Press, New York, especially chapters 3, 4 and 5, and pp. 71 - 75.

derived from it'.¹⁾ Questionnaires, bureaucratically-controlled interviews, and 'the fine little mill of The Statistical Ritual'²⁾ ensure 'by formal and empty ingenuity' that 'we do not learn too much about man and society'³⁾, just as the practitioners of post-Reformation bibliolatry distorted the Bible by assembling quotations without reference to their meaning in context, and were thus able to re-adjust the less palatable statements of Jesus Christ, St. Paul and others, to suit new patterns of political and economic exploitation.

Investigations into the nature of urban man and into an assumed process of change called 'urbanisation' have also been carried out in response to a search for a satisfactory theory of social change that will not challenge the assumptions on which the rich nations base their wealth and power. Many of the brilliant ideas of the early theorists of the social sciences have been forgotten, as the later empiricists have pursued only a few possible lines of enquiry.

In his introduction to Max Weber's *The City*, Don Martindale points out that urban phenomena cannot be satisfactorily explained by the ecological theory of the city, nor by the theory of the rise of an urban man with a peculiar outlook related to urban occupations and the city environment⁴⁾. Henri Pirenne's view of cities as communities of merchants, and Max Weber's emphasis on their economic, political, administrative and social functions⁵⁾, provide better bases for understanding both the rise of cities and the patterns of urban cultures, and the decline of their importance as new national communities enmesh them in the institutional network of larger societies.

Urban cultures are not simply re-statements and re-arrangements of rural patterns of thought and action. They are not merely modifications or sophistications of rural institutions. If we see their institutions as new solutions to perennial problems posed by a hypothetical human nature, or are too much concerned with such features as morality and mental health in urban environments, we may fail to understand the nature of the transformations that have taken place. We will never understand the Italian language properly if we try at every point to relate it to a previous knowledge of Latin. There is not necessarily a direct structural connection between two consecutive events. Beethoven owed much to the influence of Haydn and Mozart, but even his early compositions exhibit characteristics which are better understood as expressions of his own unique style, than as modifications of his predecessors' music. As Leach has said, 'the same structural pattern may turn up in any context'⁶⁾, and what one man applies to his musical activity another may apply to his religious or economic life. Similarly, social systems differ not because of variations in the intellect or the constitution of men, but because societies apply the same process in different fields, or different processes to the same field.

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- 1) Reinhold Niebuhr (1941): *The Nature and Destiny of Man: a Christian Interpretation*: Nisbet, London, Vol. II, p. 271. It is interesting that this distortion of Marxian thought is particularly popular amongst nominally-Christian capitalists in countries whose Governments are avowedly anti-Communist.
 - 2) C. Wright Mills (1959): *op. cit.*, p. 72.
 - 3) *Ibid.*, p. 75.
 - 4) Max Weber (1958): *op. cit.*, especially pp. 26 and 29-31.
 - 5) Max Weber wrote (*op. cit.*, p. 104): 'The city of the mediaeval Occident was economically a seat of trade and commerce, politically and economically a fortress and garrison, administratively a court district and socially an oath-bound confederation'.
 - 6) Leach, E.R. (1961): *Rethinking Anthropology*: Athlone Press, University of London, p. 8.

All men, whether hunter-gatherers, pastoralists, peasants or sophisticated urbanites, have the same intellectual potential, and they apply the same, limited number of thought and action processes to the cultural, human, animal, vegetable and mineral materials which they select to build their social systems. A 'process' may be defined as the sequence of actions by which something is produced. It follows that the same process may be used in a variety of social contexts, or applied to different materials, and produce different results. Similarly, in different contexts, two similar 'products' may be created by different processes.

Urban cultures and so-called urban men assume a deeper significance, and in fact acquire a new dimension, when we see them not as something new and fundamentally different in human evolution, but as transformations of universal processes which occur, and have occurred, in all societies at all stages of social and technological development. Changes in these universal processes, as distinct from changes in their external forms, are rare, if indeed they occur at all.

Professor Lévi-Strauss has demonstrated the value of this approach to the analysis of cultural forms in a series of brilliant studies of kinship, totemism, and myth¹). He has shown how 'widely differing institutions can be reduced to transformations of the same basic figure'. I believe that the same method of analysis could most profitably be applied to studies of urban phenomena, provided that the systems and the significance of power relations, inherent in Weber's theory of the city, are always borne in mind.

Generalisations about urban processes therefore must depend first on their meaning in the context of urban communities. But in addition, a study of transformations of the same processes in different kinds of societies may be particularly illuminating.

The literature of the social sciences is full of information about what are called social processes. For example, economic activity is generally considered to include the social processes of production, distribution and exchange. Now there is no reason why these apparently economic processes should not, in the context of some societies, be applied to marriage or religious activities. Similarly, social processes that are widely associated with religion can be applied to economic activity.

In other words, when we talk of kinship in a rural and an urban community we may be talking of two entirely different phenomena. In one case we may be talking about property relations²), and in another about friendship. Kinship relationships can be as impersonal and economically-oriented in a rural context, as are employer-employee relationships in an urban context. Similarly the fellow villager whom one tried to avoid in the country may become a long-lost brother in town. This is not because of changing attitudes to kinsmen, due to the adoption of an urban way of life: it is because in town kinsmen become part of a different process.

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- 1) See especially *Structural Anthropology* (1963), *Les Structures élémentaires de la parenté* (1949), *La Pensée Sauvage* (1962), and *Mythologiques: Le cru et le cuit* (1964).
 - 2) For a discussion of this function of kinship terminology, see Leach, E.R. (1961): *Pul Eliya: A village in Ceylon*: Cambridge University Press, Cambridge.

It is important to remember that although people are extraordinarily adaptable, especially if they are free to try a wide choice of activities, the same person may be as great a success in some fields as he is a failure in others. Winston Churchill was a striking example of such a person. Such events are not difficult to understand if we appreciate that the structural processes of individual personalities, and of institutions, subcultures and cultures, arise from the interaction of individuals and groups, and from the activity of the brain in response to this interaction. In this sense, all emotions are intellectual and all intellectual activity is emotional. All human action is subject to experiences of interaction, which can take place in an infinite variety of contexts but whose patterns of procedure are limited, because humans can only exist as parts of a going concern. The analogy of the computer is unsatisfactory, because its brain lacks humanity, but at least it illustrates my point that very different results can be obtained by applying the same simple processes to an infinite variety of data.

Man can do much more than any of the machines that he creates, but at the same time I doubt if he can create anything really new, anything that is not already inherent in his being. Computers, radios, X-ray machines and television, are in a sense no more than extensions and props to man's inherent powers of calculation, telepathy, vibrational diagnosis and clairvoyance. Inventions are only purposeful discoveries of situations that are already possible by means that already exist. Man can discover new ways of extending himself in the world, as he has done through centuries of cultural achievement. These experiments in living may help him better to be what he already is.

One thing is certain. If there is such a phenomenon as urban man, he is not a new kind of being. Urban life is simply a new way of having, founded on certain ancient principles of being, which are as evident in the lives of pastoralists and hunter-gatherers as in peasant and urban communities.

People who live in flats often have no contacts even with the people living in their own block. Neighbours and buildings can therefore be seen in much the same way as are thorn-trees and sand, or jungle and swamp, by hunter-gatherers. In fact, in the minds of city-dwellers most living people may seem less animate and less important than do spirit-infested trees and rocks in the minds of hunter-gatherers. There is not time for further comparisons, but I would remind you that in cities men hunt men or jobs, and women gather food at chain-stores¹⁾. It is perhaps no coincidence that anthropologists are showing a renewed interest in the lives of hunter-gatherers: maybe they are not studying how man was, but who and what he is.

Before I consider briefly the state of urban studies in Africa, I will re-state the main assumptions and techniques of the method of study that I am advocating.

First, we must assume that for at least 10,000 years, and probably for much longer, there has been no significant development in the emotional and intellectual potential of the human species. Cultural evolution is not an accurate gauge of human evolution. Cultures are products of man's self-consciousness, tools that have been created primarily to satisfy the animal

1) Many features considered characteristic of urban man apply precisely to hunter-gatherers. For example, in Nels Anderson's *The Urban Community*, Holt, Rinehart & Winston, New York, (1959), p. 2, the following characteristics cited as 'urban' are also true of hunter-gatherers, though admittedly not generally of peasants: hunters must always adjust 'to the new and changing', if they hope to catch game; they are constantly 'congenial to initiative', and are 'not only mobile' themselves, but 'accept the mobility of others'. Recent studies of Bushmen also suggest that they, like Anderson's urbanites, are loyal to their immediate family, but tend to lose contact with other relatives.

drives of self-preservation, reproduction, co-operation and exploratory behaviour. A culture is a social security system, a system of communication used by a viable economic community, based on relationships that are established between persons, animals, vegetables and minerals. The evolution of culture has sometimes increased the productivity of each succeeding generation, but it has not necessarily improved the prospects for man.

As Professor Levi-Strauss has said:

'A primitive people is not a backward or retarded people; indeed it may possess a genius for invention or action that leaves the achievements of civilized peoples far behind'.

If we are to understand the growth of cultures and patterns of adaptation, change, invention and creativity, we must understand the *processes* of human interaction. 'Urbanisation', 'Westernisation', 'detrribalisation' and 'industrialisation', (whatever these words may mean) are not new processes, but adaptations of existing processes to new situations. They are transformations of existing models in new 'languages', with corresponding shifts of emphasis and changes of dress. It may be that in the course of social change, processes are applied to different, as well as new, situations, so that there is not necessarily continuity between what appears to be the same sort of institutions. Thus we may be wrong to assume that the phenomena which we would describe as musical activities are always of the same order: the process that gives rise to music in one society may in other contexts produce mathematics, painting, architecture, or business enterprise.

Our understanding of cultures will be greatly enhanced when we know some of the basic processes which men use to create new patterns out of the phenomena that they find in the world. This can be achieved by attempts to generalise about patterns of interaction observed in context. Comparison will be illuminating only under certain circumstances. A comparison of three musicians may lead to the conclusion that as musicians they have a number of common characteristics, and completely miss the point that they have entirely different personality sets. Thus comparison is only useful in the sense that a vague perception of the pattern of a process in one situation may assume sharper definition when a similar process is perceived in another situation.

In view of the varied but limited operations of which the human brain is capable, we shall probably find the same processes being applied in all fields that involve human beings. Thus the well-documented authoritarian set may be found in many contexts other than personality, and even in the field of personality you can have an authoritarian liberal as well as an authoritarian fascist. You can have an authoritarian university system in a university of predominantly liberal men, and a liberal man who writes authoritarian music. You can have an authoritarian religious, political, or economic system even if most of the people who operate it are not authoritarian.

Thus the most important events in social change, which takes place all the time even in technologically-simple societies, may not be the adoption or adaptation of products by individuals and groups, but the continuity of groups and the application of existing processes to new situations, and in particular the resonance of processes - that is to say, the harmonious interaction of the processes by which individual personalities, social systems, cultural institutions and machines, operate. This is not the same as the interaction of products: for example, conflict between two people does not indicate that their personality structures do not resonate, any more than overt harmony is a sign that they do.

The phenomenon of resonance is basic to an understanding of the development of individuals and groups. We cannot say that development will take place only where there is ability, or that ability will always come into the open, because all human beings are talented in one way or another, but societies tend to impose restrictions on the development of their talent.

'A culture is not creative or uncreative; people are'¹). But the situations into which people are born influence profoundly their later chances in life. If a person is born lucky in this respect, he can develop his talents without too much concern for social pressures, and he may achieve much both for himself and his society, simply by being himself. This is the only possible excuse for the existence of a leisure class. If a person is not born in this way, he may have to find himself by climbing on a social, political or religious bandwagon, and that's the end of his courage, integrity and originality. Don Martindale has emphasized the importance of intellectuals in periods of creative social and cultural change²). In modern urban studies, we hear much about intellectuals, and may even be led to imagine that intellectuals are automatically to be found in universities, which is often far from true. But if people have come to fill intellectual positions in a society chiefly because they have climbed on to an available bandwagon, then they are not necessarily true intellectuals, and may have a different effect, or no effect at all, on social change. In such societies, the intellectual process may be operating in another social field. Martindale has pointed out that intellectuals have appeared in a number of guises, according to the different structures of their societies.

As far as I can make out, most urban research in Africa, and particularly in South Africa, does not investigate these problems thoroughly. We read of groups and new associations, and of the adoption of the trappings of so-called urban culture. We read of separatist sects, of football clubs and women's *manyano* groups, of Red and School, of *oosuse-me* and *oomac*; and we learn about syncretic rituals and social organisation, and the changing habits and attitudes of the people of Soweto³). But little or nothing is said about

- 1) Don Martindale (1962): *Social Life and Cultural Change*: D. van Nostrand, New York, p. 505.
- 2) See Don Martindale (1962): *op. cit.*
- 3) In spite of the considerable amount of research that has been done in Soweto, our knowledge of what happens is either strictly demographic, survey-oriented, or quasi-mythical. A notable example of the last type is de Ridder, J.C. (1961): *The Personality of the urban African in South Africa: A Thematic Apperception Test Study*: Routledge and Kegan Paul, London. One or two good insights, and some excellent documentation of his subjects' responses are unfortunately wrapped up in a mixture of superficial analysis and projection of all the 'white' myths about Africans. For example, 'Africans love stories' (p. 66); 'are an extraordinarily imaginative people' (p. 67); 'are a naturally expressive people' (p. 74); 'as a group appear to be an aggressive people' (p. 84). 'The urban African's approach to sex is uninhibited and unembarrassed. Sex is an animal drive to be satisfied in almost an animal fashion ... while the urban African has adopted many European modes of behaviour, European chivalry has not been one of his cultural acquisitions' (p. 99); 'the urban African laughs easily and with uninhibited hilarity ... True humour (requiring a high level of intelligence) is seldom if ever found' (p. 100); 'the urban African loves to show off, to attract attention' (p. 110), etc. etc. Another study, which supports the views of rural and urban men to which this paper is diametrically opposed, is S. Biesheuvel's 'Work and its effect on personality development in Africans', in J.F. Holleman (ed.), (1964): *Problems of Transition*, Natal University Press, Pietermaritzburg, pp. 81 - 102. By applying Maslow's hierarchy of needs to Puritan and evolutionary concepts of human behaviour, Biesheuvel concludes that Western man is the individualistic product of a work economy, entirely different from the non-work (sic!) economy of the traditionalistic African peasant. Biesheuvel's misunderstanding of peasant and tribal societies is well illustrated by his statement that 'in the transition from one form of society to another ... African personality has gained an important new dimension, individuality'; (*op. cit.*, p. 92).

the continuity of groups and processes, and still less about the relative importance of these new associations in bringing about change¹). We do not know where the *real* power lies, or where innovation is likely to be most effective, because we do not know which processes are resonating with large or influential groups of people. We know only about some of the products of these processes.

We have information about elites, intellectuals and middle-classes, which tends to underwrite the ideas both that they are superior people and that the 'western/urban' way of life that they espouse is the ideal. These people may look as if they hold power and will influence the course of change. But are they really effective, and do they have the necessary personal security to be innovators and leaders of thought? What has happened to the descendants of the tribal intellectuals and innovators, the herbalists and masters of ritual who suffered a Stalin-like purge at the hands of 'white' doctors, missionaries and administrators? Are they, like the Indian Brahmin intellectuals who after the reign of Asoka were ousted by the Buddhists, waiting for the chance to return to power? Will they find in the new society a process that suits their ambitions, just as many tribal chiefs have found in government policies a means of gaining power that their ancestors never had?

Nowhere is the triviality of some urban studies more evident than in the fields of market and management research. Straightforward explanations of behaviour are avoided because of wide-spread beliefs in the peculiarities of Africans, which are nourished by the pontifical pronouncements of 'experts' on the Bantu. Why do Africans like a particular scent, a type of tea, or brand of beer? The experts will tell you that it resonates with the African soul, has a tribal-sounding name, or helps a man to identify with the township elite. Later, when you have paid your fees and are still not satisfied, you may discover the reasons for these preferences. There is a leak in the factory that makes the popular product - perhaps a deliberate leak, to boost sales; defamatory information has been spread about rival products; a salesman has come to an agreement with an official; the word has got around that the product is an aphrodisiac; or quite simply, it's cheaper.

Similarly, the work performance of Africans has little to do with their tribal affiliations, unless it be that they work better with people whose language they can understand. More often, it is a function of the competence of their immediate supervisors and of the management system²). More importantly,

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- 1) In Mayer's and Pauw's important studies of the Xhosa of East London, many aspects of change are documented, but we are not told *who* opted for Red or School life, and why. Pauw points out that 'westernization' does not depend on coming to town: 'urban living has merely contributed to a process of Westernization which started within the rural environment'. Pauw, B.A. (1963): *The Second Generation*, Oxford University Press, Cape Town, p. 195. What we need to know is whether the adoption of Western culture was seen by some groups as a way of increasing their power and influence, or whether it appealed randomly to individuals, who then formed themselves into new groups.
 - 2) An enormous corpus of myth has grown up about 'the Bantu worker', and self-appointed 'experts' do well out of advising industrialists, although professional sociologists like Yetta Glass have pointed out that there are no essential differences between African industrial workers, and workers elsewhere. 'When differences in behaviour do occur these are generally found to result from particular aspects of managerial policy or from the traditional work patterns which have been evolved in South Africa' (Yetta Glass, 'Industrialization and urbanization in South Africa', in Holleman, J.F. (1964): *op. cit.*, p. 66). This view is further borne out in the most recent study of African industrial workers in South Africa: Hoyt S. Alverson, (1968): *The Social and Organizational Antecedents of Job Satisfaction among Black South African Industrial Workers*, unpublished Ph.D. dissertation, Yale University.

power relations are an ever present factor in motivation. Without the knowledge of the management, factories may be run by informal organisations, or production may be retarded by the effects of drinking clubs that escape the notice of tea-drinking 'white' supervisors. One factory spent a large sum of money on a team of experts to find out why the best-paid, most highly qualified African workers had the highest rate of absenteeism. It took them a long time to discover what a glance at the work of Max Weber or C. Wright Mills might have suggested almost immediately - that since the supervisor was a white man, there was no point in doing more than the work necessary to keep the job¹).

We are not studying the most pressing social problems in South Africa. We are so busy trying to 'understand the African' (largely in order to coerce him commercially or politically), that we are failing to understand our society as a whole. We are so busy searching out little areas for meticulous empirical research that we neglect the broad sweep of social events. A most interesting feature of South African society is not that it is so divided, but that it is so extraordinarily homogeneous in its patterns of group behaviour. This is partly because all the cultural sub-systems have permeated each other much more than is generally realised, and partly because all these systems are dominated by, and acquiesce to, a single politico-economic system which is mythically oriented and rather tribal in outlook. For instance, the faith in gold as a necessary guarantee of economic stability is a characteristically quaint attitude, which may be compared to the Melanesians' belief in the value of pigs' tusks.

You may feel that I am being far too naive and reductionist in my approach to a very complex problem. Once again I would remind you of the digital computer, a very complex machine which operates according to very simple principles. If we lose sight of the principles, the complexity of the machine ceases to be of any significance. And so it is with human behaviour. In one sense, it is too complex to be understood even by the most learned expert, but in another its general principles can be understood by any human being. To make a fetish of complexity is an argument of power cliques: it was the line that the Brahmins and the experts of the mediaeval Church took, and two of its contemporary transformations are to be found in the quotation of irrelevant statistics and in the devious statements of officials.

No social problem is too complex to be understood by careful observation, insight, and logical deduction, particularly on the basis of personal experience. Questionnaires and the use of statistical devices will only help to clarify and correct hypotheses, and in many cases it may be impossible to understand a problem by such methods²). If results are unsatisfactory, what is needed is more careful observation and more rigorous use of logic in deduction, which may result in fresh insight. The trouble is that we do not have enough time to read and think; we find it hard to accept that our personal experiences could be the same as those of others, let alone of Africans, 'Coloureds' or 'Indians'; and intensive, continuous observation of human

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- 1) The absence of hope amongst Africans makes work all the more frustrating for someone who has acquired a degree of skill, as Professor Edgar Brookes has emphasised: 'an African skilled worker can never become a foreman, an African lawyer can never become a judge' (in Holleman, J.F. (1964): *op. cit.*, p. 101).
 - 2) 'Statistics is a useful adjunct, but the field of personality should not be made a mere playground for the mathematically gifted' (Gordon W. Allport (1963): *Pattern and Growth in Personality*: Holt, Rinehart & Winston, New York, p. 459). 'Whether a man is urban or rural, more urban or less urban, can hardly be learned from statistics' (Nels Anderson (1959): *op. cit.*, p. 135).

interaction, for which formal interviews¹⁾ and other devices are no substitute, is either not desired or not allowed. When we consider that the prosperity of our country is founded chiefly on the ideas and inventions of men who had the time to think creatively, and on the cheap labour of an abnormally docile force of workers whose modes of interaction are an integral part of the system, we begin to realise that important areas of research are being totally neglected.

Even if we do not have enough time to think and cannot observe interaction as keenly as we should, at least we should refrain from studying sections of the South African community in a sociological vacuum. We cannot study the performance of workers without reference to the competence of the management, management without reference to industrial legislation, and legislation without politics and myth, which again brings us back to employment and the workers. We cannot study the ethnicity of urban Africans without considering the 'ethnic villages' of 'white' Johannesburg²⁾ and the frequent discontent of migrants from Cape Town, Grahamstown, or Durban; nor can we understand the subservience of poorly educated Africans unless we appreciate that in many respects they have acquired a metropolitan outlook.

A most urgent problem for investigation by social scientists in South Africa is not the urbanisation of Africans but the tribalisation of urbanites. It is an astonishing fact that nominally urban, educated and sophisticated people in South Africa tend to embrace values and ways of thought and action that have commonly been described as rural. They become irrational in economic management, mythical and magical in their political thinking, dogmatic in their attitudes to education and deviant opinions, tribal in their outlook on defence, and blandly confident in the rectitude of all that they do.

In fact, South African urban society provides a striking refutation of the theory that there is a new kind of urban man.

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- 1) For an acid comment on interviewing, see especially C. Wright Mills (1959): *op. cit.*, p. 70, and especially the footnote.
 - 2) Yetta Glass compares African 'urban tribesmen' with the emigrants of cultures who move away from their ethnic centres to new countries, in Glass, Y. (1964): *op. cit.*, p. 69. Biesheuvel's objections to comparisons between African migrants and those in other parts of the world (in Holleman, J.F. (1964): *op. cit.*, p. 79) are based on questionable assumptions about the family structure, conceptions of marriage, work attitudes and religious beliefs of European migrants. Herbert Gan's study of the Italian-Americans of Boston's West End (Gans, H.J. (1962): *op. cit.*,) reinforces the view that urban Africans are better understood in terms of the observable, characteristic behaviour of the subcultures of middle, lower and working classes, than the supposed behaviour of racial, ethnic or tribal groups.

LOCAL GOVERNMENT ELITE IN SOUTH AFRICA*

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1. INTRODUCTION:

i) Study of White South African Elite:

This paper contains an interim report on 54 local government elite representing the senior councillors and professional officers of seven major cities in South Africa and of three of the larger Divisional Councils in the Cape Province. It must be emphasised that, being the 'elite' they do not constitute a representative cross section of local government in South Africa.

This study of local government elite forms a part of a larger national study of 1,000 incumbents of top positions in all aspects of South African society. For the purpose of our study we define elite as the incumbents of top positions. Positions are scaled in terms of an authority rank order regardless of the power, esteem or length of service of the incumbent. This approach should be distinguished from others where the emphasis is on 'power elite', 'status or prestige elite', 'socialites' or a 'standard setting elite'. In this study we are concerned with *positional or authority elite*.

ii) Selection of and Interviewing Local Government Elite:

It was decided, for practical reasons, to limit the study of city government elite to the cities with populations of over 100,000 according to the 1960 census and to include about 100 top positions in the survey. Originally we planned to select a number of elite from each city in proportion to the total population of that city. This criterion was abandoned in favour of a positional emphasis whereby we aimed at including more or less similar positions from all cities regardless of population.

A rank order of professional staff in terms of authority of the position (*not* age or seniority of incumbent), and of councillors in terms of the importance of the committees of which they are chairmen, was established

* The 'South African Elite' project is sponsored by a grant from the National Council for Social Research of the Department of Education, Arts and Science. It was commenced in 1966 under the auspices of the Institute for Social and Economic Research of Rhodes University, and was transferred on April 1st, 1968, to the Abe Bailey Institute of Inter-Racial Studies at the University of Cape Town. Opinions expressed or conclusions reached are those of the authors, and are not to be regarded as a reflection of those of the Department of Education, Arts and Science (National Council for Social Research), or of the Institute concerned.

with the help of informants from each City Council.

By April 1968, when data were analysed for the present paper, 41 City Council elite and 13 Divisional Council elite had been interviewed. They came from seven of the eleven South African cities whose populations exceed 100,000.

The local authorities with which we are concerned in this study are the city councils of seven of the major cities in the Republic, situated in all four provinces, and the corresponding divisional councils which are found only in the Cape Province. Both municipal and divisional councils are statutory bodies occupying a subordinate place in the hierarchy of government in the Republic. They possess no rights or powers except those specifically conferred on them by the Republican Parliament, the Provincial Councils, and in isolated instances, by the old colonial governments. They may frame regulations on a wide variety of subjects, but these regulations must be submitted to the Administrator of the Province for his approval. The legislative power of local authorities is thus narrowly defined, and they are subject to the constant scrutiny of the Provincial Administration and, in certain cases, of the Republican Government, both of which have the authority to exercise restrictive and compulsive powers.

This study of local government elite contributes to an understanding of the operation of democracy in South African society in two respects: the extent to which people in key positions in local authorities are likely to constitute an influence which counters centralised power, and the extent to which these people are representative of the population groups in their cities.

(iii) Functions of Local Authorities:

Local government elite in South Africa are called upon to lead in the fulfilment of a wide and complex range of responsibilities which are broadly defined by the following list:

- public health and hygiene
- cultural amenities
- Local transport
- sport and recreation
- provision of industrial facilities
- supervision of commercial activities
- Local planning
- community protective services
- community promotive services
- non-European affairs

Of these functions, the administration of the non-White sections of the population is of critical importance in present-day South Africa.

In terms of the Natives (Urban Areas) Consolidation Act No. 25 of 1945, as amended, local authorities act as the agents for the central government over a very wide field of Bantu administration. They are responsible for the enforcement of the national policy of separate development at local level, having to provide areas for urban Bantu locations, housing and municipal services within these areas, and having to appoint the administrative personnel to deal with all the multifarious problems inherent in the situation of the Bantu in urban areas. They provide not only the necessary infra-structure for urban life, but are also responsible for controlling the flow of Bantu into locations, and for the functioning of labour bureaux which are presumed to equate demand for, and supply of labour. Their officials have the final say as to whether a man may seek work; and even as to whether he may remain in the urban area at all. Their powers in this sphere, whilst hardly autonomous or original, have far-reaching effects on the lives of many thousands of Bantus. In the seven municipalities which are the subject of this paper, the Bantu

population totalled no less than 1,403,267 or approximately 13% of the total Bantu population of the Republic in 1960. Local authorities, therefore, could be said to occupy a vital strategic position in the structure of Bantu administration in the Republic. They are called upon to administer, as the direct agents of the central government, a sizable proportion of the Bantu population; and the urban population is vitally important for it is here that the culture contact between White and non-White is most intense. All over Africa new towns and cities, which have grown up as the result of the impact of Western civilisation, have acted as forcing houses of change on Africa's age old social structure. This is no less true of our own towns and cities. The 1960 census shows the Bantu population in the seven cities we are studying to be numerically very important in relation to their total population.

It is important in this connection to realise that, whilst the city council concerned have far-reaching powers to control the Bantu population within their borders, the Bantu themselves have a minimal degree of self government. Bantu authorities in urban areas have until now had only advisory powers, and even those now being set up in terms of the Urban Bantu Councils Act No. 79 of 1961, constitute a very small advance, if any, on the old advisory model. The importance of this fact for our study is that the White population controls these cities through their elected representatives, and they are called upon to govern large groups of people who are completely unrepresented at any level in the government process. White city councils, if they are to govern wisely and well, must be informed by a spirit of understanding and sympathy, and must be supplied with much information by the administrative officials responsible for controlling the Bantu populations.

Although municipal powers over other non-White racial groups are hardly comparable, they nevertheless do have far-reaching powers in terms of the Group Areas Act, and in most instances these population groups are similarly disenfranchised. Thus in Durban the Asian group comprises approximately 35% of the total population, in Cape Town the Coloureds comprise 41% of the total. It is true that these groups, within the confines of their own group areas may have consultative and management committees, but these committees too mark the first elementary steps towards self-government at local level, and their powers are for the most part merely advisory. In the Cape the Coloureds still possess the municipal franchise in certain areas, but as a group they have seldom exercised any real influence on municipal policy, except perhaps in Cape Town. So in practice the White representatives are called upon to act in the capacity of guardian for both Asian and Coloured groups.

It may be concluded from the above summary that the functions of urban local authorities in the Republic are, comparatively speaking, restricted, excluding as they do both the educational and the police function found in many overseas models. (Durban and Pietermaritzburg only are authorised to maintain a borough police force). They nevertheless cover a very wide field, and have to draw on the technical knowledge of many different experts in order to carry out their functions adequately. Not the least important of these functions is the purely administrative one of providing the administrative plant from which the more technical departments can operate. Personnel management is vitally important, and all the local authorities we are considering are very large employers of labour. Thus Johannesburg in 1966 employed 8,500 Whites and 20,584 non-Whites. Durban employed 6,013 Whites and 17,479 non-Whites¹). The need for financial skills of a high order is also apparent when one considers the financial statistics of the local authorities concerned. The total current revenue from both general and trading departments varied in 1965 from R7,000,000 in East London, to R65½ million in Johannesburg²).

1) Official South African Municipal Year Book, 1966/67.

2) Republic of South Africa, Bureau of Statistics (1966): *Statistical Year Book, 1966*: Government Printer, Pretoria.

Also included in the study were the Divisional Councils of East London, Port Elizabeth and Cape Town. Because rural population tends to be much less diversified from an economic point of view, and population density much lower, the demands made upon rural local authorities, and the functions legally committed to them, tend to be fewer in number. They are responsible for functions analogous to municipalities in the fields outlined above.

2. SOME CHARACTERISTICS OF THE LOCAL GOVERNMENT ELITE:

Of the 54 subjects interviewed, 34 (63%) were English-speaking, and eight (15%) spoke both Afrikaans and English in the home. Those interviewed tended to be concentrated in the over fifty age group. Professional personnel in the municipal service had only climbed to the top positions at this stage. But even elected personnel brought to their work on the council almost a life-time of experience. More elected elite were found in the over sixty age group, indicating perhaps that local government is seen as an occupation for those already established in their own occupational sphere, or even for those who have already retired. There were three out of the total group of 28 councillors who had already retired.

It is interesting to remark that the Maud Committee Report on the Management of Local Government¹⁾ states that 52% of male councillors in Britain were over the age of 55, and the average age of Chairmen and Aldermen, roughly equivalent to our selected elite group, was 57 years.

As may be expected in an elite group, the majority of those interviewed fell within the higher income brackets. The elected elites had a higher ceiling than the professional officers, nearly one-third of them earning R20,000 per annum or more. Taken as a whole, the local authority elites interviewed belong in the top 8% of the South African income structure.

3. THE FIELD OF EXPERIENCE OF THE LOCAL GOVERNMENT ELITE AND ITS RELEVANCE TO THEIR FUNCTIONS:

What factors determine the competence of legislators and of administrators? Technical competence with regard to their various functions will obviously be a prime requisite for administrators. This quality is less essential for legislators who may rely upon the knowledge and competence of officials to enlighten them. Legislators require the ability to take decisions to collect and weigh information and to chart a course which is both in the public interest and, because they are elected, which is acceptable to those who elected them. At executive level the top administrative official must also be able to take decisions, within the field of discretion allowed him. The legislator, and perhaps the administrator, must be possessed of a sense of empathy, a knowledge of the needs and circumstances of the many different groups, ethnic, racial, economic and occupational, which fall under their control.

i) Education, Occupation, and Professional Experience:

How well qualified were our respondents to meet the demands made upon them in these various fields? In a purely exploratory fashion we have attempted to look at their qualifications from several different angles. Formal education must obviously be a factor in determining technical competence; and occupational experience is of great importance too. In decision making, occupational experience is clearly of great significance. And how does a man achieve empathy with others - from contact with them perhaps, from first-hand

1) The report of the Committee on the Management of Local Government: (1967): Vol. 2: *The Local Government Councillor*: H.M.S.O., London.

experience of the difficulties which they encounter? In this respect we looked at mobility, for the man who has risen from the bottom often has a sympathetic and realistic understanding of those at lower levels than himself. We have also examined inter-racial contact and its nature, on the assumption that no man can know another's need in a purely theoretical way. Finally, we have looked at leisure activities, for they too contribute to the sum total of a man's experience. Whether he is a councillor or an official, it is this experience which he brings to the council table; the richer and more varied it is, the more likely are decisions to be informed and realistic.

Of the 54 elite, no less than 24 (44%) had university degrees. Only eight (15%) had not followed up their school certificates with study of some kind, and those were all elected members.

Again it is interesting to note that the Maud Committee reports that 43% of councillors and 53% of Aldermen in Britain had not proceeded beyond elementary or secondary modern education. Only 7% of Aldermen and 10% of councillors had attended a university, and 7% and 11% respectively had attended commercial schools, polytechnics or teacher training colleges.

As would be expected, the educational preparation of the professional group has been much more functionally specialised than that of the elected group. All had specialist qualifications beyond senior certificate level, mostly post-secondary school diplomas or bachelor degrees. Among the bachelor degrees no less than seven were engineering degrees, there were three in commerce, and the remaining one a degree in Bantu studies. The diplomas were mainly in accounting or secretarial practice (6) and in engineering or electrical engineering (3); the remaining one diploma was for land surveying. Public health personnel held the necessary public health diploma in addition to their other degrees. It is thus apparent that all were well equipped by their formal education to meet the demands made upon them by their occupation.

Among the group of elected councillors, eight had not proceeded beyond matriculation. No less than three of the eight were, however, directors of companies, three were managing directors, one was head of his firm, and one was a farmer with his own farm. All earned incomes higher than R6,000 p.a., some considerably higher. In the six whose occupational histories can be traced, there is a common factor, that of self-achievement. All worked themselves up from comparatively subordinate positions to the positions of authority which they now occupy. One rose from apprentice to managing director in the same firm, one from farm assistant to farm owner, and another from lorry driver to managing director. The two whose personal occupational histories are not available, had distinguished military careers. It is apparent then that this group does not owe its position in the elite to influence of a personal nature, or to wealth or to political influence. They have achieved high rank in the local government hierarchy presumably for the same reason that they have achieved it in their own spheres of occupation. All have doubtless many valuable qualities, and much valuable experience to contribute to the local governing bodies which they serve.

Among the elected councillors, many had post secondary-school diplomas, and these are in rather different spheres from those of the professionals. Five held qualifications in law, two in accounting, one in secretarial work, one in quantity surveying, two in architecture, and one held a naval diploma. Once again there is specialisation, this time in fields for the most part ancillary to those of the professionals, and in almost all cases relevant to the work of local authorities. The large contingent of councillors with a legal training is important, for this type of training not only equips men with knowledge of the law, but also ensures that they have some background in the humanities. In the material sense this group has also achieved highly in the occupational spheres; five of them were earning more than R20,000 p.a. Nearly all were self-employed (7) or in commanding positions as directors or managing directors (2), with the exception of two who had retired, but who had occupied similar positions of command in the recent past. There was a lone housewife.

Among the graduates there were two with B.Com. degrees, one B.Sc. in chemical engineering and one B.A. in history. As a group these men have not achieved as highly in their careers as have the two preceding groups, but there was one Mayor, one Deputy Mayor, and one member of an executive committee among them.

The advanced degrees included two masters' degrees in the humanities; there was one B.Ed.; the one Ph.D. had specialised in the actuarial field. In all four cases academic achievement has been matched by success in the occupational field, for two are school principals, one a director of a building construction company, and one a director of a building society, now retired. Three held mayoral office, and one was a chairman of a committee. Leadership in the local authority elite which we have investigated tends to be dominated by technical specialists, although there is a group of men who have achieved status by their own abilities and one with an education in the humanities.

The occupational categories best represented were industry and building, law, finance and education. A local authority's most important functions are concerned in some way or other with finance, and with building and construction. Finance undergirds all other functions; the provision of roads and bridges, of public buildings, of housing, of facilities for recreation - all these involve building and construction. The knowledge of those in the legal profession is also in constant demand. It is perhaps not by chance then that these particular occupations tend to be well represented among the elite we have interviewed. There would appear to be a lack of formal educational qualifications relevant to dealing with problems of the administration of the urban Bantu, or any other non-European racial group for that matter. Legal men, with knowledge of the intricate laws which condition the lives of the urban Bantu, and with a higher than average level of contact with all racial groups, would probably tend to mitigate this lack. The three Chairmen of Bantu Affairs Committees' interviewed represented three different occupational groups, the legal, industrial and financial. The relevance of the first two occupations to this function is obvious; the chairman with an occupation in the financial sphere had very obvious extra-occupational interests which equipped him for this demanding work.

Almost without exception the occupation of our respondents demanded decision-making at a very high level, and the acceptance of individual responsibility. This is true even of the civil servant and of the teachers, two of whom were school principals. All occupations listed call for the exercise of initiative and drive. It is very apparent that the local authority elected elite in the major cities at least are a long way from the normal rate-payer image. They are drawn from the very top layer of society, and from groups accustomed to taking their own decisions. Their occupational experience should in all cases have given them a very adequate preparation for their role as councillors.

ii) Mobility and Its Significance:

It is obvious that the local government elite interviewed have been drawn from the very top layer of society; this is true of their educational level, of their income level, of their occupations and of their occupational status.

Contact, past experience and sharpened perceptions will tell this group how the other half of society lives; their present experience will not necessarily equip them in this respect. Thus an important mitigating factor with regard to this group's ability to represent the interests of all sections of society lies in the degree of upward mobility which they have exhibited in their own careers, and also in relation to the occupational status of their fathers. The great majority derive from a lower social stratum than that which they now occupy. In ten cases the father was a skilled artisan, in two a miner or an engine driver. Only three fathers were rated as semi-skilled, and one was a junior clerk. Thus in one-third of the cases the status of the father's occupation was substantially lower. This very recent upward mobility can help to ensure a greater ability to perceive the needs of the less privileged members of society.

In their own careers too they have been upwardly mobile, the elected more so than the professionals. Where men have moved up the occupational, material and social ladder, this mobility will tend to supply them with experience which can help them to interpret the needs of those lower in the social scale.

The degree of horizontal mobility, on the other hand, was relatively low, the majority being the product of one occupational environment. Here too elected persons tended to have been slightly more mobile than professionals. It is evident that the modern trend towards specialisation makes experience in more than one occupational field a comparative rarity. This is to some extent compensated for by the diversity of extra-occupational interests, particularly among the elected councillors.

iii) Extra-Occupational Activity:

For the purpose of analysing extra-occupational activities, these were divided into spheres of interest, analogous to the functions of local authorities.

It is obvious that these extra-occupational interests supplement to some extent the occupational qualifications of the elite. For while the sample included no physical culturists, there were a considerable number of both elected and professional personnel who belonged to sporting clubs, and thus would be sufficiently interested in the provision of recreational amenities to act as a spur in this regard. This was true in greater measure of the elected elite who make the policy decisions.

The sample included no artists, actors, singers or musicians, but there were numbers who belonged to cultural societies of one type or another. The theatre was particularly well represented and there were several members of library committees, and one member of a museum board. Officials tended to be rather more active than councillors in this sphere. The heaviest concentration of interest in both groups is found in the educational sphere. No less than 15 of the elected elites belonged to school committees, school boards, or to the committees in charge of youth organisations. The other important field of interest lay in health and welfare. One may thus remark that in nearly all the spheres, which we noted as being absent in the occupational analysis, were represented in these voluntary spheres of interest. The comparative lack of interest in organisations dealing with Non-Whites is perhaps deceptive, for many health and welfare organisations deal very largely with non-Whites. Those interested in health and welfare must automatically learn something of their living conditions and problems.

Elected councillors were very much more involved in the extra-occupational field than were the professionals. This is especially so in view of the fact that for the elected personnel these voluntary occupations were additional to their local authority involvement, which is in itself a voluntary activity. Among the elected councillors about half were involved in four or more fields; among the professionals such diverse involvement was rare.

One may conclude that the elite group we interviewed is heavily involved in work for the community at many different levels and in many different fields. The Maud Commission reports a similar heavy involvement in voluntary work as a characteristic of Councillors in Britain, where, on the average, they belonged to between six and seven organisations. The wealth of experience which they gain in voluntary service, or in scientific and professional associations, must surely be to the benefit of the local authorities which they serve. It is interesting to remark that these voluntary interests compensate in some measure for the absence of certain occupational groups from the ranks of the elite.

iv) Inter-Racial Contact and Its Significance for Legislators and Administrators:

The nature and extent of the contacts which the elite have with members of other racial groups have a very particular relevance in determining the field of experience which councillors and officials bring to their work. It has been pointed out, in the introductory section on local government function, that those

who control our cities are called upon to order the affairs of many racial groups who are almost completely unrepresented. To make informed decisions they must understand the needs and circumstances peculiar to these groups, and thus some form of contact with them is essential.

Five basic types of contact situations were identified: that between employer and employee; that between a person rendering a service and a customer or client; that of co-worker with a more or less equal standing, e.g. of doctor to nurse, or of attorney to attorney; co-members of committees and organisations and, finally, social contact. The classification aims to discriminate between involuntary relationships in which the element of authority dominates, e.g. employer-employee, and purely voluntary relationships conducted more or less on a footing of equality, e.g. a social relationship.

Only one member of the elected elite had no contact at all with non-Whites. It was apparent that the dominant form of relationship which exists is that between employer and employee. One-third of the whole group had no other form of contact at all. About one-quarter of those interviewed had contact at three levels, employer/employee, server/customer and co-worker.

The lack of social intercourse was also remarkable, and not unexpected in the South African situation. Only eleven elites had social contacts, and these were all highly placed; in the official ranks they included Town Clerks, City Treasurers, non-European Affairs Administrators and Medical Officers of Health. Among the elected they included Mayors, Deputy Mayors, and a Divisional Council Chairman. From this list it would appear that the social relationship is a function of official office.

One may conclude that a number of elites have contact with non-Whites at other than employer/employee level. Those who are thus in touch with other racial groups must be a means of communicating the needs and circumstances of unrepresented groups.

4. ATTITUDES OF LOCAL AUTHORITY ELITES RELATED TO THEIR LOCAL AUTHORITY FUNCTION:

i) Attitudes Towards Segregation:

Respondents were asked to state their attitudes to the enforcement of separation in several spheres of social activity, i.e. in the use of public facilities (hotels, buses, beaches and toilets), in social contact (in private homes), in industrial employment (job reservation and trade unionism), in university education, church attendance, residential areas and international sport.

Respondents could select from three alternatives when indicating their feelings. These were (i) that segregation should be rigidly enforced by law, (ii) that there should be limited legal enforcement, or (iii) that there should be no enforcement at all. They were also given the opportunity of indicating whether they felt differently about Africans, Coloureds and Indians.

There was little difference noticeable in attitudes to the three groups; Africans, Indians and Coloureds were normally all treated on the same basis by respondents.

A difference showed itself to exist between English-speaking and Afrikaner attitudes. The latter had an attitude to segregation which was far more consistent than their English-speaking counterparts. In all but two of the areas that the question covered, they favoured rigid segregation by law, except in the field of industrial employment where they favoured limited enforcement by law.

The English-speaking, on the other hand, seemed to accept that the demands of the economy make relaxation of the colour bar essential. Two-thirds of them were against segregation in any form in industrial employment, while a smaller number opposed segregation in trade unions.

With regard to social mixing, however, the English-speakers were much more reserved. While the majority of them were against enforcement of segregation of any kind in the matter of church worship, university attendance, entertaining in private homes, international sport and on buses, most of them favoured segregated residential areas and limited segregation in the use of beaches, public toilets, and in the matter of access to hotels.

In their study of White South African attitudes, W. Hudson, G. Jacobs and S. Biesheuvel¹⁾ delineated three basic types of people, according to their attitudes to a variety of topical issues in South Africa today. The English-speaking group we have just been discussing would seem to fall somewhere between what they called the 'evolutionary':

'On occupational and economic development he would place no limit. But on social mixing he imposes a caste barrier. He would still want to select his neighbours and the schools his children attend as he does now ... The evolutionary is prepared to give the Black man the opportunity to integrate while reserving the right to select his own social milieu'²⁾.

and the 'moderate':

'Eighty per cent of the *moderates* reject job reservation ... The majority are not prepared to mix socially with the Black man. Most of those who are willing to accept social mixing qualify their acceptance by erecting social caste barriers. Most of them are opposed to mixed schools, nor would they accept the Black man as a neighbour'³⁾.

ii) Attitudes towards Politics and Race Relations:

The main opposition party in South Africa receives much greater support from the local authority elite interviewed, than does the party in power. (United Party 26; Progressive 4; National Party 12). In this sense these local authorities can be expected to exert pressures to combat power concentration in the central government. The Progressive Party, which is much more strongly opposed to the National Party, is also represented, especially among elected councillors. Support for the Progressive Party is out of proportion to the very little electoral support this Party receives on either provincial or national level.

More than half the elected councillors were politically active, while only one of the professionals was. The tradition of non-participation in party politics among public officials seems to be well established among these municipal employees.

In spite of this considerable support for opposition parties, there tends to be a strong measure of support for legislation to separate the races in South African society. Many of the supporters of rigid legal enforcement of segregation were to be found in the ranks of the United Party. The Progressive Party supporters favoured little or no enforcement of segregation.

1) Hudson, W., G. Jacobs, and S. Biesheuvel, (1966): *Anatomy of South Africa: A Scientific Study of Present Day Attitudes*: Purnell and Sons, Johannesburg.

2) Op. Cit., page 60.

3) Op. Cit., page 66.

5. SUMMARY:

As was stated earlier, the group interviewed is not representative of office holders in local government, whether professional or elected, in South Africa. The findings reported so far point to several interesting trends which we anticipate being able to confirm when interviewing is completed.

They were drawn from the top level of society, educationally, occupationally and from the point of view of income. And they were, of course, drawn from only one racial group. At an inter-racial level this may be an impediment to the functioning of democracy at local level, in spite of the mitigating factor of inter-racial contact which we noticed, and the involvement of about one-third of the group in welfare projects of various kinds. But presumably this group is capable of representing the interests of their White electorate; the social distance of these people from the majority of the electorate by way of economic, cultural and social standing is probably mitigated to an extent by inter-generational mobility, individual mobility, and their involvement in a wide spectrum of community effort. The survey has shown glimpses of the grass-roots of our local government democracy by demonstrating the involvement of these elites in multifarious activities and contacts.

The group was well prepared educationally. Those less highly educated tended to compensate for their lack of formal qualifications by high achievement in occupation, and by a high degree of involvement in community affairs. The occupational skills best represented among the elected included law, finance, building and construction. These skills are the basic ones demanded by municipal functions. We also noted the high occupational status of the elected elites, most of whom were practised decision-makers before they reached the council table, and practised employers of labour. Extra-occupational activities tended to compensate for a lack of experience in the world of culture, health and welfare.

Although it was found that the local government elite interviewed constituted political opposition to the government in power, there was nevertheless evidence of support for segregation policies among those opposed to the government. The mere fact of political divergence of local and national representation may, however, mitigate centripetal tendencies in the body politic.

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SOME PATTERNS AND CORRELATES OF INFORMAL
SOCIAL PARTICIPATION IN A HIGHLY URBANISED
FLAT-DWELLING COMMUNITY IN SOUTH AFRICA:
A COMPARATIVE STUDY

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Informal social participation and primary group interaction with friends, relatives and neighbours, is of obvious importance in producing common and cohesive values in a community, and in integrating the individual into the group and into the organisation of the society.

Both speculative and more systematic theorising on the nature and cause of rural-urban, or folk-urban, differences in social participation has a long history in sociology¹). This thinking has most often taken the form of ideal-typing rural and urban communities respectively as polar extremes, among other things in the degree to which the individual is integrated into the intimate neighbourhood community or into a kinship group. In the 'twenties, 'thirties, and 'forties, it became almost traditional to claim that the growth of cities had been accompanied by the substitution of superficial secondary group interaction for primary face-to-face relationships²). Among others, Robert Redfield's field studies appeared to verify this traditional point of view³).

In 1938, Louis Wirth provided what was perhaps the first comprehensive systematic analysis of urban social life in his now famous article: 'Urbanism as a Way of Life'⁴). Wirth postulated a form of ecological causality, inasmuch as he saw the quality of urban life arising mainly out of the size, density and the heterogeneity of the inhabitants of cities. Among the characteristics of urban social life which Wirth contrasted with rural or village life were the following: weakened bonds of kinship and neighbourhood solidarity, less interpersonal intimacy, partial involvement of people with one another, and 'segmentalised' social contacts, and a tendency for interpersonal interaction

- 1) Writers on this subject have included Ferdinand Tönnies who made the well-known distinction between 'gemeinschaft' and 'gesellschaft' characteristics in community structure. Other well-known early writers were Emile Durkheim, Georg Simmel, C.H. Cooley, Herbert Spencer, L.T. Hobhouse and Henry Maine.
- 2) See for example: Robert E. Park, 'The City: Suggestions for the Investigation of Human Behaviour in the Urban Environment', in Park, R.E., E.W. Burgess and R.D. McKenzie (1935): *The City*: University of Chicago Press, Chicago. Harvey W. Zorbaugh, (1929): *The Gold Coast and the Slum*, University of Chicago Press, Chicago; and Sorokin, P.A., and C.C. Zimmermann, (1929): *Principles of Rural-Urban Sociology*: Henry Holt, New York.
- 3) Redfield R., (1941): *The Folk Culture of the Yutaan*, University of Chicago Press, Chicago.
- 4) Louis Wirth, (1938): 'Urbanism as a Way of Life', *American Journal of Sociology*: 44, 1 - 24.

to be prompted by instrumental rather than sincere motives. These characteristics were regarded as leading in turn to transient friendships and to superficiality and anonymity in urban social life. Under such circumstances the danger of anomie and personal disorganisation was assumed to be great.

As these views gained currency among other social scientists, a certain 'rural modality' began to pervade the field of urban sociology¹). Over the last two decades however, the theories of rural-urban or folk-urban contrast have been heavily criticised on grounds of lack of precision, logic, and objectivity, and also because the interconnections between ecological patterns and social relations have seldom been specified²).

The traditional view of social relations in the city as being attenuated and superficial in character has also been largely refuted by the results of numerous empirical investigations³), the results of which have suggested that the more or less complete substitution of primary by secondary group interaction which has been assumed does not take place. Indeed, it has been claimed that the city man might have even greater opportunities for intimate and rewarding interaction with friends than his rural counterpart. Unfortunately, too many otherwise good textbooks still contain references to the so-called 'anonymity' of city life⁴).

It seems reasonable to assume that friendship relations in cities do not originate in the local neighbourhood community, but rather within city-wide organisations or social strata. Hence the neighbourhood is of less social relevance in the city than it is in the country⁵). No clear statement can be made on the extent of local intimacy in the city, however, since various studies⁶) have suggested that differing frequencies of neighbourhood contact exist in different cities and in different neighbourhoods within cities.

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- 1) See discussion in Reissman L. (1964): *The Urban Process*: Free Press of Glencoe, London, p. 149.
 - 2) For an excellent discussion of the criticisms by Reiss, Stewart, Lewis and Mirer, see Leonard Reissman, *op. cit.*, Ch. II, and see also Richard Dewey, (1960): 'The Rural-urban Continuum - Real but Relatively Unimportant', *American Journal of Sociology*, 60, 60-66.
 - 3) See Joel Smith, William Form and Gregory Stone (1954/1955): 'Local Intimacy in a Middle Sized City': *American Journal of Sociology*: 60, 276-284; M. Axelrod, (1956): 'Urban Structure and Social Participation': *American Sociological Review*: 21, 13-18; Floyd Dodson, (1951): 'Patterns of Voluntary Association Among Urban Working Families': *American Sociological Review*: 16, 687-693; Wendell Bell and Marion Boat (1956/1957): 'Urban Neighbourhoods and Informal Social Relations', *American Journal of Sociology*, 62, 391-398.
 - 4) For example: Svend Reimer (1952): *The Modern City*: Prentice Hall, New York, Ch. 8, pp. 188-196; Broom & Selznick (1963): *Sociology*: Harper and Row, New York, pp. 600-614; E. Gordon Erikson (1954): *Urban Behaviour*: MacMillan, New York, pp. 290, 297, 302, 305.
 - 5) A point more fully discussed by Scott Greer (1956): 'Urbanism reconsidered: A Comparative Study of Local Areas in a Metropolis': *American Sociological Review*, 21, 19-25.
 - 6) See Peter H. Mann (1965): *An Approach to Urban Sociology*: Routledge and Kegan Paul, London, pp. 169-170; Smith, Form and Stone, *op. cit.*; Morris Axelrod, *op. cit.*; Bell & Boat, *op. cit.*; and Donald L. Foley (1952): *Neighbours or Urbanites*: University of Rochester Press, Rochester, New York; Judith Shoval (1956): 'Class and Ethnic Correlates or Informal Neighbouring': *American Sociological Review*, 21, 453-458; James H. Williams (1957/1958): 'Close Friendship Relations of Housewives Residing in an Urban Community': *Social Forces*: 36, 358-362.

It seems possible that there is a tendency for neighbourhood intimacy to increase with distance from the central city area¹⁾, and for both neighbourliness and friendship to reach a peak in the relatively homogeneous American suburbs, where a high incidence of middle-class families with children as well as the physical arrangement of houses might foster intensive contacts between residents²⁾. Some writers, however, have argued against the tendency to assume an ecological causality in regard to suburban social life, and have produced some evidence to show that garden suburbs might attract more rurally-orientated people who are more inclined than others to intimate neighbourhood participation³⁾.

There have been eloquent criticisms⁴⁾ of suburbanism on the grounds that a pervasive homogeneity depresses the vitality of social life, and that intensive neighbourhood friendships destroy privacy and produce an oppressive conformity. Herbert Gans, after conducting an intensive study of one suburb⁵⁾ admits that the often-criticised phenomena do occur, but avers that negative consequences do not always follow. He was able to report on less loneliness, boredom and feelings of depression among suburban residents than what they had previously experienced while living in the city.

Bearing in mind this broad background of previous research and thinking, it would seem to us that any attempts to formulate ideal typologies of cities or suburbs in general, are bound to prove fruitless in the end. A more promising avenue of investigation seems to lie in describing and explaining variations in social life between particular urban (or suburban) areas which differ in terms of certain dominant characteristics. It was with this broad aim in mind that we included questions on informal social participation in the schedules of two major social surveys conducted in Johannesburg between 1962 and 1964. We report on some of the findings below and in this way we hope to shed some light on informal social participation in South Africa's major city, Johannesburg.

THE DATA AND THE AREAS STUDIED:

The first study was conducted in Hillbrow and parts of Berea in Johannesburg. This area, situated on the North-Eastern periphery of the central business district, has a preponderance of residential flats⁶⁾. It is this feature which has earned the area its popular name of 'Flatland'.

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- 1) Smith, Form and Stone, *op. cit.*
 - 2) See Anselm Strauss (1961): *Images of the American City*: Free Press of Glencoe, New York; Broom and Selznick, *op. cit.*, pp. 612-614; R. Dewey (1948): 'Peripheral Expansion in Milwaukee County', *American Journal of Sociology*; 54, 122-123; W.H. Whyte (1953): 'The Outgoing Life': *Fortune*: 49, 28; N.P. Gist (1952): 'Ecological Decentralisation and Rural-Urban Relationships'; *Rural Sociology*: 17, 331.
 - 3) See discussion in Sylvia F. Flava (1956): 'Suburbanism as a Way of Life': *American Sociological Review*: 21, 34-37; and Walter T. Martin (1956): 'Structuring of Social Relationships Engendered by Suburban Residence': *American Sociological Review*: 21, 446-453.
 - 4) Whyte, W.H. (1956): *Organisation Man*: Simon and Schuster, New York; H. Henderson (1953): 'The Mass Produced Suburbs'. *Harpers Magazine*, 207, 31-37.
 - 5) Herbert J. Gans (1967): *The Levittowners*, Allen Lane, The Penguin Press: Summarised in *New Society*, 28th Sept. 1967, No. 261.
 - 6) The word 'flat' has the same meaning as the American term 'apartment'.

Although 'Flatland' comprises less than half of one per cent of the total surface area within the municipal borders of Johannesburg, it contains between a quarter and a third of the city's residential flats. Tall buildings are to be found on almost every city block. There are a few houses in the area, but these form a very small proportion of the residential units. The houses that remain are destined to make way for multi-storey buildings in the immediate future. 'Flatland' is characterised by an almost complete absence of open spaces, very few parks, high traffic density, and an advanced development of commercial facilities, such as coffee bars, cinemas, nightclubs and gambling saloons. 'Flatland' served as a residential area for roughly 26,000 people at the time of the study. It is the most densely populated area in South Africa, and possibly one of the most densely populated non-working class areas in the world.

During 1960 the Social Research Unit of the Department of Sociology of the University of the Witwatersrand commenced planning a community study of Johannesburg's 'Flatland'. This area was chosen for study because it was felt that in many respects it could serve as a model or 'ideal type' of a South African urban community occupying a position on the urban extreme of the rural-urban continuum.

Interviews were conducted with a representative sample of the area's residents. A multi-stage stratified random sampling design was used. The first stage of the sample involved a 50 per cent random selection of residential buildings within three strata, distinguished by the ages of buildings. The second stage of the sample consisted of the selection of dwelling units within each of the buildings selected at the first stage. The selection was pre-weighted¹⁾, in order to ensure that individuals would have an equal chance of selection, despite living in flats with differing numbers of occupants. Finally, residents over the age of 18 years were selected from dwelling units according to the method devised by Kish²⁾. Altogether 482 'Flatland' residents were interviewed.

The second study was conducted in 1964. This research was based on a simple random sample of 31 suburbs³⁾ drawn from the 311 suburbs within the municipal area of Johannesburg. The 31 suburbs are well representative of the city's residential areas in terms of socio-economic status, population density, style of dwelling units, and proximity to the city centre. Within each of the selected suburbs, a simple random sample of streets was drawn, with the number of streets proportional to the size of the suburb. Thereafter every third dwelling was selected from each of the streets in the sample⁴⁾. The final stage of the sample consisted of selecting respondents over the age of 18 years

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- 1) Information on the average number of occupants per dwelling unit, obtained from the Bureau of Statistics, was used for weighting the sample.
 - 2) Kish, L. (1949): 'A Procedure for Objective Respondent Selection Within the Household', *Journal of the American Statistical Association*: 44, 380-387.
 - 3) South African and American 'suburbs' are to be distinguished. The word 'suburbs' in America is usually reserved for small dormitory towns on the fringe of the city boundaries. In South Africa, the word is used to refer to township areas (residential areas built-up with houses standing on plots large enough to give gardens), both inside and outside the city boundaries. In America there tends to be much less single unit garden township development within municipal boundaries than is the case in South Africa.
 - 4) Care was taken to ensure that regularities would not bias the selection.

within dwelling units using Kish's method. Altogether 1884 interviews were completed by senior under-graduate students in the Department of Sociology at the University of the Witwatersrand.

SOME COMPARISONS BETWEEN CENTRAL AND NON-CENTRAL AREAS IN JOHANNESBURG:

In order to study differences between the central 'Flatland' area and different types of suburban localities, we have distinguished between respondents living in richer and poorer suburban areas and between those living in houses and flats¹⁾. A tabulation of the results in regard to frequency of contact with relatives within each of the ecological categories mentioned is given in Table I²⁾.

TABLE I

PERCENTAGE DISTRIBUTION OF FREQUENCY OF CONTACT
WITH IMMEDIATE RELATIVES ACCORDING TO TYPE OF AREA,
SOCIO-ECONOMIC STATUS OF AREA, AND TYPE OF RESIDENCE:

How often Relatives are seen by respondents	Suburban-Upper SES*		Suburban-Lower SES*		Central 'Flatland'
	Houses	Flats	Houses	Flats	Flats
Daily	28.0%	25.1%	28.0%	25.8%	21.0%
Twice weekly	15.5	16.2	13.9	11.8	15.2
Once weekly	25.3	22.4	24.6	24.2	19.8
Fortnightly	3.6	7.3	5.1	5.1	4.8
Monthly	2.8	3.4	7.5	6.2	3.5
Less frequently	2.9	2.2	3.2	3.9	3.3
Rarely/Never	3.2	2.2	4.5	2.8	4.6
No relatives in city	18.3	21.2	12.2	19.7	27.2
No information	0.4	-	1.1	0.6	0.6
TOTAL	100.0	100.0	100.0	100.0	100.0
BASE:	475	179	970	179	482

* SES = Socio-Economic Status

- 1) While acknowledging the differences between the South African and American meanings, we will use the word 'suburban' in the text to refer to the non-central city areas studied. Suburbs were distinguished on the basis of the mean family income of each suburb at 1960, with R2,300 p.a. as the cutting point. The information was derived from a special analysis of 1960 census data made by a Johannesburg Property and Development Consultant, Mr. A.I. Cohen.
- 2) Data in respect of one 'suburb' in the 1964 survey have been omitted from Tables I to IV as the writers felt that it could not be classified as suburban because of its character as a zone of transition abutting the central city area.

The results generally suggest a high frequency of contact with close relatives among all White residents in Johannesburg. Overall contact with relatives is slightly less frequent in the central area than in suburban areas taken together¹⁾, but the statistical significance is due largely to the fact that a greater proportion of central city residents have no relatives in Johannesburg²⁾. No significant differences exist between residents in central and suburban flats, however³⁾, so it would appear that the previous difference might relate more to type of dwelling than to distance from the centre of the city. In the suburbs, the residents in upper socio-economic areas tend to have slightly more frequent contact with relatives than those in lower socio-economic areas⁴⁾.

Frequency of contact with friends is shown in Table II.

TABLE II

PERCENTAGE DISTRIBUTION OF FREQUENCY OF MUTUAL VISITING OR GOING OUT WITH FRIENDS ACCORDING TO TYPE OF AREA AND TYPE OF RESIDENCE

Frequency of Contact with Friends	Suburban-Upper SES		Suburban-Lower SES		Central 'Flatland'
	Houses	Flats	Houses	Flats	Flats
Daily	6.3%	11.8%	7.5%	8.4%	11.2%
3 times weekly	22.3	25.8	9.5	10.1	18.3
Twice weekly	24.8	19.7	14.1	19.0	17.8
Once weekly	27.0	23.0	27.0	29.6	26.3
Once a week to once a month	13.1	10.1	19.5	11.7	14.9
Less frequently	6.5	6.2	19.9	17.9	9.8
No information	-	3.4	2.5	3.4	1.7
TOTAL:	100.0	100.0	100.0	100.0	100.0
BASE:	475	179	970	179	482

- 1) Chi-square = 39.7, d.f.=5, $p < .001$. Levels of confidence specified in this paper are those applying to simple random samples. Kish, (see Kish, L. (1951): 'Confidence Intervals in Cluster Samples', *American Sociological Review*: 22, p. 154), points out that levels of confidence for data of multi-stage samples are not necessarily those for simple random samples. The multi-stage nature of the sampling design would have the effect of decreasing the confidence levels. However, the effects of stratification would be in the opposite direction, namely to increase the confidence levels.
- 2) With the category 'no relatives' excluded, chi-square = 4.4, d.f.=2, $p > .30$.
- 3) Chi-square = 7.2, d.f.=5; $p > .20$
- 4) Chi-square = 13.1, d.f.=4, $p < .02$ with category 'no relatives' excluded.

Results in Table II show a clear gradient in the frequency of contact with friends according to different areas, with the upper socio-economic suburban areas revealing highest frequency, followed by the socio-economically mixed central area, and then by the lower socio-economic suburban areas which have the lowest frequency of contact¹⁾. When the analysis is limited to flats, the same relationship pertains at a slightly lower level of significance²⁾. Interestingly enough people living in flats have more frequent contact with friends than people living in houses³⁾.

Although significant differences in frequency of contact with friends and relatives exist between areas of upper and lower socio-economic status, and between houses and flats, in no category have the results suggested any serious degree of social isolation or loneliness. Admittedly, nearly one-fifth of the people living in poorer areas see friends less often than once a month, but we have no proof to present in this paper as to whether or not these people do not compensate for this in the frequency of their interaction with relatives or even perhaps with their colleagues at work. Some light can be shed on the extent of social isolation as such by the results of Tables III and IV, which present the respondents' own subjective assessments of the adequacy of their friendships.

TABLE III

PERCENTAGE DISTRIBUTION OF NUMBER OF FRIENDS OR RELATIVES THAT RESPONDENTS' FEEL THEY CAN REALLY TRUST AND TURN TO IN TIME OF NEED, ACCORDING TO TYPE OF AREA AND TYPE OF RESIDENCE

No. of friends, relatives that respondents feel that they can trust	Suburban-Upper SES		Suburban-Lower SES		Central 'Flatland'
	Houses	Flats	Houses	Flats	Flats
None	2.9%	1.1%	9.1%	3.7%	6.4%
One	3.6	7.8	8.0	11.8	7.7
Two	9.6	14.5	14.1	18.7	10.8
Three or more	80.5	72.1	66.6	63.6	73.9
no information	3.4	4.5	2.3	2.1	1.2
TOTAL:	100.0	100.0	100.0	100.0	100.0
BASE:	475	179	970	179	482

Results in Table III show that the central area once again occupies a mid-way position between the richer and poorer suburban areas, with the people in the richer areas feeling that they have more dependable friends and relatives than the poorer residents⁴⁾. In addition, significant differences⁵⁾ exist between the four categories: upper suburban houses, flats, lower suburban houses, and flats. A slightly higher proportion of residents in houses appear to have no dependable friends or relatives than those in flats, but on the other hand the pattern is reversed in regard to the proportion with three friends or more.

1) Chi-square = 146.2, d.f.=10, $p < .001$.

2) Chi-square = 29.1, d.f.=10, $p < .01$.

3) Chi-square = 16.0, d.f.=5, $p < .01$.

4) Chi-square = 47.5, d.f.=6, $p < .001$.

5) Chi-square = 65.7, d.f.=9, $p < .001$.

Another way of determining the respondents' subjective assessment of the adequacy of their primary group contacts was to ask how they felt about the number of friends they had (Table IV). In this regard it would seem as if there are slightly but significantly more feelings of social isolation in the central area than there are in the suburbs¹).

TABLE IV

PERCENTAGE DISTRIBUTION OF RESPONDENTS' FEELINGS
CONCERNING THE NUMBER OF FRIENDS THEY HAVE,
ACCORDING TO TYPE OF AREA AND TYPE OF RESIDENCE:

Feelings regarding number of friends	Suburban-Upper SES		Suburban-Lower SES		Central 'Flatland'
	Houses	Flats	Houses	Flats	Flats
Too few	11.6%	13.6%	11.7%	14.5%	17.3%
About right	75.5	75.5	65.7	68.7	64.2
Few, but enough	8.3	8.7	16.1	12.9	13.5
Too many	4.0	2.2	6.2	2.8	3.5
TOTAL:	100.0	100.0	100.0	100.0	100.0
BASE:	475	179	970	179	482

Differences between the replies of residents in flats and houses in the suburbs are significant²), suggesting that a slightly higher proportion of people in flats than those in houses feel that they have too few friends. Significantly higher proportions of people in the richer areas are satisfied with the number of friends they have than the proportions in the poorer areas³). The position in the poorer areas appears not to be that many people feel that they have too few friends, but that a higher proportion of people feel that they either have too many friends, or that the few friends they do have are quite sufficient. This might in fact reflect some disenchantment with friendship relations generally, as the results in Table III might suggest.

The results we have discussed up to this point tend to show that while the majority of people in the central area are not at all isolated or lonely, approximately 17% of the residents feel that they have too few friends, and this proportion is significantly higher than the equivalent proportions in the suburbs. This fact certainly would not allow us to stereotype the central area as being characterised by widespread human isolation or loneliness, but it does indicate that the central area might contain proportionally more of the types of individuals who tend to be socially less well-integrated than is common. With this possibility in mind, we examined some groups within the central area itself in order to see how their responses would compare on the different indices of social integration.

1) Chi-square = 10.6, d.f.=3, $p < .02$.

2) Chi-square = 8.9, d.f.=3, $p < .05$.

3) Chi-square = 25.9, d.f.=3, $p < .001$.

SOME COMPARISONS BETWEEN GROUPS IN THE
CENTRAL AREA OF JOHANNESBURG ('FLATLAND'):

For reasons of brevity we cannot discuss the whole range of cross-tabulations which were analysed and for the same reasons cannot present any cross-tabulations in full in the text. We will discuss only those tabulations where differences between groups proved to be significant¹⁾.

In regard to contact with friends, it would seem that older women have significantly less interaction than younger women do²⁾. The following are the proportions of women in various age groups who see friends less than once per week:

Under 29 years -	12%
30 to 49 years -	27%
50 to 59 years -	42%
60 years or more	40%

No differences between age groups among men are significant, however. When results are analysed in terms of the marital status of respondents, significant differences do appear³⁾. The proportions seeing friends less than once a week are as follows:

Unmarried -	9%
Married -	36%
Separated/ Divorced -	21%
Widowed -	39%

We can assume that family contacts would compensate for the high degree of relatively infrequent contact with friends among married people. A problem group in this regard seems to be the widowed people in central Johannesburg.

These are the only significant differences between groups which emerged on the indices we have dealt with up to now. In the survey in the central area, however, certain additional questions on friendship were asked. Respondents were required to give an indication of the proportion of the people with whom they mixed that they could regard as being 'sincere friends'. The inclusion of this item was motivated by the traditional view of the city as a place where friendships are often instrumental and superficial.

In the analysis of the replies to this question, differences between the sexes and between age groups were found to be significant⁴⁾. The following are the proportions of respondents in various groups who could state that *most* of the informal acquaintances with whom they mixed regularly were sincere friends:

Males -	43%	Under 29 years	48%
Females -	59%	30 to 39 years	38%
Both sexes -	53%	40 to 59 years	57%
		60 years and older	71%

Judging from these results, and from the replies to a question in which respondents were asked why they mixed with insincere friends, it would seem that the problem exists mainly among men in the 30 to 39 year age group. Men in this group mix with 'insincere people' for reasons indirectly or directly connected with their careers, and in this sense there might be some support for the traditional urban sociologist's point of view. Nevertheless, the fact remains that

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- 1) We have also excluded any analysis of frequency of contact with relatives because the presence of large numbers of migrants in the area would have necessitated extensive controlling to eliminate the effects of intervening variables; operations which are beyond the scope of this paper.
 2) Chi-square = 30.6, d.f.=6, $p < .001$.
 3) Chi-square = 31.5, d.f.=6, $p < .001$.
 4) Sex: Chi-square = 17.4, d.f.=3, $p < .001$.
 Age: Chi-square = 36.4, d.f.=9, $p < .001$.

in the entire central city sample, only some 13% of respondents could state that *most* of their acquaintances were not sincere friends. The lack of sincere friends is quite clearly a condition affecting only a minority of residents.

Bearing in mind the traditional claim that friendships in the city are fleeting or transient, we included an index of the duration of friendships, namely, a question on the length of the friendship between the respondent and his or her best friend of the same sex. There is little in our results to support the traditional claim. Two-thirds of the respondents had known their best friend for more than 4½ years, and one-third for over 15 years. Only 5% of respondents had known their best friend for less than one year.

In regard to neighbourhood social contact our material does, however, provide support for the notion that neighbours are strangers to one another in central city areas.

Only 22% of our respondents visited neighbours once a month or more frequently¹⁾. There appears to be a significant if slight tendency for older women to visit neighbours more frequently than younger women²⁾, but no other relationships were found to be statistically significant.

Even in regard to brief chatting to neighbours in lifts, corridors and entrances to the buildings, the results are quite surprising. Nearly one-half of our group of respondents (48%) chatted to neighbours less frequently than once a month, and over one-third (37%) did not speak to any of their neighbours at all. Considering that people in the Hillbrow/Berea/Central city area of Johannesburg generally live in very large blocks of flats and must pass dozens of neighbours daily in various parts of the buildings, the figures do indeed suggest that considerable social reserve exists between neighbours in these areas. Nevertheless, it is possible that the majority of central city residents prefer to maintain this reserve. Some support for this view might be found in the fact that only 12 respondents, or 2.5% of the entire sample made mention of unfriendly people or lack of contact with neighbours as a reason for disliking the area they lived in.

The required length of this paper limited the number of different analyses which could be conducted on the items discussed above, and therefore only the variables of age, sex, and marital status were studied intensively.

More in order to suggest lines of further investigation on this type of data than anything else, it was decided to make a brief analysis of the differences in scores on a short scale of social isolation³⁾ between different

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- 1) Neighbours were defined as people living in the same block of flats as the respondent or in blocks of flats immediately surrounding.
 - 2) Chi-square = 10.2, d.f.=4, $p < .05$.
 - 3) The scale of social isolation was based on a scale constructed in the United States by Dwight Dean. See Dwight Dean (1961): 'Alienation, its Meaning and Measurement': *American Sociological Review*: 26, No. 5. It contains 8 statements, each scored on a five point continuum of 'strongly agree' to 'strongly disagree'. The items are designed to test the degree to which the person responding feels lonely, feels that friendships are dependable, feels that the community is friendly, and feels that he is meaningfully integrated into a primary group of friends. The 8 items were subjected to item analysis (using a modified item-whole correlation technique) and found to be reasonably unidimensional, inasmuch as all individual item scores discriminated significantly between high and low scores on the total scale. For the purposes of this article scale scores were tabulated against the respondent's feelings concerning number of friends, and the two variables were found to be related.

socio-cultural groups in the area. The area studied is known for its cosmopolitanism, since it contains large numbers of individuals who are members of minority groups, like Jews and immigrants to South Africa. It was felt that it was necessary to obtain a brief indication of how various major cultural groups compared in terms of relative social isolation (as defined by the scale). In order to maximise numbers of sample cases all immigrant groups had to be combined in the analysis.

There is significant variation between the scores of foreigners, Jews, and non-Jewish English and Afrikaans-speaking South Africans on the scale of social isolation¹⁾. Jews and foreigners felt a slightly higher degree of social isolation than did members of other groups. The proportion of people in the different groups scoring above the median for the total sample were as follows: foreigners 56%, Jews 56%, English-speaking 41%, Afrikaans-speaking 50%.

It is obvious that a basic distinction must be made between feelings of social isolation on the one hand, and frequency of primary group contact on the other. When the four cultural groups were analysed in terms of the frequency of actual contact with friends and relatives, the Jewish group emerged as being relatively less isolated in the physical sense than the other groups. (In passing we would suggest that this apparent discrepancy would make an interesting topic for further investigation). In terms of the frequency of contact with friends it is the Afrikaans and foreign groups who appear to be relatively less well-integrated (although the differences here are significant at only the 80 to 90% level of confidence, and the finding is therefore only tentative²⁾). However, in regard to the extent of contact with relatives, the differences among groups are significant³⁾, with members of the Jewish group having much more frequent interaction with relatives than members of any other group. The proportions of respondents in the different groups seeing relatives once a week or more were: foreigners 48%, English-speaking non-Jews 49%, Afrikaners 48%, Jews 75%.

The last focus of analysis concerns the fairly common theory that friendships in highly cosmopolitan central city areas are likely to involve people with widely-differing cultural backgrounds. Questions were asked about the background of the respondent's best friend. The following results emerged: 29% of respondents had a best friend of a different religious background⁴⁾, and 41% of respondents had a best friend whose parents were of a different nationality to that of the respondent's own parents. These proportions speak for themselves. It would appear to be very unlikely that this extent of dissimilarity in the background of friends would obtain in suburban areas.

DISCUSSION AND CONCLUSIONS:

A general impression which we have gained from the findings is that there are most probably no ecological areas in Johannesburg nor any major social groups in which inadequate primary group interaction is a problem for a majority of individuals.

We have found statistically significant but very often marginal differences in the extent or quality of primary group interaction between people living in areas of different socio-economic status, and between people living in different types of dwellings. More often than not these differences suggest that proportionally fewer people living in the more wealthy areas and in houses have problems of inadequate integration into primary groups. Certainly, the findings

1) Chi-square on contingency table with scale scores divided at total group median = 8.3, d.f.=3, $p < .05$.

2) Chi-square = 9.1, d.f.=6, $p = .20 - .10$.

3) Chi-square = 41.9, d.f.=12, $p < .001$.

4) Categories for comparison were: Jewish, Roman Catholic, Anglican, Other Protestant, Afrikaans Protestant, Sectarian, Atheist.

show quite clearly that the variables of type of residence, and socio-economic level of area are more strongly related to the extent and quality of informal social participation than is the factor of distance from the centre of the city.

In attempting to explain these differences we would not suggest any causes of an ecological nature. We agree with Sylvia Flava¹⁾ when she suggests that different ecological areas and different types of dwellings might be likely to attract different proportions of certain types of people. We suggest that flats and poorer areas might, for entirely practical reasons, attract larger proportions of people who, because of personal circumstances, are likely to be socially less well-integrated than is normal. In addition, we do know that the class structure has many subtle and often invidious effects on less successful members of society, and therefore a relationship between social class position and ability to enjoy rewarding primary group interaction would not surprise us²⁾.

Feelings of social isolation are proportionally more prevalent among people in the central residential area of Johannesburg than they are in the suburbs. However, these problems seem to be greatest among those groups of people whose life circumstances would lead one to expect problems of social adjustment, i.e. older women, widowed people, immigrants, and minority groups (who face difficult and well-known problems of social adjustment). Similarly, superficiality of friendships is most prevalent among mature men, whose careers demand a certain amount of forced social mixing.

Generally speaking, by no stretch of the imagination can the social life in the central residential areas of Johannesburg be described by terms like 'anonymous', 'superficial', or 'alienated'. The problems which exist affect only small minorities of people seriously. Generally friendships are of long duration and seem adequately rewarding, and even the heterogeneity of culture in these areas does not discourage primary group contacts, since many strong friendships across religious and cultural barriers exist. Admittedly, social contacts between close neighbours are probably far more limited in the central areas than is probably the case in the suburbs. It is not our impression, however, that the residents themselves would have things any different.

In conclusion, therefore, it would seem to us that many of the negative features of social life which are often assumed to exist in densely populated central apartment block areas are either absent or occur on a limited scale only. Those who wish to concern themselves with problems of social adjustment and social integration should not seek explanations or solutions within an ecological framework, but should direct their attentions to the circumstances of the socially 'peripheral' people among whom problems exist, irrespective of where they may live.

1) Sylvia F. Flava, *op. cit.*

2) There is some American evidence in support of this statement: See Joseph A. Kahl, *The American Class Structure*, New York, Rinehart, 1957, pp. 137-138.

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THE MANIFESTATIONS AND PERCEPTION OF SOCIAL CLASS
AMONG AN URBAN AFRICAN GROUP

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1. INTRODUCTION:

In all but a few of the smallest and most primitive societies, some form of hierarchical rank order has developed with the rank and file (accounting for the largest number of people) at the bottom of the pyramid, and the elite, (comparatively few in number but great in power and prestige), at the top. It is the function of this elite to order the society in which they live into a working whole. In the words of Lloyd Warner, 'As division of labour increases and the social units become more numerous and diverse, the need for co-ordination and integration also increases and, when satisfied enables the larger group to survive and develop'¹). Those people who co-ordinate and integrate become, by virtue of the power they exercise, the elite. In different societies at different times the members of the elite have become so for various reasons. In early Egyptian society or in medieval society those who held power and wielded influence were members of an hereditary aristocracy, born and bred to power. Few of those not born to power and privilege ever attained it. In many African tribal societies, the chief is an hereditary leader. In a western industrial society power rests in the hands of the industrial barons and entrepreneurs.

What is the position in South Africa today? Among the White group the pace-setters by and large are the heads of the Mining Corporations and the business empires. This is especially the case in the newer inland cities. In the Cape, alongside the moguls of industry, the descendants of the early settlers, even if not the wealthiest members of the society, are accorded prestige and exercise considerable influence by virtue of the fact that they belong to the 'old families'.

What of the Black population? Is an industrially-oriented class hierarchy emerging among them in place of the tribal chieftainship resting on an egalitarian structure? Are they following the pattern set by the Whites as they become increasingly westernised, industrialised and urbanised? If so, how do they see this, and what criteria do they adopt in their placement of people in the hierarchy? These were the questions we asked ourselves when preparing to collect normative data for a study on 'Social Change and Neuropsychiatric Disturbance' being conducted by the Institute for Personnel Research.

1) Warner W. Lloyd et al. (1950): *Social Class in America*: Harper and Row, New York. For a study of class in Britain, see Moser, C.A. & J.R. Hall (1954): 'Social Grading of Occupations', in Glass, D.V. (Ed.): *Social Mobility in Britain*: Routledge and Kegan Paul, London. Also see Packard, Vance (1960): *The Status Seekers*: Longmans, London. As a general background for this paper see Hellman, E. (1963): *The Impact of City Life on Africans*: Isma Paper No. 11, Isma Publications, Johannesburg.

2. ASSESSMENT OF SOCIAL CLASS:

We had formerly carried out some investigations into social class among urban Africans. One of our findings was that occupation was very closely related to class, and that it could reliably be used as an index of class. This accorded with investigations carried out both in England, where Bott found that 'occupation was the most important criterion of an individual's class membership¹⁾, and in America where Warner weighted it more heavily than any other factor used to determine a person's Index of Status Characteristics²⁾.

The other factors used by Warner - viz. Source of Income, House Type and Dwelling Area - are hardly applicable to a Black urban population. Almost everyone is dependant upon salary or wages. The few independant businessmen, deriving an income from profits, professionals whose livelihood stems from fees charged, or people of independant means, constitute too small a proportion of the population to be in any way significant. Township residents are too restricted in their choice of house type and dwelling area for this to be accurately reflective of their status in the community.

Therefore, we decided to use, for men, their occupation as an index of class. In the case of married women we used husband's occupation for this index, for single women living at home, father's occupation and for single women who had left home, widows and divorcees, their own occupation. On this basis we divided our sample into two classes³⁾. The upper stratum we termed, for convenience and for correspondence with the terminology normally used in western society, the 'middle class'. This comprised people in non-manual occupations - i.e. professionals, managers and people who were proprietors of their own businesses, and those employed in the clerical and sales fields. The lower stratum, composed of people in manual occupations, we termed 'working-class'. This comprised craftsmen and foremen, service occupations other than domestic, operatives and semi-skilled workers (including drivers), private household and allied domestic services and labourers. There is an hierarchy in the ordering of occupations within each of the two classes. A professional (a doctor or lawyer) is a person of greater prestige in the community than a clerk or salesman, though all are middle-class occupations. Similarly a supervisor in a factory is regarded with more respect than a push-button machine operator, who in turn ranks higher than the labourer who fetches and carries and sweeps the floor.

3. PURPOSE OF EXAMINING CLASS:

Class may be examined for a number of reasons. As any advertising man knows, class governs consumption patterns. Advertisements are consciously geared to the desired consumers, and the advertising copywriter who does not understand and allow for the class-directed status symbols and mores of the group he is trying to influence is doomed to failure. Class strongly influences behaviour. In some circles behaviour is accepted or approved which in others is frowned upon. In the project of which this study of class perception among Africans formed a part, one of the hypotheses was that the incidence of the type of mental illness was related to social class. In America many scientists have found a positive relationship between class and the type of mental illness manifested, with members of the upper classes suffering significantly more frequently from neuroses than those in the lower socio-economic strata. We wished to test this hypothesis and also to ascertain if urban Africans were conscious of and sensitive to the class stratification that was developing among them. We felt too, that class consciousness would be an additional measure of integration into a Western industrial society.

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- 1) Bott, E. (1957): *Family and Social Network*: Tavistock, London.
 - 2) Warner, W. L. et. al. (1950): *op. cit.*
 - 3) Social Class is but one of the many terms of rank found everywhere. See Warner, W. L. et. al. (1950): *ibid.*

4. THE SAMPLE:

Our sample was drawn from in-patients of Baragwanath Hospital. One hundred people, 25 middle-class males, 25 middle-class females, 25 working-class males and 25 working-class females were interviewed. All had lived in an urban area, i.e. a place with 10,000 or more total population at the time of the 1951 census, for at least 10 years. Ages ranged from 21 to 76 years old. All the main tribal groups were represented.

5. BACKGROUND OF THE SAMPLE:

Household size ranged from one to 13, the mode being five persons. Most of our informants lived with their biological family. 'Other relatives' were members of 40% of the households. The head of the household was usually the main breadwinner and was almost invariably a male. Slightly more than one-quarter of our subjects were single. Labola had been paid in respect of 90% of the wives of married couples. All payments had been made in cash. Half of our informants were urban-born and half rural, but the urban-born were the younger people. About half the sample visited the rural areas with varying degrees of frequency. As less than one-fifth had any land rights, these visits were paid to maintain contact with relatives still living in the rural areas. Despite this, the sample is markedly urban-oriented. People prefer the urban area for current living, and three-quarters wish to spend their old age in town. In these aspects our sample is very similar to other groups of urban Africans which we have studied.

Yet, within this overall similarity to the population as we have found it, certain significant differences between the two groups, middle-class and working-class, emerged. In the first place - and here a world wide phenomenon is manifested - the middle-class families are smaller than those of the working-class. The modal number for household size among the middle-class is four, but six persons among the working-class. More middle-class people own land in, and visit the rural area more often, than the working-class. The frequency of visits is probably related to the greater land ownership and also to a better financial position. The fact that more middle-class than working-class people desire to spend their old age in the rural areas is another aspect related to the greater land ownership. This also seems to be related to recent urbanisation which has left people with these close ties, and not to the emergence of a custom of retiring to a coastal or country area as do many Whites.

6. OCCUPATION, EDUCATION AND INCOME:

Occupation was taken as our index of class. Education and occupation are closely related, for certain occupations are open only to people of certain educational standards. From this a close relationship between class and education is to be expected. This does, in fact, occur.

Significantly more of the middle-class attend school, and they achieve higher standards. Almost one-quarter of the working class had no schooling and only 2% had progressed beyond Std. VIII. All our middle-class subjects had had some schooling, while 64% had gone further than Std. VIII. The difference between the two groups was even more marked where additional qualifications were concerned. Only one-fifth of the working class had any post-school training. This was either some sort of vocational training (shoemaker, dressmaker, motor mechanic), or training for some specific semi-skilled occupation, such as driving. Middle-class people were trained for professions such as teaching, nursing or social work. There is no significant difference between the sexes, in respect of education. Men and women get about the same amount of schooling and have the same attainments.

There is, as is to be expected, a highly-significant relationship between class and income. The middle-class is much better off than is the working-class. This comparative affluence is reflected in their living patterns, as will be later demonstrated.

7. CLASS MOBILITY:

We found we could best measure class mobility by comparing the class of our subjects with that of their parents. In this way we compared the class into which our subjects were born with that of which they were members as adults. We found a considerable amount of real upward and apparent downward mobility. Two-fifths of our middle-class subjects had working-class fathers, while 28% of our working-class subjects had middle-class fathers. Subjects who were upwardly mobile rose from all levels of the working-class hierarchy. On the other hand, downward mobility occurred mainly among men whose parents were proprietors of their own businesses and apparently very borderline members of the middle-class. We were unable to obtain enough information to draw any definite conclusions on this point, but it seems that downward mobility is related to the low educational levels of these petty businessmen. Lacking education themselves, they did not press their offspring to obtain the qualifications necessary for maintenance of middle-class status as an employee. Neither were they affluent enough to set their sons up in business, so our subjects were forced to take jobs as factory operatives and labourers. An additional contributory factor is the pressure of business which has forced so many small shop owners out of business.

In addition to mobility from class to class there has been movement within each class, but this has been decidedly upward in character.

8. LIVING CUSTOMS:

All our subjects were resident in Soweto and, as mentioned, they were able to exercise little personal choice with regard to size or style of dwelling. Nevertheless, those who could manage to do so impressed upon their dwellings the stamp of individuality.

Structurally, the dwellings are very similar and are generally in a good state of repair, but this is to be expected when the houses are municipally-built and owned and, in essentials, maintained. Over 70% of our informants lived in four-roomed houses. Size of house was not significantly related to class, nor to the size of the household. Few people had made any additions or alterations to their houses. Two-thirds of the gardens were well-cared for and neat. Generally, front gardens were decorative and back gardens utilitarian. One-quarter of the gardens were utilitarian and decorative both in front and at the back. In these aspects the gardens did not differ between the classes. The layout of the gardens was very different. Formally-arranged gardens were usually a feature of middle-class homes, informal cultivation of working-class. The difference was even more noticeable in respect of back than front gardens. It would seem that some members of the working-class make more effort to 'keep up with the Joneses' where their effort is easily seen, but that they let things slide where critical eyes can less easily observe deficiencies. Another aspect where the classes differ, and where the middle-class might, to their own advantage, emulate the working-class is in the cultivation of vegetables. Only half of the middle-class grow any, as opposed to almost four-fifths of the working-class.

The interiors of the houses also provide evidence of class differences. Nearly all the middle-class people had furniture that could at least be described as adequate while in over one-third of these homes it was assessed by the investigators as 'better than adequate'. Among the working-class the picture is in sharp contrast. Almost two-thirds had a bare minimum of furniture, and the houses of less than one-third were adequately furnished. The remaining few had somehow achieved better than adequate furnishings.

Almost everyone decorates their home with pictures of some sort or another. It was not possible, within the limits of this study to differentiate between the styles favoured by the two classes. Presence of books, however, is closely related to class, with the middle-class owning and displaying them, the working-class doing this to a very much lesser extent.

Finally, we examined the use made of the rooms. Four-fifths of the sample arranged to have some separate living space, either by reserving one whole room for this, or, where this was not possible, by partitioning a room. There is a slight tendency for more middle-class than working-class people to make this sort of arrangement, but this difference is not significant.

9. LEISURE TIME OCCUPATIONS AND GROUP MEMBERSHIP:

Class differences are clearly observable in the way that these people spend their free time. Everyone has some way of occupying themselves when not working but the number and diversity of type of activities entered upon is far greater among the middle-class than the working-class. Over half of the middle-class have four or more spare time occupations; almost half of the working-class only one or two. Church-going is practised by four-fifths of our informants, and almost equally by members of both classes and both sexes. What we have termed 'social' diversion, i.e. visiting or entertaining is enjoyed equally by both classes, but indulged in by considerably more men than women. As this is a very 'teetotal' group, with only two men listing 'going to the beerhall' as a recreation, this preponderance of men is all the more remarkable. Personal interest (listening to the radio and gramophone and reading and lucrative pursuits), Recreational and Cultural Activities (going to bioscope and studying) and watching sport are predominantly middle-class occupations. A few working-class people try to augment their incomes in their spare time. However, in general, working-class people occupy themselves during their leisure hours with various domestic activities (sewing, odd jobs and gardening).

Among both the middle and the working-class, there is a close relationship between sex and leisure activity. In both groups domestic recreation is largely the province of women. Among the middle-class, watching sport is largely a male outlet. Among the working-class, men visit and entertain more than the women. The difference between the sexes is far more marked among the working-class than among the middle-class.

Group Membership and Class are very closely related. Half of the middle-class but only one-fifth of the working-class, belong to a group. (A small proportion of the sample belong to more than one group, but these are almost invariably middle-class people).

There is, as well, a very marked difference in the type of groups to which the two classes belong. Membership of cultural and recreational groups, professional associations or organisations devoted to community welfare, is almost entirely restricted to the middle-class. Working-class people support religious and mutual aid groups. Almost three-quarters of those members of the working-class who are members of a group belong to some sort of religious group. People join cultural and recreational and religious groups because of personal interest in the matter, or for enjoyment. Those who belong to professional organisations regard membership as automatic. Most group members feel they take an active interest in the affairs of the groups of which they are members. In this sample, office bearers are almost exclusively middle-class males. This is attributed to the fact that the sample included no members of the National Council of African Women or any similar body where office bearers must be women. Moreover, none of the middle-class women in our sample had ever held office in a professional association although several were members. This, too, would not seem to be reflective of the entire middle-class female population.

Almost all our informants are church members, three-quarters of them attending orthodox churches. One-fifth are members of African separatist sects and a very few are revivalists. There is a clear tendency for middle-class people to follow orthodox teachings while the working-class join separatist sects, but the difference is not significant.

10. ASPIRATIONS:

Over four-fifths of the sample had, or had had, aspirations. Six middle-class people had realised their ambitions by achieving success in their chosen professions. The aspirations of two-thirds of those whose aims were unfulfilled were occupationally oriented. Of these, a very high proportion, particularly among the men, desired professional or managerial employment. Three middle-class men had political ambitions. Among those whose aspirations lay outside the occupational field, the greatest number wished for economic advancement. Others desired higher education, to live by high ethical standards, to be of service to the community, to achieve cultural standards or to be successful. There is a highly significant relationship between class and the presence or absence of aspirations. A large proportion of the middle-class, but a much smaller one of the working-class, have aspirations. There is, however, no significant relationship between class and *type* of aspiration, although there is a tendency for more of the middle-class people to have occupational aims while the majority of those who desire economic security are members of the working-class. A person's sex has no significant effect either on the presence or absence of aspirations or on the type of aspiration.

The presence or absence of aspirations is very closely linked to educational achievements. The lower the standard of education of our informants, the less likely they are to have formulated any desire to be different from what they are, while almost all of those with any high school education have clearly defined aims.

Marital Status is another factor which relates significantly to the presence or absence of aspirations, for a large proportion of those whose marriage union is broken, whether by death or divorce, have no ambitions.

Over half of those whose aspirations are career-oriented see improved education and further training as means of achieving these ends. Improved economic circumstances are also felt by many to be essential for the realisation of ambitions. Here there is a tendency for working-class people to stress the need for education while middle-class people emphasise that lack of means is frustrating them.

More than half of those with aspirations do not think they will achieve their aims, the majority because of lack of either means or education. A few say they are too old, others have 'given up'.

There is a significant relationship between age and expectation of success, with, as is to be expected, the young people with greater expectations of success than the old. Expectation of success is also related to class. Here, significantly more middle-class than working-class people expect to fulfil their ambitions.

As far as our subjects' aspirations for their children are concerned, the most striking feature is the similarity of their aims for sons and daughters. There is no sex discrimination observable in respect of levels of aspirations. When an informant would like his sons to be in professional employment, then he wants professional employment for his daughters too.

Almost all the parents in the sample had aspirations for their children. Young, childless subjects, although asked what their aspirations for their children would be when they had them, were unable or unwilling to visualise a non-existent situation. Older people, whose children were adult and independent, replied that they no longer had aspirations for their children. Accordingly, the data on aspirations for their children has only been analysed in respect of the 80 parents of dependent children.

As with subjects' aspirations for themselves, but to a lesser degree, ambitions for children are markedly occupation oriented. Over half of those replying, desire professional employment for their children and one-third want their offspring to have a good education. A few state that they wish their children to enjoy economic security. In contrast with our informants' aspirations

for themselves, there is no class difference in aspirations for their children. Working-class parents have the same aims for their children as middle-class parents.

Almost all subjects feel their children will have to make their way in the world largely by their own efforts by making use of the opportunities they are given for education and training, but all are prepared to help, three-quarters by providing financial support. About one-quarter say they will provide specifically for their children's education. In practice this must amount to almost the same thing in view of the number of people who state their offspring must be educated to achieve anything. A small number of our informants have no set ideas how they will help their children.

11. SUMMARY OF DESCRIPTION OF THE MANIFESTATIONS OF SOCIAL CLASS:

The foregoing discussion has been centred on the manifestations of social class. We have seen that the two classes tend to differ - the middle-class being better educated, better-off financially, with smaller families, and with closer rural links, than the working-class. Furthermore, the middle-class live in better furnished houses with more formally-arranged gardens. The recreational patterns of the two classes differ considerably. Middle-class people have more leisure-time interests, and follow more personal interests and recreational and cultural pursuits. Group-membership too, is a feature of middle-class rather than of working-class living. More middle-class than working-class people have ambitions for themselves, although there is no difference between the two classes with regard to aspirations for children.

12. PERCEPTION OF SOCIAL CLASS:

Kuper stated that in complex Western societies the awareness of class distinctions was likely to be confused and varied in expression unless it was given direction, form and clarity by social scientists, journalists or others who directed social thought¹). Even though class consciousness was implicit in the objective conditions of economic life, the number of classes and the manner of their differentiation required explicit formulation. In African society, the social distinctions between the educated and uneducated, Western and tribal, Christian and heathen were deeply rooted. But the process of giving a specifically Western type class mould to African social consciousness seemed to be recent and encouraged by the dominant White society.

Let us now examine the views of this group of informants.

Virtually all are aware there are marked differences among urban Africans. By far the greatest number dichotomise their society, saying it is composed of, for example, 'the rich and the poor', 'the educated and ignorant', 'the well-behaved and the ill-mannered'. Most people listed only one set of criteria for dichotomisation, but just under one-tenth listed two, and four people listed three sets. Less than one-twentieth of our sample although stating there were differences, did not rank people at all (these cited tribal differences), and 7% expressed the opinion that there was a three-step hierarchy. When making these judgements, almost half the sample used economic criteria. In view of the ease with which different economic standards may be observed, and remembering the indigence of our informants, this is hardly remarkable.

Almost one-fifth used ethical standards; slightly fewer education and social acceptability criteria; one-tenth emphasised environmental differences. There is a significant difference between the two classes in the criterion emphasised. Comparatively more middle-class people stress the importance of educational and environmental criteria, while economic criteria are recognised by over half of

1) Leo Kuper (1965): *An African Bourgeoisie*: Yale University Press, New Haven.

the working-class. People are not generally looked down on for lack of economic status. It is accepted that many people are poor. Misfortune is felt to be causative in some cases. Those who are critical say poverty is the outcome of laziness or the failure to make good use of one's resources. Similarly, possession of wealth is not regarded as something which confers the right to respect on its possessors. The general outlook is that some people are fortunate. Over one-tenth of our informants feel that hard work enables some people to attain riches. Only seven cite education as a means of achieving good economic status.

People who regard the differences as dependent upon differing ethical standards feel these are manifested because of family background or because of the moral standards, whether high or low, that people adhere to.

Educational criteria are very straightforwardly expressed. Some people are well-educated, others are not. A few recognise the fact that it may be a costly business to acquire education and demonstrate recognition of the interaction of various factors. They state 'the rich can become educated, the poor cannot get education'. Many of those who set criteria of social acceptability also recognise this interaction. They recognise that education and an economic standard enable certain people to appreciate and maintain higher standards of living than those who lack similar advantages.

It is realised that people live differently. The rich are stated to live comfortably and luxuriously and to eat well while the poor have to struggle to live. Those who live by high moral standards are respectable and bring their children up to be like themselves while the 'tsotsis' are a danger to others, and immoral people are a threat to society.

Education is seen to have distinct economic and occupational advantages. It enables one to have an easy or pleasant life and a better standard of living, while those who lack it always have to do the unpleasant ill-paid jobs. The effects of socially unacceptable behaviour are more clearly stated than those of acceptable behaviour. People of poor standards are viewed as having low values and of failing to care for themselves and their homes. Again it is mentioned that high social values, good income and superior education all re-inforce each other.

When the emphasis of the discussion was shifted from different types of people and the ways in which these differences manifested themselves in the way they lived, to differences in behaviour, another set of criteria became important. Nearly all our informants, though still dichotomising society, judged people either by socially acceptable behaviour or ethical criteria. The handful who based their assessment of differences in behaviour on educational criteria are of the middle-class, and the like number who use economic criteria are working-class.

When assessing their own position in the community, three-quarters of our informants used these same two criteria, socially acceptable behaviour and ethical standards. There is a significant difference between the classes, in the manner in which they place themselves. As many as one-fifth of the working-class view the matter from an economic standpoint, saying they are poor. More middle-class than working-class use the socially acceptable and ethical standards.

It is in this placement of themselves as well-behaved individuals or as people of high moral standards, that these people evidence their lack of actual class consciousness. Even among those who use socially acceptable behaviour as the criterion, only two middle-class people regard themselves as belonging to a 'socially advanced higher status group'. Our informants are not consciously aware of the members of a pace-setting group (composed of people of high status in the community) as members of a different, higher-ranking social class than that to which they themselves belong. People can be judged by the standards our subjects choose without reference to class. Yet class consciousness is emerging. I have discussed this question with African members of our staff both past and present, who are well aware of, and can formulate, concepts of

class differentiation. Mkele speaks and writes of the emergent African middle-class¹⁾. Kuper found class awareness among those he studied in Durban.

Why, then, this almost complete lack of class awareness among the people we have been discussing? I would attribute it to the defects of the sample which I pointed out in the beginning. If any conclusions can be drawn, (and in view of the smallness and lack of representativeness of the sample, they must be tentative), we can say that classes have developed in urban African society; that these are manifested by different living standards and ways of life; but that class consciousness, as such, is as yet restricted to the very few who have assimilated western thought to such an extent that they are able to perceive such patterns. For the rest, their thinking has not yet received the direction that is necessary. It is indeed confused and varied in expression.

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- 1) Nimrod Mkele, (1961): 'The African Middle Class', Public Lecture delivered under the auspices of Isma. Johannesburg.

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THE ADAPTATION OF RURAL-BORN FEMALE
DOMESTIC SERVANTS TO TOWN LIFE*

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1. INTRODUCTION:

African women coming to town for the first time find that the greatest contrasts with rural life lie in the impersonality of the social relations in the city, and in the tremendous cultural diversity and opportunity offered by an urban environment. This paper deals with the adaptation of rural-born women to these two fields. In studying the topic, three basic questions are involved: Firstly, which are the most meaningful of the social ties surrounding resident female African domestic servants? Secondly, how do these function in facilitating the integration, or, at least, the adaptation, of newcomers to town life? Thirdly, what are the long-term effects, both on the individual and on the African community at large, of the close and intimate contact which resident servants have with the families of their employers? This is particularly important in the majority of employment situations where the women work in the homes of Europeans, in the very heart of White South African culture. Can domestic service be seen as a tool or factor in the process of social change?

The answer to each question is sought through an analysis of the composition and functioning of the network of personal relations surrounding the individual. A good deal of use has been made recently, in studies of small urban or semi-urban communities, of this approach - the so-called 'social network technique'¹⁾ As a method of investigation it focusses initial attention, not on the overall structure of the community, but on the individual. The latter is seen as the centre of a network of social relations which link him with kin, friends and acquaintances. Logically he must be connected also with his total community or social field, since at the extremes of his personal network he is linked to individuals whom he does not know personally, but who are

1) See for instance - Barnes, J.A. (1954): 'Class and Committees in a Norwegian Island Parish': *Human Relations*: Vol. 7.; Bott, E. (1957): *Family and Social Networks*: Tavistock Publications, London; Mayer, P. (1961): *Townsmen and Tribesmen*, Oxford University Press, London.

* This paper is based upon a study made of domestic service in Durban. The project was financed by the National Council for Social Research, and it is to this body that I am indebted both for financial support and for permission to use material gained in the course of fieldwork. The conclusions drawn from the material, are personal, and do not reflect any opinions other than my own. Although the study included servants working for all racial groups, it is upon those in European employment that this paper is based. The sample included some 200 servants drawn from employment in three different residential areas of Durban.

known to his friends or acquaintances, or to contacts of these persons. It has, of course, been stressed that individuals linked in this way do not form a group. Not all are known to each other, and certainly need not have anything in common. The term 'network' is a particularly apt choice for this collectivity. Interest and analysis has been focussed largely on the *personal network* - that is, on those individuals linked directly with Ego. A wider view is obviously important however, if the community as a whole is to be studied.

All individuals in a person's personal network do not share the same frequency of contact with him, nor are their relations with him of the same intensity. On the basis of these two factors Epstein¹⁾, for instance, has differentiated between the so-called 'effective network' and the 'extended network'. The former is made up of individuals with whom Ego has the majority, and the most important, of his contacts. Most members of the effective network tend therefore, to know each other, and in this respect they resemble a group rather than a mere collectivity. Beyond the limits of the effective network, each individual is linked by ties of lesser intensity to the rest of his friends and acquaintances, and eventually to the whole of the community in which he moves. The term extended network is applied to this wide-flung unit.

In the first part of this paper I will be concerned with analysing the make-up of the effective networks of resident domestic servants. This is crucial since these are the persons with whom the individual has the majority of his or her contacts, and it may be expected to be they who play a predominant part in the moulding of his or her values, ideas and ambitions. Epstein has stressed the role of the effective network in social control. Members discuss each other's actions - they gossip in fact, and so bring the pressure of their combined opinions to bear on the individual to conform to their standards. The implications of this function of the effective network will be considered in the last part of the paper along with Epstein's suggestion of the part played by both the effective and extended sections of individuals' networks in social change.

2. THE COMPOSITION OF THE EFFECTIVE NETWORKS OF RESIDENT DOMESTIC SERVANTS:

An analysis of the effective networks of resident domestic servants showed three main features:

Firstly, there was an overall predominance of ties based on kinship²⁾. Contacts of long standing were, in particular, with kin and in most cases the core of the effective network was made up of a group of kinswomen and kinsmen. In contrast to this, ties with non-kin (with the possible exception of those with lovers), were of fairly recent standing. The average duration was between one and five years only. The composition of the typical effective network was

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- 1) Epstein, A. L. (1961): 'The Network and Urban Social Organisation': *Rhodes-Livingstone Journal*: Vol. 23.
 - 2) In 40% of the cases women could name more kin whom they had seen during the past year, or whom they regarded as being important to them, than they could non-kin. Furthermore, in 50% of the cases, at least half of the regular meaningful contacts were with kin. In order to build up this picture, servants were asked to keep records of all meetings which they had with outsiders. All those which were planned rather than by chance were taken to be 'meaningful', and thus the people they involved were listed as potential members of the effective network.

thus constantly changing. Although the kin core remained firm, these members were joined for longer or shorter periods by a kaleidoscope of non-kin.

Secondly, there were non-kin ties which had built up on a restricted basis. In all cases investigated the majority of friendships were with neighbouring servants, or with servants with whom the women had once worked. Even ties with non-servants tended to be developed as a result of the work situation. Many of the relationships with males, for instance, were established when the latter visited the places of employment of the servants in pursuit of their duties as messengers and deliverymen. In only a minority of cases were friends recruited to the networks of the women via, for instance, common membership of associations such as churches and clubs.

Thirdly, the effective networks of the servants were typically small in size.

I will discuss each of these features in detail, and offer tentative explanations in each case:

(i) The Predominance of Ties Based on Kinship and the Transitory Nature of Non-kin Ties:

Living as they do on the premises of employers, and so in residential areas set aside for the occupation of racial groups other than their own, resident domestic servants are effectively isolated from the hub of African community life. This is now centred largely in the townships. The geographical separation of these areas¹⁾ from the White residential suburbs makes it difficult for resident servants, the nature of whose employment leaves them little free time, to visit the townships frequently. They have, in fact, little opportunity, except on their 'off-days', of leaving even the immediate neighbourhood of their employment itself. This isolation might be expected to force or incline the servants towards forming many and enduring friendships with other servants working in the same areas as themselves. While friendship with neighbours do occur there are factors which continually mitigate against their number and longevity.

The most obvious factor is the heterogeneity of the domestic servant community. Seldom do women approve of all or nearly all of their neighbours. One of the characteristics of all neighbourhoods studied was the development of a number of distinctive cliques based on common outlook. The members of these kept themselves aloof from the rest of the neighbourhood servants of whom they disapproved. It is unlikely, therefore, that any servant will find herself wishing to develop close friendships with more than a handful of her neighbours. Apart from this, however, the continual flux and movement within the ranks of servants is not conducive to long-lasting friendships. Servants change their jobs, employers leave their homes and even servants who remain in one neighbourhood for years find that their neighbours change fairly frequently. Once a woman has left a particular suburb she finds difficulty in returning to visit it. It is not only the factor of time, but also the expense incurred by bus or taxi fares which prohibit frequent returns. Women who, when working nearby, visited each other every day soon lose touch if one changes her job and moves away. Each fades into the background of the other's thoughts and lives, and, as it were, moves from the effective network of the other to the outer regions of her extended network!²⁾

Only friendships which have an additional dimension are enduring. Thus, if women continue, after the one leaves the neighbourhood, to attend church together, their contact may be continued for a while. This appears to occur seldom since

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- 1) In Durban two of the largest townships, Kwa Mashu and Umlazi, are as far as 8 and 15 miles respectively from town.
 - 2) Should they once again work near each other, they will naturally take up the threads of the friendship once more.

church attendance may be just as local as employment, and servants cease to belong to particular sects or congregations if they leave neighbourhoods in which these are centred. Essentially, it is only kin-ties which are sufficiently strong to survive continual separation and to warrant frequent visits in the face of all difficulties. This is because the kin link is not dependent on the mere chance of proximity but on ties founded firmly in lineage or affinity.

A practice which tends to increase the size of the kin core of the effective network, is that of established servants finding work in town for younger kinswomen. The latter are regarded as under the control of the older women. For some time, at least, they are thus constant visitors with obligations to contact each other despite distance.

Usually kinswomen are drawn together also by a shared interest in a common home - a link of peculiar strength amongst African resident domestics. The lives of these women are dogged by insecurity. One of their greatest problems is that of accommodation. Although this is, for the most part, provided on the premises of their employers, they can hardly regard it as permanent and secure. A loss of job sees them on the street. Few servants can afford to rent houses or rooms in the townships and even those who desire to do this have to face great practical difficulties¹⁾. For most women the only alternative is to regard their rural homes as their security. They must, therefore, keep up their ties with parents, or if they are dead, with siblings or other kin. Since influx control for women has been instituted in Durban, this tendency to view the rural home as important, has been increased. These factors promote the tendency to value kin highly and to seek them out when in town despite problems of distance and isolation.

These factors would appear to explain to some degree emphasis on kin in the social relations of resident servants. There are, however, other factors involved, probably the most important of which is the paucity of alternative ways in which individuals are recruited to the servant's social circles.

(ii) Restricted Nature of Non-Kin Contacts:

The predominance of kin-ties observed in the personal networks of domestic servants is certainly not in keeping with the general trend of social relations amongst Africans in other urban areas in this country. Studies made of migrants to both Cape Town²⁾ and East London³⁾, and of townspeople in Lange⁴⁾, have suggested that ties based on kinship are tending to give way to those based on common interest, home background or even social class. Certainly membership of associations were found to provide far more vital and functional ties with other township dwellers than did kinship ties.

The domestic servants investigated had relatively few ties gained through membership of clubs and societies, and formal associations as such played little part in their lives. Only 10% at the most belonged to associations. Although over 90% were nominal Christians only 7% attended church regularly. Of these, nearly all belonged also to women's groups or choirs, but their attendance at those meetings held during weekdays and in the evenings were spasmodic. Some

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- 1) Homes in the townships are not allocated to single women except under peculiar circumstances. Since the majority of domestic servants (over 80% of the sample investigated) have no permanent male support, they cannot hope to get a house until a son is old enough to be a registered work-seeker. Even where this condition is fulfilled the waiting list for houses is long and many other families are given priority on the basis of their long settlement in Durban.
 - 2) Wilson, M. & A. Mafeje, (1963): *Langa*: Oxford University Press.
 - 3) Mayer, P. (1961): *op. cit.*
 - 4) Wilson, M. & A. Mafeje, (1963): *op. cit.*

3% of the younger servants belonged to choir groups unattached to churches, but once again their attendance at meetings was not regular. Finally, about 4% had belonged to burial societies, but most appeared to prefer life insurance schemes to actual membership of the flourishing township associations of this nature.

How can this relative lack of interest by domestic servants in associations, and thus of ties based on club membership, be explained? The framework of their employment must be taken into consideration. The long hours worked by resident servants, and their isolation in the suburbs of their employers, make regular attendance at club meetings difficult. Gatherings held in the afternoons cannot be attended by servants unless they can arrange for their 'days off' to coincide with the weekly meetings of the association. Meetings held in the evenings are even more inconvenient since few servants finish work before 7.30 or 8 o'clock. If they must still change and catch buses they are unlikely to arrive in time for the meeting. The further out of town the woman works, the more difficult it is to attend gatherings held in town, and where, as is now the case, all African clubs are being encouraged to meet in the townships, resident domestics cannot hope to attend regularly. Club membership is in itself time-consuming. Those servants who did attend religious and choir groups all complained of little time left for personal affairs, for instance, for shopping or visiting kin. Another aspect of the problem is economic. Continual travelling on buses is expensive and servants can seldom afford more than one trip to town or the townships per week.

The physical barriers to association membership can, however, be overstressed. An important factor in the lack of interest shown in these groups by resident servants is, I suggest, the peculiar circumstances of their employment. Many of the needs which these associations serve in the townships are dealt with by the employers of resident servants. For instance, one of the most important sidelines of many church societies and associations is mutual aid. Resident servants are usually helped by their employers in situations of crisis. In distress, caused by illness, death, and so forth, they are not alone. In particular servants who have been employed for long periods can rely on some assistance, both emotional and financial, from their employers. Their need for associations is thus far less than is the case with Africans who must provide by themselves for all the exigencies of life. Similarly the well-known 'home-boy groups' which provide accommodation for male migrants would be irrelevant in the situation facing resident domestic servants where accommodation is provided with the job.

Another important function of associations, and of home-boy groups in particular, is that of providing opportunities for conviviality, warmth and friendship amid the impersonality of the city. In the case of resident servants the place where this is needed is in the neighbourhood within which they work. The cliques already mentioned provided for all these functions. Though based largely on common interest, I do not feel that these units should be given the status of associations. Their membership tended to be small, local and fleeting. A number of neighbouring servants, perhaps three or four, might, over a period of time, be drawn together by an interest in, for instance, religion or even knitting. The link between such women was one of common outlook and value rather than an interest in pursuing a particular end. They merely preferred each other's company to that of the rest of the servants in the area. If one woman left her job however, she soon drifted away from the others. In certain cases these cliques did serve as the basis for what may be termed 'planned saving'. The women might all agree to give a portion of their wage each month to a particular woman. In this way, once every three or four months, the servants could expect to receive a lump sum which they used to finance some expensive undertaking or purchase. This plan was never, however, formalised and the handing over of money was not accompanied by a meeting or entertainment as has been described for the so-called 'stokfel' groups which have similar functions. In fact, such arrangements seldom lasted long and broke up when members left the area. In at least half of the cases encountered, kin ties also linked women united in this way. This is not surprising since it was not unknown for women to abscond after they had received the 'kitty', and so leave the rest out of pocket. Ties of kinship mitigated against this as the remaining women might be expected to bring pressure to bear

on the kin of the defaulter to reimburse them!

It is clear therefore, that the ties which resident servants have with their neighbours and with their employers serve many of the functions which associations have been noted to fulfil amongst other African town-dwellers.

I would like to stress once more the importance of the employers in the lives of the servants. While on a personal level, the majority of resident servants' ties are with kin and neighbours, their relations with their employers are often informal and crucial. This is, of course, in contrast to the position of most African workers in this country who have but fleeting and formal relations with overseers and employers. Although clearly of a different social status to their servants, employers should, I suggest, be thought of as forming, if not part of their servants' effective networks, then at least an important and influential section of their extended networks. I will return to this point later.

(iii) The Size of the Effective Network:

The average number of persons involved in what may be arbitrarily defined as the effective network of the servants was between four and eight. The limits on this 'group' are obvious - the geographical and social isolation of servants in the White residential areas.

This supposition is backed up by the fact that non-resident servants and township women not employed in town tended to have effective networks ranging between 12 and 20.

This is not to suggest that the overall size of the *personal* (as opposed to the effective) networks of resident servants are any smaller than those of the average urban dwellers. The servants' continual changes of employment and consequently changes of abode, may even be conducive to their building up personal networks larger than those characteristic of non-servants. Although I have not investigated this point in detail, servants who had made frequent changes of employment could always name a large number of persons whom they would greet as friends, but whom they did not regard as close to them.

3. ADJUSTMENT TO THE IMPERSONALITY OF URBAN LIFE:

It is unlikely that the female migrant will know more than a handful of the Africans with whom she comes into contact when first in town. This is in contrast to the position in the rural areas where individuals know most, if not all the people they meet in the course of their daily round. Even those whom they encounter for the first time are usually well-known to them by repute, and strangers to the area can be fitted into some convenient niche on an expanding and all pervasive structure. The newcomer to town is faced by a mass of unknown persons and has no idea of how to treat them nor what, if anything, can be expected of them. It may be argued that anyone entering a new community is in this position. The difference is that in a small homogeneous community the structure can easily be divined and so relations organised. In a large, complex and heterogeneous city this is not so quickly and easily done, and the urban milieu appears to defeat all efforts to encompass it within a single frame. It is pertinent to ask, therefore, how newcomers to town organise their relations with others and how they make contact in town and with whom?

In the light of what has already been said the answer to this question in the case of resident domestic servants is not unexpected - kinship. This may seem almost an anti-climax to social anthropologists who are used to the primary part played by this principle in the organisation of small homogeneous societies. The important point is that in town kinship does not operate in the same way, nor does it serve the ends which it does in the country. The basic ties of blood and affinity are, in fact, interpreted differently in town and used to fulfil needs peculiar to the present urban structure.

(i) Close Kinship Ties as a Basis
for Security in an Alien World:

In the first place ties of immediate kinship serve women as a basis for security in an alien world. The obligations of close kinship are universally recognised. When asked, women remarked that they could not fail to give help to a close kinswoman even if it was at their own expense. This tie overrides personal dislikes and disapproval and its claims must be honoured¹⁾.

Probably the most striking and important use to which ties of close kinship were put amongst the women investigated, was to facilitate the entry of newcomers to town - 63% of the sample had come to Durban via, or specifically to join, kin already there. Another 12%, though they had had no prior arrangement with town-dwelling kin, had known of their existence and had sought their aid in finding jobs, and usually also in providing shelter until this was done. In all, thus, approximately 75%²⁾, were introduced into the urban milieu by kinsmen.

This is in contrast to the position as it has been described amongst the majority of male migrants, where it is the 'home-boy' group³⁾ which welcomes newcomers and which provides them with shelter and help in the finding of a job. Domestic servants, and probably women generally, do not form these groups or use the principle of home ties in their organisation. One of the reasons for this is that women cannot live together in large groups. There is only one African Women's Hostel and this houses only 564 single women permanently. Women must find separate and individual lodging or else be accommodated on the premises of employers. The chances in any case of meeting 'home-girls' who are not also kin are more slender for women than for men. Far fewer women come to town from the rural areas than do men. There appears, in fact to be some aversion to meeting 'home-girls' since they often spread tales of country doings which the servants have been at pains to keep hidden from their city friends! Kin can usually be counted upon to be on the side of the individual and will not, in any case, spread malicious rumours about their own relatives. While women are always pleased to meet 'home-boys' or 'girls' and a woman would visit a group of 'home-boys', they themselves never used this tie to any effect. Even on an informal basis 'home-girls' seldom find jobs for each other as do kin.

Apart from the help expected of and given by close kin, newcomers to town were found to use their ties of *wider* kinship in two important and related aspects. Firstly, to categorise strangers, that is, to place them in some way and so organise behaviour towards them; and secondly, in order to provide a broad base for possible future co-operation.

(ii) Kinship Functions as a Means
of Ordering Social Relations:

Mitchell⁴⁾ has shown that in the multi-tribe situation of the Copperbelt, tribalism takes on a function and meaning quite different from that which characterises it in the rural areas. In towns it serves to categorise

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- 1) Where women investigated did not agree with the actions or interests of close kinswomen or of the manner of life they were leading, they never withdrew completely from the latter's society as they might in the case of mere acquaintances. Instead, they tried repeatedly to make their kinswomen change their ways. If either were in need, the other would assist her, and despite differences in values and outlook, were frequently to be found visiting each other.
 - 2) In the case of the remainder, 9% of the total came with friends, to join the latter's kin, while only 4% came with employers from the country. Only 2% of the women came to Durban with no prior linkage and with no prospects of a job.
 - 3) Wilson and Mafeje (1963): *op. cit.*
 - 4) Mitchell, J.C. (1957): 'The Kalela Dance': *Rhodes-Livingstone Paper*: 27, Lusaka.

people - to 'place' them vis-a-vis the individual. Each tribe or tribal group has a stereotype. When strangers meet, they immediately characterise each other in terms of tribal affiliation and tribal stereotype. On this basis they know, therefore, how to act towards each other¹⁾. Thus, in urban areas where there is a continual movement of people and new faces are encountered each day, tribalism provides a means of ordering social relations, and acts as a guide to behaviour.

In Durban individuals also meet strangers all the time, but there is no such multi-tribe atmosphere. Eighty-six percent of the total male population is estimated to be Zulu, while the majority of the remainder are Xhosa. Tribalism in Mitchell's sense is of little help in deciding how to treat the majority of the strangers met each day. In its place, however, it is suggested that kinship, or what should perhaps be referred to as clanship, is one of the factors which serve in the same way to categorise and 'place' strangers. This is possible because the area from which the Durban domestic servants come is fairly restricted - 200 miles radius at the most. The main Zulu clans and clan groupings are well-known to most people. Continual mixing with new faces in town, together with the influence of radios, newspapers and magazines have widened the horizon of the average town-dweller considerably. Also the amazingly long and varied journey to and from work, have taught both men and women about areas and people, of whose existence the parochial rural dweller has little idea. The clan affiliations of famous persons of past and present are also well-known. All these factors widen the web of knowledge which is far flung, and this web serves as a basis for categorising each stranger who is met, and of placing him via his lineage affiliation.

Individuals can claim ties with a wide variety of clans. Apart from that into which they were born, they have claims, for instance, with those of their mother and even those of their grandmothers on both sides. In addition to this, various clans were traditionally linked together, and these ties now provide also the basis for co-operation between individuals from each. Thus personal clanship not only categorises people, but provides a fairly wide umbrella under which many of the strangers met in town may be linked to the individual by ties of wider kinship or clanship.

This is not to suggest that these bonds necessarily involve women in any more than fleeting contacts and the use of kinship terminology when they find themselves with kin. It can, however, form the basis of later close co-operation and friendship. Herein lies a second and a crucial function of this type of kinship for women new to town.

(iii) Wider Kinship Ties as a Basis for Co-operation:

Where strangers are thrown together and find themselves to be kin, they are immediately drawn together. This was clearly demonstrated in cases where new servants moved into neighbourhoods. While the other women might ignore the newcomer, an established servant of the same clan might soon visit her and so introduce her to the neighbourhood at large. The two women would not necessarily remain close friends. Often their interests and outlook differed and they found they had little in common. They would then drift apart, but by this time the newcomer had become established in the area. She had usually come into contact with women more to her taste. It was with them that she might develop deeper friendships.

So it is the kinship link which initially facilitates the newcomer's entry into the community. In cases where interests coincided, the wider kin link provides an extra tie between potential friends. In the case, thus, of women coming to town for the first time, and in particular for prospective domestic servants, the ties of closer and wider kinship may be crucial in the adaptation to town life. In the absence of ties based on association, it is these which lay the foundation

- 1) Rules of behaviour between persons of different tribes are based on their relationship before the coming of the British, and also in some cases, on joking relationships between tribes.

for co-operation in the impersonal and unknown environment of the city.

4. THE NETWORK AND SOCIAL CHANGE:

Another problem which I wish to consider briefly is the cultural adaptation of domestic servants to the tremendous opportunities of urban life. While all newcomers to town are faced with a galaxy of new artifacts and customs, domestic servants are in a unique position in that they alone work and live in close and personal contact with Europeans. If any section of the African community is to be affected by its contact with Western life, surely it should be these servants who not only observe European culture from the outside, but also, as it were, 'live' it from the inside. They are in the unique position of being presented not only with a wide variety of the instruments of Western culture, but also with a close-up view of its behaviour patterns and norms.

Though the *potential* for change would appear to be limitless, change is certainly not the inevitable result. I suggest that it is unlikely that any *fundamental* change will occur in the values and outlook of African women servants, despite the length of time they spend in the service of Europeans. The proof of this assertion and its explanation are to be found in the functioning of the personal network of relations surrounding the individual and, in particular, in the operation of the effective network. It is the latter which appears to act as a filter in the acceptance or rejection of the opportunities for change offered by the domestic service situation.

(i) The Operation of the Effective Network as a Filter of the Influence on Domestic Service:

This process is part of the general functioning of the effective network in social control. The gossip which controls actions of the members of this 'group' concerns not only their activities, but in this case also those of their employers. In this way servants and their non-kin fellows gain an overall picture of the behaviour of certain sections of the White community. The actions of the latter are discussed and *commented* on at length. It is this comment which is crucial. If it is positive, the likelihood is strong that the observations of the servants will provide a blue-print for the future behaviour patterns of the whole effective network. If it is negative this is unlikely to occur. Furthermore, any individual member showing signs of adopting the new ways will be teased and ridiculed out of this behaviour. In such cases the opportunities for change offered by the domestic service situation are ignored, and its influence on workers and their fellows is *nil*.

What, it may be asked, makes for the climate of opinion within the effective network? The analysis of its composition gives us the clue.

It will be remembered that the constant core of the effective networks of servants tended to be made up of kin. The remainder, in its turn, would be selected from neighbouring servants largely on the basis of common outlook. Thus, effective networks as a whole had a tendency to reflect the outlook and aspirations with which the women had been reared. In cases where servants hail from western-orientated homes, the whole outlook and operation of their effective network is therefore likely to be towards accepting western norms and behaviour patterns. Such women respond whole-heartedly to the opportunities offered by their period of employment. On the other hand, women who come from traditional homes may work for years in the homes of Whites, but because of the recruitment and limiting function of their networks, carry over little if anything, of this experience to their private lives.

The effective networks of women from traditional homes may be seen as operating to 'encapsulate'¹⁾ them in the same way as home-boy groups do for countrymen. What is particularly significant is the fact that the influence of the

1) A term coined by Mayer (1961): *op. cit.*, for the effect of the 'Red' *Abakaya* or home-boy groups in preventing their members from being influenced by working in town and mixing with non-Reds in the work situation.

effective network, despite its lack of corporateness, is strong enough to create a barrier between its members and westernisation. Traditionally-orientated servants may work amongst neighbours who do not share their outlook, yet their ties with kin are strong enough to force them to shun, or not desire, contacts with persons open to change. It must be remembered also that this isolation is helped by the fact that the more progressively minded women tend in their turn to avoid relationships with neighbouring servants whom they categorise as the equivalent of country bumpkins.

It is thus not the domestic service situation itself which influences workers but factors completely external to it - the home background and social ties of the women concerned. It is the latter which influences the *fundamentals* of the servants' outlook. Domestic service merely provides a model and training for sophistication for those women who come to town eager to absorb western culture.

Although I have stressed the inhibiting functions of the effective networks of individual resident servants, I do not wish to give the impression that domestic service must be discounted as a factor in social change generally. It is only in a minority of cases that the network operates in this way. In the sample of servants under discussion only 9% came from traditionally-orientated homes and thus could be expected to be affected only minimally by their years of work in White homes. The overwhelming majority were, in fact, open to change and made use of their experience to become highly proficient in western ways¹).

(ii) The Personal Network and General Social Change:

Epstein²) has suggested that it is within the effective networks of the elite sections of any community that the process of social change is initiated. New ideas and norms are mulled over, accepted or rejected by this core. Any new traits which are accepted are, after a while, passed out of the effective networks of the elite to the rest of the community via the links in their extended networks. The elite must continuously be developing new behaviour patterns in order to differentiate themselves from the mass of the community and so maintain their superordinate position. This general model may be used as the foundation for an attempt to explain the overall influence which domestic service has on the African community.

As already pointed out that the White employers of western-orientated servants serve as a model for the actions and behaviour patterns of the latter. Despite the inequality of the master/servant relationship, the informal and intimate nature of domestic service suggests that employers should be seen as forming part of the personal networks of their servants. Though the racial and caste-like structure of South African society, and of the master/servant relationship itself, preclude their forming part of the effective network, employers certainly make up a vital section of the extended network of their servants. It is via this contact that the influence of domestic service can be seen to operate.

Individual servants observe the actions, attitudes and preferences of their employers. These norms are operating within the effective networks of the latter, who constitute an elite reference group for domestic servants. The

1) It may be mentioned in passing that this is probably not the case with male servants. Although I have no figures in respect of the number of traditionalists as opposed to Christians in domestic work, I have the impression that the former predominate, especially amongst older men who have worked in town for many years. In this case the inhibitive function of the effective network might be expected to operate on a larger scale.

2) Epstein, (1961): *op. cit.*

norms are discussed by the members of the effective networks of the servants, possibly re-interpreted, but used basically as a model for their future behaviour. Once these patterns are established, they in turn tend to percolate down through the western-oriented sections of the African community, via the widespread links of the extended networks of the servants and their kin.

The small size of the typical effective network of female resident servants might be thought to set limits to the number of people affected by changes within it. This is not the case, since, as was pointed out, it is only this section of the network which is restricted in size. The total number of contacts in the *total personal* network of these women is likely to be very large due to the women's constant changes of address. The effects of their contact with western life in the domestic service situation may, therefore, be spread widely and have a great influence on the general pattern of social change observable in the culture contact situation of today.

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FUNCTIONS OF RELIGIOUS INSTITUTIONS IN THE
ADJUSTMENT OF AFRICAN WOMEN TO LIFE IN A RHODESIA TOWNSHIP

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Social scientists have given increasing attention in recent years to the functions of voluntary associations as adaptive mechanisms in the adjustment of Africans to urban life. Wilson and Mafeje¹⁾ characterised them as 'a school of civilization'. Little²⁾ emphasised their utility for the rural migrant in facilitating role segmentation; in adjustment to his fresh status as a townsman; in establishment and validation of fresh norms; and in the exercise of control over the personal conduct of group members.

Churches have been found in most African urban surveys to be the dominant type of voluntary association both in size of membership and in influence. In contrast to societies in which members are 'born into' a religious group, most Africans in town make a definite choice whether or not to join or participate.

How do religious institutions assist Africans in adjustment to urban life? This paper is an attempt to examine further this problem by relating field material collected in the Sakubva township of Umtali in Rhodesia³⁾ to existing theory. Its focus will be upon the largest church associations within the township - the women's groups or *rwadzano*⁴⁾. Data collected in 1966 through interviews with a 5% random cluster sample of Sakubva's adult population⁵⁾, have been supplemented with later case studies of church women's groups and their members.

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- 1) Wilson, M. & A. Mafeje (1963): *Langa : A Study of Social Groups in an African Township*: Oxford University Press, Cape Town, p. 179.
 - 2) Little, K. (1966): *West African Urbanization : A Study of Voluntary Associations in Social Change*: Cambridge University Press, pp. 101-2.
 - 3) Umtali, Rhodesia's third largest town, has an estimated (1968) population of 9,300 Europeans, 1,000 Asians and Coloureds, and 41,000 Africans. About 28,500 of the latter live in the municipal township of Sakubva about 2 - 5 miles from the town centre.
 - 4) The Rhodesia equivalent of the South African *manyano* described by Brandel-Syrier, M. (1962): *Black Women in Search of God*: Lutterworth Press, London.
 - 5) Thomas, N.E. (1968): *Christianity, Politics and the Manyika: A Study of the Influence of Religious Attitudes and Loyalties on Political Values and Activities of Africans in Rhodesia*: Unpublished Ph.D. Dissertation, Boston University.

1. RELIGION IN AN URBAN TOWNSHIP:

Christian churches in their more than seventy years of labour in Manicaland, (the eastern province of Rhodesia of which Umtali is the administrative centre), have secured at least a nominal identification with Christianity from almost the entire population. Utilising, however, the index of a minimum church attendance of 2+ times during the preceding year to denote religious affiliation, the following profile for Sakubva township adults was obtained: Roman Catholic (16.2%); Anglican (22.3%); Methodist (21.6%); other 'older Protestant' (11.2%); African independent (4.8%); and non-church (23.9%)¹.

Religious commitment in Sakubva is popularly measured by the extent of one's group involvement. This includes participation in the prescribed rituals of the church. In addition most churches have separate organisations catering for children and young people as well as adult men and women. The seven African independent churches of the Apostolic (or Zionist) type are an exception, having no separate groupings by age or sex.

Sakubva women have been attracted to church women's associations to a degree unparalleled by findings in other African towns. Over half (51.6%) of those sixteen years of age and above reported participation in church women's and youth groups, compared with 12.9% in sports clubs, 5.6% in political groups, and 8.5% in other voluntary associations².

The *ruwadzano*s developed in Manicaland during the last thirty years out of a desire by women for an intensity of religious experience, of fellowship, and of moral discipline. Membership in each group is confined to women of a particular denomination. Late arrivals among the seventeen 'older Protestant' churches now at work in Sakubva began their women's groups concurrently with the launching of their new congregations. Two independent churches of the Separatist (or Ethiopian) type imitate the structure of their parent bodies in having *ruwadzano*s. Although *ruwadzano* ('fellowship') is the most common designation among Africans in Sakubva, for such groups, some churches use the same title for both their African and White women's associations (e.g. Scapular Confraternity - R.C.; Mothers' Union - Anglican, and Home League - Salvation Army).

Ruwadzano members are expected to excel in loyalty and devotion to the church. While attending regular church meetings for worship, instruction, and fellowship, they often express their greatest intensity of religious feelings while attending in uniform the weekly *ruwadzano* meeting. There the patterns of the prayer and preaching closely parallel those described by Brandel-Syrier³) of the *manyano*s in South Africa. Smaller sub-groupings are made of members on other days for the purpose of visiting the hospitals, and the sick, aged, newcomers, and backsliders in their homes.

How are we to interpret the success of *ruwadzano* groups in Sakubva in securing participation by more than half of the women of the township? We would suggest two hypotheses: Firstly, that social conditions exist which favour the

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- 1) Those in the non-church category were further sub-divided according to attitudes toward traditional religious beliefs and rituals into: Traditional Religionists (16.6% of total), and Secularists (7.3%). As there is a considerable retention of traditional beliefs and rituals by professing Christians, however, the lines of cleavage between church and non-church categories cannot be drawn sharply. (Thomas (1968): op. cit. pp. 152-167).
 - 2) The corresponding profile for men was: sports (29.7%), political (19.5%), church association (16.3%), and other (6.5%).
 - 3) Brandel-Syrier (1962): op. cit.

growth of such associations; and secondly, that the *rwadzanos* function to meet social needs of women for sociability, status, security, and approval. Let us examine each of these in greater detail.

2. THE SOCIAL SETTING:

The entire African population of Sakubva township has become increasingly stabilised in family units as a result of the African Administration's policies in housing and social welfare. With the single exception of a multi-storey hostel for men, all types of Sakubva housing are occupied today by persons living officially or unofficially as families. Almost all housing is of detached or semi-detached cottages for married families, or of older single-storey blocks of two and four units readily convertible for use by either families or single persons. As additional married accommodation was built between 1959 and 1966 the percentage of women in the adult population increased from 37% to 47%. By 1966 the average Sakubva family included parents who had been resident in town for six to ten years and five children living with them.

Although all Sakubva accommodation is occupied on leasehold it is preferred by many persons over the home-ownership schemes in two smaller government townships. Among reasons cited were proximity to employment and the town centre, adequate provision of recreational and welfare facilities and services, low rentals, physical proximity to those of one's effective social network, and the strength of voluntary associations.

Another social factor contributing to the strength of church women's groups is the relative weakness of alternative types of voluntary association. No single large-scale organisation exists to give a common framework of behaviour such as the mines provide in certain Zambian communities. Labour unions are weak. Overt political activity by Africans virtually ceased in 1964 with the banning of the nationalist political groups and curtailment of political meetings. No significant tribal associations exist since the tribal situation is more or less homogeneous. Functions of mutual aid are performed sufficiently through informal kinship groupings or by church associations, so that no separate associations for this purpose have arisen. Small educational and cultural associations do exist largely under White leadership, (homecraft and Red Cross clubs and the African Affairs Association), but these appeal only to the educated few. Only two types of associations, therefore, can claim a mass appeal in Sakubva - the more than thirty-five sports clubs primarily for the young, and the church associations.

A second explanation of the strength of the Sakubva *rwadzano* groups is that they function to fulfil commonly-recognised social needs of women in their adjustment to urban life. Four such needs can be readily isolated, utilising the typologies of Hsu¹⁾ and Parsons and Shils²⁾ - sociability, status, security, and approval³⁾.

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- 1) Hsu, F. (1963): *Clan, Caste and Club*: van Nostrand, Princeton.
 - 2) Parsons, T. & E. Shils (eds.) (1951): *Toward a General Theory of Action*: Harvard University Press, Cambridge, Mass.
 - 3) The 'basic social needs' of sociability, status and security as defined by Hsu (1963): *op. cit.* p. 152, correspond closely to the fourfold typology of 'need dispositions' of Parsons and Shils (1951): *op. cit.*, p. 249, with one exception. Hsu subsumes under 'security' both the material support which individuals give to each other ('segmental gratification' in Parsons and Shils), and the moral support which comes through reciprocity with respect to value standards ('approval' in Parsons and Shils).

3. SOCIABILITY:

Sociability is the need-disposition for a relationship with others characterised by friendliness, affability, and companionship. This need is often inadequately met during a woman migrant's early residence in Sakubva. She has left at least temporarily her rural homeland with its well established network of family and neighbourhood friendships. As only 7.4% of Sakubva women are employed, she will probably lack the opportunity for developing new friendships at work which most men enjoy. She may be hesitant to enter the predominantly 'man's world' of the neighbourhood beerhall. Probably she will be living with the one she calls her 'husband' and his relatives - persons with whom her relationship may be characterised more by dependence than companionship¹). With freedom to select friends on the basis of common interests, she may turn to a *rwadzano* to find them.

Initially kinship links, both cognate and affinal, may provide women migrants with means of entry into the town *rwadzanos*. Consider, for example, the case of Mrs. A. (aged 20). She had been an active member of the church and its youth fellowship at her rural home until disciplined for a pre-marital pregnancy. Her 'husband', although formerly of her church, resisted her first attempts to attend the town congregation. During her first nine months in town, however, she formed a close-knit network with two kinswomen - an older sister and cousin - both of whom were active members of the urban congregation and *rwadzano* of her church. With their support Mrs. A. transferred her membership to the urban congregation in her ninth month of urban residence and began to attend its multiple activities including *rwadzano* meetings. Her continuing interest can be predicted as a result of the coalescing of kinship, social network, and church ties.

The *rwadzanos* provided for many peasant visitors or migrants simultaneous reference groups in both town and rural homeland. Membership in a rural *rwadzano* provides a mechanism for immediate admission into urban society through the church association there. Conversely the urban *rwadzano* member who returns to the rural homelands to visit or work the fields will carry her uniform and be accepted as a full participant in the *rwadzano* of the village church of her denomination. In both she will feel at home. This is important inasmuch as half of Sakubva's adult population come from home districts within a fifty mile radius of Umtali, and three-fourths from within one-hundred miles. Most families have maintained close links with their rural homelands. The majority report making three to ten home visits per year, including an equal proportion of that 19% of the adult population who have lived solely in town since the age of fifteen.

A preliminary analysis of social networks of *rwadzano* members in Sakubva suggests that church groups facilitate the formation of urban friendships beyond kinship or home area links. As most denominations have rural congregations in several different provinces and districts, their urban congregations bring together people from various home districts. As the tribal situation of Sakubva residents is largely homogeneous, those social cleavages along tribal or home district lines which may be readily observed in the *rwadzanos* in Salisbury or Bulawayo are non-existent or covert within Umtali groups.

With continued residence in Sakubva a woman may develop relationships with other members of her *rwadzano* which, in their conviviality and mutual support, equal those customary among rural kinsmen and neighbours. Consider the case of Mrs. B. (aged 40). She has lived in Sakubva for twenty years, during which she has continued as an active town member of the denomination of her rural homeland

1) Holleman supports this view with additional Rhodesia data. See Holleman, J.F. (1958): 'The Changing Roles of African Women': in P. Smith (ed.): *Africa in Transition*: Max Reinhardt, London, pp. 71 - 78.

and of its *rwadzano*. Her husband shares her church interest. Of the eight women of her effective network with whom she interacts at least five times per week, seven are members of her *rwadzano*. Many Sakubva women active in voluntary associations report that those with whom they increasingly interact intensely and regularly are those who share common interests through an association.

Epstein¹⁾, Mitchell²⁾, and Mayer³⁾ have shown the importance of the network of social ties in the adjustment of Africans to urban life. Social 'atomization' is effectively prevented where bonds with one's own tribesmen are maintained and new friendships are formed on the basis of common interests. Adjustment is often maximised through the cross-linking of kinsmen, home-district, and associational ties. In Sakubva township the *rwadzanos* as the largest voluntary associations for women play an important function in this process.

4. STATUS:

A second social need met by the church *rwadzanos* is that of status, which has been defined by Hsu⁴⁾ as 'the rank or position occupied by an individual in his group or groups, with specific attitudes, duties, and privileges between him and his fellow men who acknowledge his rank or position'.

The status of a *rwadzano* member is one desired and attainable for most women in Sakubva society. To become a full member a woman must first be married by Christian or civil rites, be a communicant church member, adhere to the laws of the group, and make regular payment of dues to the association of 2/6 to 12/- yearly. Concessions to the large number of women lacking Christian marriages are made by the Independent African Church which accepts them as preparatory members and the Salvation Army which grants them full membership.

In the relatively open social structure of Sakubva, many women lacking marriage certificates evidence anticipatory socialisation into a *rwadzano* group⁵⁾. Attendance by such women at weekly meetings of an association may equal that of uniformed members. A major motivation for many women in seeking Christian marriages is to achieve the required marital status for *rwadzano* membership.

The acceptance as *rwadzano* participants of women of varying educational attainment and social status distinguishes these voluntary associations from others in Sakubva township. Highly significant differences in the latter were found in the educational attainment of participants (at the .1% level) with participation by those having eight or more years of education exceeding all others⁶⁾. No significant differences according to education⁷⁾ were found however, among *rwadzano* participants. In contrast to the findings of Brandel-Syrier⁸⁾, younger professional women of Sakubva belong usually to the *rwadzanos*.

1) Epstein, A. (1961): *op. cit.*

2) Mitchell, J.C. (1960): *op. cit.*

3) Mayer, P. (1964): 'Labour Migrancy and the Social Network': in Holleman, J.F. (ed.): *Problems of Transition*: University of Natal Press, Pietermaritzburg, pp. 21 - 34.

4) Hsu, F. (1963): *op. cit.*, p. 152.

5) See Merton for a more detailed exposition of this concept. (Merton, R. (1957): *Social Theory and Social Structure*: Revised edition, the Free Press, Glencoe, Ill. pp. 265-271.

6) Thomas, N. (1968): *op. cit.*, p. 135.

7) At the 5% level of significance.

8) Brandel-Syrier, M. (1962): *op. cit.*, p. 46.

Dress, a major sign of status in other social contexts, is not a divider among those who wear a common church uniform. The prayer or testimony of the uneducated grandmother is judged as efficacious as that of a schoolteacher.

Naturally differences in prestige and esteem are found within the *rwadzanos*, with those fulfilling leadership roles within the associations assigned a higher status. Further study of the overt and covert cleavages between leaders and the rank-and-file members, as well as between members and non-member participants, may reveal incipient class differences in Sakubva society.

5. SECURITY:

A third social need which church women's groups of Sakubva meet in part is that of *security* - herein defined as the need-disposition to find certainty of bonds with persons who will be mutually receptive and responsive at times of personal or family crisis.

A migrant's willingness to become permanently urbanised depends not only upon how he evaluates the personal friendships he or she has formed in town, but upon the extent to which protection and assistance can be provided in times of personal or family crisis - of unemployment, civil disorder, sickness, old age, and death. Despite the increase of welfare services provided by the municipality and national government, most Sakubva families maintain traditional means of security through rural landholding and mutual aid by kinsmen. Lacking job security and urban land rights few Africans desire to become 'fully urbanised'.

As security needs can only be partially fulfilled by kinsmen in Sakubva society, the *rwadzanos* perform manifest functions in assistance given at times of death and sickness, and largely latent functions increasing economic security¹⁾.

(i) Death:

Acceptance of certain kin group and lineage responsibilities by the religious association in town can be seen clearly at time of death. Upon receipt of news of a death in a member's family, *rwadzano* members visit the home of the deceased to express sympathy (*kubata maoko*). At the home they assist in food preparation for the mourners.

Whereas in rural society individual *rwadzano* members customarily present gifts of food and money to the bereaved, such giving is more highly organised in Sakubva. Neighbourhood *rwadzano* leaders receive individual gifts of money and food which is then presented on behalf of the group at the home of the deceased. Contributions vary according to the size of the church group and the status of the deceased or his family. Typical was the recent collection of £7. and 700 lbs. of maize meal from members of one *rwadzano* upon the death of a member's school-age child. Smaller churches may enlist contributions from a larger church area. The tiny New Apostolic Church collected £8.10.0. from members as distant as Salisbury, Bulawayo, and Lusaka upon the death of a member's child. Since 1963 the sixteen church women's groups which join together for monthly prayer services have sent token gifts of money and food upon each death in a co-operating church. Responsibility for this collection is normally assigned to members living in the same neighbourhood as the deceased. Such gifts of money are used for purchase of food for the mourners, (sugar, tea, bread, meat, vegetables, etc.); for the hiring of transport when burial takes place at the rural homeland; and for burial fees when in town.

While the responsibility of determining place of burial remains that of kinsmen of the deceased, certain manifest functions carried out by them in rural Shona society have been assumed in town by the *rwadzano* upon the death of a member. These include purchase of cloth for the burial shroud, the sewing of it,

1) See Merton, R. (1957): op. cit., pp. 60-82, for the development of this distinction.

and the washing and dressing of the deceased for burial. In addition, *rwadzano* members conduct prayers in the home, and honour the deceased by the wearing of their uniforms at the funeral service.

In these ways Sakubva religious groups fulfill multiple functions at time of death. They provide not only for the religious interpretation of death but for the social and financial support of the bereaved at this time of family crisis. No alternative associations (tribal, burial societies, political parties, etc.) seek to meet these needs in Sakubva society. *Rwadzano* members frequently speak of assistance at time of death as one powerful inducement for their joining the association in town.

(ii) Sickness:

Most *rwadzanos* provide for visits to the sick in hospital or home as a weekly rather than occasional activity of group members. Typical is the practice of Catholic women of receiving reports of the sick from neighbourhood leaders at the weekly meeting and the assignment of members to visit them. The certainty of bonds with others at such times is especially valued by women who have few kinsmen in town.

(iii) Economic Security:

Education in new urban techniques of living is provided by many churches for their women. Techniques of sewing, knitting, and cooking are taught at *rwadzano* meetings or in special church-related clubs. Members are encouraged to increase family income through the selling of home products including fruits and vegetables, not only to secure money for church dues, but to provide for their families.

Most church leaders today look to government welfare agencies to provide financial assistance for the destitute. Catholic women, however, have provided 100 lbs. of maize flour and 10/- occasionally to needy families.

6. APPROVAL:

A fourth social need met by the church *rwadzanos* is that of approval, herein defined as the moral support which comes through reciprocation with respect to value standards.

Rwadzanos function as normative reference groups which seek to set and maintain standards for individual participants¹⁾. The processes of normative control which regulate the behaviour of members are complex. They include not only expressly formulated rules or laws, but also socially-patterned expectations of behaviour (mores) which are reinforced by group sentiment.

Church women's groups are noted in Sakubva for their emphasis on law with its prohibitions and penalties. Rules for Catholic women deal primarily with the regular observance of acts of religious devotion. Among Protestants, however, great emphasis is placed upon ethical injunctions. Rules for Methodist (U.S.A. affiliated) women, for example, include prohibitions against beer brewing, use of tobacco, work in tobacco fields, arguing, fighting, and the use of 'evil medicine'. In addition, 'she must keep her home clean, and her children clean, look after her husband's clothes, keep them clean, and the buttons sewed on, and to give him warm water with which to bathe'.

Such *rwadzano* rules are utilised more as patterned expectations of behaviour than as legal codes capable of enforcement through penal sanctions. Public censure occasionally takes place, but only when the offence is flagrant or habitual. Two Catholic women, for example, were disciplined in 1967 - one for

1) See Merton R. (1957): op. cit., for an elaboration of reference group theory concerning normative groups.

drinking in public beerhalls, and the other for being 'a loose woman'.

Emphasis in *rwasadzano* teaching is placed more upon religious than upon legal sanctions - that anti-social acts bring upon one the disapproval of God as well as of society. To the fear of divine punishment is added the assurance of God's approval and reward of those who are faithful to Him. Prayer is believed to be the means through which the believer receives divine guidance and strength. Many *rwasadzano* members affirm that their most important help in overcoming temptation is prayer together in church and home.

The legal and religious sanctions applied by the *rwasadzano* are readily observable, but their effectiveness as control mechanism can be easily questioned. More powerful social sanctions are operative in these groups, however, when members interact as primary groups. We have already noted that the effective social networks of many active church women include a preponderance of members of their *rwasadzanos*. Informal and often unstated control over individual behaviour is present wherever this occurs. Gossip - condemned in the written laws of several *rwasadzanos*, but part of the hidden agenda of most neighbourhood prayer meetings - performs a latent function in social control. As in other primary groups, attitudes are formed by these women through informal conversation and suggestions and new roles entered into by imitation of one's peers.

Such control over individual behaviour is not 'totalitarian' (involving and regulating the behaviour of members in almost all their roles), as described by Mayer¹⁾ in his analysis of Bhengu's Church of East London. *Rwasadzano* members are free to associate with non-members and may participate in other voluntary associations. The control mechanism, however, may be equally effective. As powerful a moral coercion as public censure is that shame that comes through informal expressions of reprobation or ridicule by one's friends. Furthermore, a *rwasadzano* member can avoid conflicting moral pressures by choosing to associate in her effective social network with persons who share the same ethic as that publicly stated in the larger church women's association.

Admittedly not all *rwasadzano* women attain such a harmony of values between their primary and secondary group associations. On the one hand women living illegally in single men's accommodations in the township may have positive orientations toward the *rwasadzanos*. They may aspire to full membership within them and approve the values of the group while staying together with a man without marriage. On the other hand the *rwasadzanos* include nurses and teachers as full members who have formed close friendships at work with those who ridiculed church women's prohibitions against smoking and drinking. Wherever the values held by persons of a women's effective social network are at odds with the laws and mores of the *rwasadzano* which she attends, the latter's influence in social control of her behaviour is greatly diminished.

7. CONCLUSION:

Two hypotheses have been presented to explain the strength of church women's groups in the Sakubva township of Umtali: (1) social factors such as the provision of extensive married accommodation and the absence of strong voluntary associations competing for women's loyalties; and (2) functional success in assisting women to fulfill needs for sociability, status, security, and approval.

Admittedly religious institutions are but one part of a complex of institutions assisting rural migrants in their adjustment to urban life. In this paper an initial profile has been presented of their operation among women in one African township. Further research is needed into the manifest and latent

1) Mayer, P. (1961): *Townsmen or Tribesmen*: Oxford University Press, Cape Town; also (1963): 'Some Forms of Religious Organisation among Africans in a South African City': in *Urbanization in African Social Change*: Centre of African Studies, University of Edinburgh, pp. 113-126.

functions (or dysfunctions) of religious institutions in the adjustment of Africans to urban life among other sub-populations, in other urban communities, and comparative studies of their functions in meeting social needs in rural and urban communities.

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DISCUSSION ON THE SECTION
 'U R B A N M A N
 SOME SOCIAL SCIENCE VIEWPOINTS
 including
 THE AFRICAN AND CITY LIFE'

This section of the Conference covered two sessions. The discussion on the first papers was introduced by Professor D. H. Reader, of the University College of Rhodesia. He directed his discussion to the papers in the first session, (by Professor Blacking, Miss Hall, Professor van der Merwe and his colleagues, and Professor Wagner and his colleagues). Starting with Professor Blacking's paper on the 'Myth of Urban Man', he remarked that if taken literally this paper would mean that 'all the work that I have been doing on urbanisation over the last ten years is meaningless if not useless, so I can hardly be blamed for considering that his paper is grossly mistaken'. He felt that the paper rested on the double meaning of words, and presented but did not distinguish between, two different senses in which cities can be said to breed a different type of person, from rural areas. From the one point of view he felt that Professor Blacking was contending that the basic personality structure of people in town is not different from the basic personality structure of people in rural areas. He was reminded of Kluckholm's work on the Navaho Indians, and felt that it would be interesting to try to use in towns the techniques used by Kluckholm - as far as he knew this had not been attempted. Until such time as such research had been undertaken, the verdict on the question of no basic personality differences between people in town and country must be 'not proven'.

Secondly, Professor Reader felt that the paper by Blacking was concerned with the selective role-playing required in different contexts. 'Here the thesis would be that urban man, through the special environment in which he finds himself, is forced to perform certain roles, and to engage in certain activities which are not asked of him in the rural context ... In this sense it is useful from a research point of view to speak about "urban man" in the specialised sense of a man who is being required to perform certain roles in large areas in which he certainly is not required to perform in the country, and which make demands of certain types of skills and orientations - certain mental sets - not demanded of rural man'. Developing this idea, Professor Reader pointed out that even in the 'everyday world' there are stereotypes of the 'country bumpkin' which go right back to pre-industrial cities. He felt that there was some important social difference, revealed by these stereotypes, which the social scientist could not ignore. Therefore in terms of the second sense of talking of 'urban man' he felt that there were very real differences which were being obscured by Professor Blacking.

Turning to Miss Hall's paper, Professor Reader commented that the paper was a descriptive account of some class differences in behaviour found during the course of undertaking a study for another purpose. He remarked that when he hears '... a discussion about the so-called African middle-class, I begin to feel very sad that far more work is not done in this area by looking at the actual conceptualisations of the people themselves about class'. Research had shown that different classes tended to view the overall class structure in a community in terms of different models, and it was necessary to investigate this type of problem amongst the Africans. 'We are blithely assuming that there is a "middle-class", there is no "upper-class", and there is also a "working-class" - but it seems to me that in Miss Hall's paper there are very tantalising references, especially near the end, to the various models that these people are actually operating, and it would have been nice in a study like this if these could have been conceptualised, and the various behaviours she described cross-tabulated by the various strata which come out from the models'.

Moving on to the paper by Professor van der Merwe and his colleagues, Professor Reader regretted that due to shortage of time it had not been possible for the paper to report on the characteristics of the one-third or one-quarter of the total sample which had refused to co-operate with the study. He remarked that the level of non-response was '... a very high rate of refusal for a live study. It would be acceptable for a mailed questionnaire study, but not for a

live one. One rather wonders in this study about the kinds of people who selected themselves out from interviewing. Were these people counter-dependants? Were they especially highly authoritarian people? Were they political Nationalists, or were they people wallowing in the misery of failure in important jobs? It is very hard to tell, but I myself am a little unhappy about the very high proportion of these people who are not interviewed'. Professor Reader put the question as to whether Professor van der Merwe intended any kind of sample follow-up study to try and pull in the non-responders.

In regard to the paper by Professor Wagner and his colleagues, Professor Reader commented that it was admirable from a methodological point of view. He pointed out that it was well known by social scientists that in Johannesburg the Hillbrow population is 'grossly over-studied'. These people are continually having interviewers banging on their doors ...', and wondered to what extent the replies of the people were, under such conditions, a valid indication of the true position.

During the general discussion and question-and-answer discussion that followed, Professor Blacking discussed some of the points raised by Professor Reader. He commented that Professor Reader had 'suggested that my points were wrong on the grounds that people play entirely different roles in the cities. My point is that of course they play different roles on the surface, but basically the *procedures* with which they play these roles are exactly the same as the procedures with which roles are played in preliterate societies'. Illustrating this point, he went on: 'to give you an example, anybody who has lived with a rural society will find an extraordinary number of people who have political shrewdness and business acumen. Now these are sometimes considered to be qualities that are peculiar to educated people. As a matter of fact they are not - if you sit on a University Senate you see that people have neither business acumen or political shrewdness. This point is borne out by Professor van der Merwe's paper - his elite are not particularly well educated, but evidently they were business-wise, very sharp, politically very sharp, and so on. This political shrewdness, business acumen, are manners of going about things which you find in preliterate societies, and which in urban societies are applied in different fields'. Professor Blacking went on to draw an analogy from the diplomatic field, commenting that one sees in the urban world diplomats and politicians '... playing around with very dangerous weapons - the modern armoury of atom bombs and things like that - but playing around with them with no more maturity of outlook than of primitive tribes playing around with poisoned arrows. This is why I want to stress that we are no different from our primitive contemporaries or predecessors in the way that we go about things. I also want to stress that the 'primitive' so-called is as intellectual and intelligent in the way he goes about things'. He also drew similar examples from the field of religion and art, illustrating his point that people in different cultural settings may play different roles, but do so by following the same basic procedures. He felt that '... What we are concerned with is *not* people behaving according to their roles in institutions ...', but with people as individuals.

In response to a question Professor van der Merwe commented that the study was not an investigation into decision-making in local government, but a study of positional leadership. The people occupying the top positions were selected and analysed. Thus by saying that the people in these top positions were well qualified educationally; had a wide field of experience and were successful in business; and had recent contact with lower social groups, they were merely indicating '... that there is a potential for possible competent leadership ...', rather than saying that in terms of actual performance the leadership was or was not competent. It was not the concern of the study to pass judgement on the decisions made by local government.

Mr. Schlemmer replied to Professor Reader's query about the over-studying of Hillbrow. He commented that as the fieldwork had been conducted in 1961 and 1962, this was at a stage before the Market Research Firms had invaded the area to the extent that they have today. Another factor which must be remembered was that there was an 80% turnover in population in Hillbrow every five years, so that 'the people who do live in flats often do not live there long enough to be pestered frequently enough by Market Researchers for them to develop a bias

against sociologists'.

The discussion became general, and various members of the audience put some questions (directly or less directly related to the papers), to the authors concerned.

The discussion for the second session was introduced by Professor Anna Steyn, of the University of South Africa. She dealt with the papers by Mrs. Preston-Whyte and Dr. Thomas. She considered that the papers succeeded '... in giving a very clear picture of a specific aspect of the life of the urban Bantu woman, namely the nature of some of the social networks and voluntary associative groupings developing in the urban areas among the Bantu, with special reference to the adaptive functions of these groupings'. She went on: '... I also found these papers very stimulating and thought provoking. Although these two papers apparently covered two entirely different and limited aspects of the life of the Bantu in the city, jointly I find them of very wide relevance to the whole area of the city life of the Bantu, with, on the one hand important practical implications concerning the adaptation of the Bantu to city life on the whole, and on the other hand, important theoretical implications concerning further research on social change and the sociological interpretation involved'.

She commented on some of the wider implications which she saw arising from these two papers. Despite the fact that the two papers had worked in two widely separated geographical areas, and covered two different topics, she found a close relationship between the two subjects - namely the fact that certain types of social groups develop amongst the urban Bantu women studied. These groups can be regarded as voluntary associative organisations. These associational groups develop out of different strata and at different levels in the Bantu community. They may vary widely in terms of size, method of formal organisation, length of existence, and in the development of formal norms and sanctions for deviance. Thus the *rwadzano* have to be placed at one end of a scale of formal organisation in contrast to the polar-type of social network where no formal organisation exists. The domestic servants produced the latter type of group. Nonetheless, these different types of organisations can be seen as developing to meet the needs of the urban Bantu population. 'Dr. Thomas included in his analysis the work of Hsu. He followed Hsu in seeing the basic social groups as meeting needs of sociality, status, security and social control. The *rwadzano* meets these needs in both the urban Bantu women and the newcomer to the city. While Mrs. Preston-Whyte did not start with such a specific theoretical orientation, she comes to the same type of conclusions with regard to the domestic servants.' Professor Steyn went on to refer to work by investigators such as Mayer, Wilson, Clement, Hellman and others, and concluded that we can say with a reasonable amount of certainty that these types of voluntary associative groups generally develop amongst the urban Bantu, and make a contribution to their adjustment to urban life by meeting specific important needs. These types of organisations should be seen against the background of the weakening of the traditional tribal patterns of the Bantu, as the development of new types of social groups. She referred to Hsu's contention that when groups no longer meet the social needs of a person, he will either seek, or help to develop, other groups where he will find a more satisfactory solution to his needs. In Hsu's own words, 'he will tend to be alienated from the group and to seek other attachments if, in his view he is not achieving it' (i.e. the satisfaction of his needs), 'or is achieving it not so much as he deems necessary or desirable. ... the family establishes for the individual his first connection with his fellow human beings ... if the individual cannot fulfil his social needs in his family ... he is likely to reach out for, work toward, and even form non-familial groupings where the satisfaction of his social needs has a greater chance'. (Hsu, pp. 152-153).

Seen in this light the development of these non-family groupings in the city reveals that the traditional groups are no longer in a position to meet the needs of the Bantu. The characteristic and most important groups in the structure of the pre-industrial tribal culture of the Bantu were the extended family and the kinship group, the age-group, and the clan, wherein fundamental principles of seniority and authority played an important role, with a specific stratificational system based upon birth, sex and age. The nuclear family is integrated by this means into the wider social structure, and so the individual is brought into contact with a larger social environment. One of the crucial problems associated

with the urbanisation of the Bantu is the weakening of these traditional kinship groupings, and the structural isolation of the nuclear family and its members. Professor Steyn saw this process associated with the weakening of primary groups and of the traditional normative system, with the consequent need for the development of new forms of social organisation. From this point of view the voluntary associations studied were particularly interesting as they had been developed spontaneously by the Bantu. These types of new groups apparently fulfilled important functions which were no longer carried out in urban areas by the traditional groupings. Therefore the social importance of what was happening must not be under-estimated, and further research should be directed towards a systematic analysis of all the forms of these networks and spontaneous associations; the functions shown in general by these kinds of associations; the relationship between the new associations and the traditional tribal structure and the way in which the values of the Bantu are still manifested; the way in which these new structures combat anomie and disintegration of the urban Bantu community; the ways in which these new structures achieve integration within the community and the way in which they incorporate the individual; and finally, the general trend shown by the whole pattern of development of these types of associative groupings.

After Professor Steyn had initiated the discussion, it became general. Mr. W.J.P. Carr, Manager of the Non-European Affairs Department of the City of Johannesburg, commented that in Johannesburg there were approximately 20,000 female domestic servants who lived on the roofs (i.e. top floor), of the larger blocks of flats (apartments) in the City, that conditions of complete artificiality had grown up, which negate all principles of married life or concepts of Christianity, and so on. He felt that the future for such domestic servants, living on the roof of a large block of flats in the company of 60 or 70 other women, was not very promising. Unfortunately such women were precluded by law from occupancy of houses in any of the municipal townships, as it was contrary to policy for houses to be let to a woman unless she is a member of a stable family unit - and even then, unless there were very special circumstances, she could not get occupancy of a house in her own rights. The theory behind this is that all Bantu women have a guardian somewhere or other, and that if she has no husband to care for her, then she should return to her guardian-at-law, (in early days always residing in a rural area). Mr. Carr agreed with the point made by Mrs. Preston-Whyte that there was very little future for this type of woman in the rural area, for she would have no means of earning a livelihood unless she had access to, or owned land. Finally, he disagreed that the men who cohabit with these types of female domestics brought much excitement into their lives. He felt that they brought more misery and maladjustment to the lives of all concerned. 'There is probably more crime, theft, stabbings, assault, dagga-smoking etc., among this particular group than any other section of the community I have to deal with ...'.

Professor Blacking commented that Mr. Carr had raised some important points, and that while the solution might be for domestic servants to live a family life in the townships, the employer all too often preferred to have a servant who could minister to his or her needs first thing in the morning and last thing at night, and this implied a servant resident on the premises.

Some discussion took place on the attitudes of African women to marriage and illegitimacy. Mrs. Preston-Whyte commented that in regard to the question of marriage, most African domestic servants would definitely like to get married. However, there was also the attitude that 'men are a nuisance - they leave you; when you are married you bring up children; you bring up daughters and then your husband comes along and demands the lobola'. So their attitudes were frequently ambivalent. Discussing the liaisons which domestic servants often have, she said that many of these were with African married men. She went on 'I think that a lot of men seek out women because they can sleep with them at night; spend the evening there, often adjacent to their jobs. For instance, there are various men working in butcher shops - things like this - men who have to go on duty very early in the morning - it is much better to be able to live in a nearby "kia" (that is, a back-yard servant's room), 'than to travel right home to the township every night ... also of course if your wife is in the country, to have a domestic servant girl-friend is terribly useful, because she will iron your shirts, wash your clothes for you - she will provide you with the necessary

background of a wife to do all this, and a "wife" who can do all these things infinitely better than your own wife at home. She has had practice in working in European homes; she knows how Europeans live; and for African males aspiring to this type of life - this "smart" sort of life and outlook - domestic servants provide them with the possibility of living up to their ideals'.

She also went on to point out that a man living with a domestic servant obtained food from her and all sorts of other perquisites.

In regard to the question as to what happens to domestic servants in their old age, Mrs. Preston-Whyte commented that it was a crucial problem. The situation seemed to be that the African domestic servants have to go on working until they die - there are very few old age homes or institutions to care for them. 'What has occurred in Durban up to fairly recent times is that ageing domestic servants have realised the position - the need for security - and they have tried to get homes elsewhere - to get some possibility of a base in town ... when Cato Manor' (a shanty slum on the periphery of Durban) 'was still open they could put up shacks there, establish homes there; also they could acquire property at Clermont. Now where this is not available, what are these women going to do? They have the ties of looking after their daughters, and after their daughter's illegitimate children, but there is nowhere for them to live. What happens, I think, quite often is that a woman will go on working to support her illegitimate daughter (who is perhaps living in the country with her children) - she will go on literally until she dies; or she may go home to the country in her old age, and in her turn, the daughter may come to town, work as a domestic servant, sending home the wages to her mother and children in the country'.

Dr. Thomas replied to a question by Professor Blacking on the quality of the friendships of women in the *rusadzano* groups. He felt that while this was difficult to measure, preliminary investigation suggested several things. One is that township officials regard these women as amongst the most law-abiding group in the entire community. 'That is, friendships have enabled them to achieve a high degree of adjustment within town in remaining within the provisions of the law'. Secondly, preliminary comparison of the social network of members of the *rusadzano* groups shows that in contrast to women outside these groups, the effective social network of the members of the groups is much larger than those outside. Those not belonging to the *rusadzano* groups, especially those who were recent migrants, 'display the same pattern as described by Mrs. Preston-Whyte for domestic servants - i.e. they have a kinsman or two with whom a close relationship is held, and a very few others ... have more tenuous relations of friendship with the new woman migrant'. So he thought both in terms of the extent of the network and the quality of friendship, these *rusadzano* groups contributed to the women's adjustment to town life.

Professor Blacking concluded the discussion on the two papers by Thomas and Preston-Whyte by commenting: '... one thing that stands out from both these papers is that African women (in town) are searching for more meaningful relationships, and that the pattern this takes is very much affected by the social, political and legal environment, which raises many difficulties in the case of domestic servants. I would like to point out that ... all domestic servants are not quite as gay or carefree as we have been suggesting ... the point that Mr. Carr made that many of them are very unhappy ... must be remembered. Equally, it must be borne in mind that many of them in some (White) suburbs - and this is certainly the case in Johannesburg - are eminently respectable people, who do in fact settle down at the age of thirty to a life of breeding and marital bliss in a legitimate sort of way - and I think this is important to realise ... it seems to depend on the sort of suburbs that perhaps the Whites have'.

Others contributing questions and comments to the discussion for this two-session section of the Conference proceedings were: Mrs. Stewart of the Durban Marriage Guidance Council; Mr. Midgeley of the University of Cape Town; Mr. W.B. Knott of African Explosives and Chemical Industries, Umbogintwini; Miss B. Wright of the University of Natal; Mr. M.T.D. Savage of the University of the Witwatersrand; Mr. A.V. Trowbridge, a Planning Consultant from Durban; and Miss S. Hall of the National Institute for Personnel Research.

URBAN MAN
HEALTH ASPECTS

URBANISATION AND HEALTH CARE

J. P. Snyman

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INTRODUCTION:

This paper is mainly concerned with the planning of, and provision for, health care institutions for physically diseased and disabled people, and their location within the city fabric.

HEALTH CARE:

Positive health involves far more than the mere absence of disease. The World Health Organization defines health as a state of total physical, mental and social well-being. These facts are interdependent and all contribute together in their effect on man in determining his particular state of well-being in the sense stated in the World Health Organization definition. Negligence in one field will have repercussions in another. A physically healthy man who is mentally disrupted or socially misplaced cannot be considered to be positively healthy. Planning for positive health care therefore calls for a comprehensive outlook and approach by all concerned.

It is not intended to cover the related aspects of social security, social pathology, housing, education, sanitation, etc., which all go together to form the comprehensive field of social health and well-being. Brief mention will however be made of the contribution of environmental design to the well-being of the citizen.

It has always been considered healthy for man to maintain his contact with Nature. This is reflected in the more positive city planning endeavours. Integration with Nature, and balanced living conditions is the aim. Urban and rural life both have their benefits and disadvantages and it can only be hoped that the positive aspects will be exploited and reflected to a far greater degree in our city planning than has been the case in the past. It is however, interesting to note that admirable efforts in this direction - such as Tapiola in Finland - are at present undergoing serious criticism by the Finnish planners. The balance between urban and rural has obviously not yet been struck. Yet the urban fabric by the square mile with which we injudiciously tend to cover our natural environment is still a far cry from the original concept already being discarded by the Finnish planners. A great deal of thinking in depth is still necessary to find the urban fabric most suited to fully clothe the needs of man.

As elsewhere, our cities are in the process of being rebuilt and expanded rapidly and the question arises whether this man-made environment will be beneficial or alien to man. It is sad indeed to recall the words of Mumford when he asks why our cities have to remain such a mess in spite of our technological brilliance? This is an important question if we accept that our environment is important for our physical and mental well-being. Mumford has but echoed the premonitions and doubts of von Eckardt¹⁾ about the rebuilding of the entire urban America in the next forty years - an opportunity or threat (whichever way one wants to interpret it), existing virtually everywhere.

1) Von Eckardt, W. (1965): 'The Age of Anti-Architecture': *Design*: Vol. 9, No. 10, pp. 23 - 26.

In planning for the well-being of our societies, we have already progressed far beyond the basic problems of the provision of shelter, sanitation, nutrition, education and social security. We provide adequate ventilation and lighting and we heal the physically sick as well as we can. We knock down our slums and we then merely have to replace them with shiny new slums because our citizens are insensitised to the quality of their surroundings.

I consider this to be one of the most serious defects in our planning approach. We do not care enough about the quality of the physical environment we erect. Why must man adapt himself to the ugliness surrounding him by insensitising himself to its effects? Ugliness does matter as a sensory experience and it has a profound effect on man. Why must man cut off his awareness of his surroundings until he reaches the stage of not caring anymore? Is this not equally a physical disability? Such a person is not positively healthy and cannot live a full life.

Health care is a comprehensive process. In physical healing, the healing process cannot be said to be completed until the patient is fully rehabilitated into the community. The same applies to all other fields of planning. The process cannot be said to be completed until all aspects of the social, physical and mental well-being of man have been catered for. We are in danger of being dehumanised through our pre-occupation with purely technological processes and solutions to the needs of urbanised man. Too often man is reduced to merely a statistic so that his statistically-determined needs may be efficiently and accurately catered for. Our needs are being standardised - as in traffic and freeway planning - to the point where we can flow swiftly and smoothly with no future, no past, and indeed, nothing but an urge to drive ever onwards without having to stop to look at anything. We have lost the ability to see.

I have said in the beginning of this paper that positive health is more than the mere absence of disease. Equally so, beauty and joy consist of more than the absence of ugliness. And if ugliness does matter, as previously stated - then it is much more important that we rid ourselves of the stigma which is connected with the idea of beauty in our environment. I contend that beautiful surroundings, consciously created and maintained are important to the future mental well-being of urbanised man. We are facing a future in which increased leisure time features prominently. Where is man to go in this leisure time and what is he to do when he gets there? We cannot indefinitely go on escaping yet further and further away from the urban environment. Man's time can be spent far more creatively than by getting away from the rush, the noise, pollution, the squalor and meanness of his urban environment. Going away should not be the 'cure' for 'environmentalitis' caused by indifference and negligence on the part of the creators of the urban fabric.

If the environment we build is to the detriment of man's mind, we cannot claim to have taken care of his health in a comprehensive sense. Healthy people need healthy environments to live and work in, and this can only be achieved by dedicating the necessary amount of time and money to the things that go together to create an environment of joy and sensibility. This is health care by the politician, the public, the economist, the sociologist, engineer, architect and town planner, and I urge them to consider it seriously.

I have purposely dwelt only on the insensitising aspect of man's physical environment as I felt confident that other speakers will have covered the related sociological fields in their papers. I now wish to pass on to the aspect of health care as related to physically diseased and disabled persons. It must however be borne in mind that whatever field or aspect of health care is discussed, it must always be seen in its relationship to the other fields which together comprise and contribute to a positively healthy society.

As mentioned in the introduction, discussion will be restricted to the planning and provision of health care institutions - i.e. a hospital-centred service.

Any health care service must aim at raising the health standards of the community with the object of greater productivity leading to a higher standard of living. The health service must however always be related to the socio-

economic conditions and means of the society it is intended to serve, so as to make the most effective use of the available resources to the greatest benefit of the general welfare of the population¹).

A hospital-centred health care service generally operates on three main levels - i.e. the poly-clinic services, the out-patient service and the in-patient service. Each of these three levels represents an increase in the degree of specialisation and intensity of care ranging back to complete rehabilitation of the patient into the community.

The ever-increasing complexity and cost of modern medical treatment, coupled with the trend to specialisation due to this complexity, has brought about radical changes in medical treatment in recent years. Great emphasis is now placed on preventative treatment necessitating vastly-complex diagnostic services and greatly expanded out-patient services, to mention only two aspects.

It has become necessary to concentrate these highly specialised services in fewer and bigger hospitals in order to make them available to the community in an efficient manner. This concentration of facilities necessitates complete integration and co-ordination of hospital services, centring on the main hospital as a nodal point, supplemented by a rank series of services in the area served by the hospital. This service therefore ranges from specialised and comprehensive in-patient facilities, through the out-patient department and district clinic to home-care and rehabilitation services. Aspects of preventative care through education and immunisation, large-scale investigations such as for tuberculosis and supplementary nutrition are becoming vastly important in the health service.

In planning any aspect of a comprehensive health service it is important to investigate the needs and pattern of utilisation by the community. Mere provision of hospital facilities in a community where malnutrition and ignorance is predominant will not alleviate the problems of that community to any marked degree. If accessibility and transportation to the hospital is a problem of the community the facilities cannot be used to their full potential. This leads to waste and dissatisfaction of all concerned. It is therefore of the utmost importance that a hospital service for general health care must be based on the needs of the community to be served. In this sense, every hospital planned is an individual problem to be tailored to suit the particular situation²).

Determining this need and influence-sphere of every individual hospital is one of the biggest problems confronting the hospital planner. In the rest of this paper I will endeavour to indicate possible lines of investigation which might alleviate the problems of the hospital planner.

The Health-Care Centre:

An examination of the health service within a region or community reveals a hierarchy of services centring on a community hospital and ranging to out-lying poly-clinics, first-aid stations and general practitioner's offices. A parallel can almost be drawn between a consumer going to a shopping centre in order to fulfil a certain need and the patient - whether in-patient or out-patient - going to the medical centre in order to obtain medication of some sort

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- 1) National Building Research Institute, (1963): *Research into Hospital Buildings: Proposals for the regional development of hospital services for the non-White population of South Africa, with reference to the economic aspects and the application of research findings*: Council for Scientific and Industrial Research, Pretoria.
 - 2) Snyman, J.P. (1967): *Die Buitepatiëntediens*: Unpublished M. Arch. Thesis, University of Pretoria.

as determined by his need. In order to determine the extent and type of service to be provided in both cases, the nature and extent of the need, as well as the influence sphere of the 'service' to be provided, must be established.

Various studies have been undertaken recently in new hospital planning endeavours - such as was done in 1967 by the department of planning¹⁾ to establish which hospitals in the Transvaal should be raised to the status of regional hospitals, and the report by the National Building Research Institute on the location of a new hospital for Pretoria²⁾. Both of these studies have relied largely on origin and destination methods of analysis, and are admirable in that they hopefully point to a new era of scientific analysis in the determination of the location of hospital services - a far cry from what was in the past so often merely a political issue. In doing such an analysis the planner can go a long way towards avoiding the overlapping and costly duplication of services in one region to the possible detriment of other regions.

The fact that the health service, unfortunately, is not governed by economic principles to the extent that e.g. a shopping centre is, very often results in inefficiencies. In the U.S.A. facilities for open heart surgery exist anywhere within a 300 mile radius while even large centres average not more than one such surgical procedure a week³⁾. Even if the need for such facilities existed, the staffing problem remains. In South Africa this latter problem is very real indeed, and every effort must be made to avoid similar glamorous endeavours.

The poor correlation often encountered between the health-care system and the real need is often due to the fact that the hospital is assessed as a separate unit with 'prestige' and 'political' values or as an 'empire' of some autocrat, and not as part of a whole health system together with out-patient care, home care, preventative care, education and rehabilitation of the patient to the point where he can once again play his role in the community. Planning based on the determination of needs and a reasonable standard of accessibility would make such duplication or provision unnecessary⁴⁾.

In this country, these problems are further aggravated by the social structure of the various population groups and their distribution patterns. Health care must be provided for two different basic groups, i.e. the highly urbanised group and the group occupying the sparsely settled rural areas - including the underdeveloped Bantu homelands. Within these two groups, provision has to be made for the White population in whose needs the private doctor plays an important role, and the non-White population which is almost completely reliant on institutional services for their health needs. The economic and social situation, as well as the nature of the health needs of these groups differ, and therefore, obviously require a different approach for each as regards the pattern of health services to be provided.

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- 1) Department of Planning (1967): *A Planning Report on Regional Hospitals in the Transvaal*: Unpublished, Department of Planning, Pretoria.
 - 2) National Building Research Institute (1968): *Hospital Plan for Pretoria*: Council for Scientific and Industrial Research, C/BOU 369.
 - 3) Baumgarten, H. and Knapp, S.E. (1965): 'The smaller hospital enters a period of change': *Hospitals*: J.A.H.A.: June 1, Vol. 39.
 - 4) Burkens, J.C.J. (1966): 'The estimation of hospital bed requirements': *World Hospitals*. April.

To give an example - the health needs in an underdeveloped Bantu homeland, in which the majority of patients live remotely and without direct means of communication to the hospital, are very different to the needs provided for by a hospital situated in a highly industrialised area. In the former, the needs may be strongly associated with the problems of undernourishment, whilst the latter may be largely concerned with accidents. Whilst this latter hospital may - because of its location and the nature of its specialisation - have no problem in attracting staff, the first may perhaps suffer seriously from lack of qualified staff if situated in a position of maximum inaccessibility for a population largely without means of transport. In the urbanised society, the problem might be one of technical equipment to be installed, or the procurement of a suitable site, whilst in the underdeveloped area it is not so much the finer technicalities of hospitalisation but what the role of the hospital in the health service should be¹). Foley²) points out that in urbanised communities and with adequate transportation, urban residents accept the longer trip as a counterpart of specialisation in medical care. In the underdeveloped areas, such urbanised communities and adequate transportation facilities are virtually non-existent at present. Eiselen³) pointed out that in the Bantu homelands the main disease patterns belong to the infective, transferable and largely preventable groups. Ignorance and negligence, coupled with lack of co-operation on the part of the Bantu are still dominant factors in these areas, thus pointing largely to health education in order to achieve a permanent health-promoting mode of life.

It is obvious that in such a heterogeneous situation no single criterion for hospital provision can ever hope to achieve satisfactory results. The total health care need and utilisation pattern must first of all be determined, and only then can the planner set out to establish the role of the hospital and related services in the total health service in any of the above situations.

Establishing the Needs:

Various methods have been advocated to establish the need for health care within a community, such as relating the number of beds provided to the population served; this method is commonly used in South Africa, using the criterion of 5 beds/1000 population as a minimum for good service⁴). In the same publication the following table is given setting out the number of beds per 1000 population in various countries; these indicate the great variance in what is considered acceptable.

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- 1) Gauchie, D.J. (1966): 'In search of an African hospital concept': *World Hospitals*: April.
 - 2) Foley, D.L. (1961): 'The use of local facilities in a metropolis' in *Urban Research Methods*: by J. P. Gibbs (ed.): van Nostrand, Princeton.
 - 3) Eiselen, Dr. H.H. (1968): 'Gesondheidsopvoeding in die Bantoetuislande': (National Seminar on Health Education, 3 May 1967): Supplement to *South African Medical Journal*: 27 January.
 - 4) Republic of South Africa (1962): *Verslag van die kommissie van ondersoek insake die hoë koste van mediese dienste en medisyne*: Government Printer, Pretoria.

<u>Country</u>	<u>Hospital No. of beds per 1,000 population</u>
Ireland	17.2
France	16.2
Great Britain	10.8
Germany	10.5
Denmark	10.2
Belgium	10.0
U. S. A.	9.7
Israel	6.8
Ceylon	3.0
Malawi	1.2
Ethiopia	0.4

Another method used relates the area of nursing space required per 1000 of the population. This method has the advantage over the previous method of bringing subsidiary service areas into the picture. These areas - such as the out-patient and diagnostic services - often constitute a large portion of the total hospital area and cost of hospital services. In Sweden, the planning authorities use a medical-care consumption unit which relates the amount of money spent to the amount of health-care consumption. In Finland, the unit - hospital days per person per year - is used.

Such a general standard, whatever its value, has one very serious drawback - unless adapted to localised situations, it cannot give a true evaluation of the local need. Mere provision of beds often does not modify the need but only influences the demand for beds - increasing supply (to an extent) creates increasing demand¹). Need is not identical to demand. The only standard which will truly reflect need will have to make provision for factors such as the morbidity index, age compositions and social conditions of the society served. For example, housing - the availability, quality or possible lack of it, and conditions of overcrowding - might make home care impossible. Furthermore, the facilities for, and attitude towards external or out-patient services, the availability of qualified staff, the accessibility of the services, and changes in the pattern of medical care - such as the increasing tendency to replace intra-mural care by extra-mural care for medical, psychological, efficiency and for economic reasons - are all matters to be considered.

It does seem that an approach similar to methods used by shopping centre planners or market analysts might have great value for the health care planner.

The Shopping Centre:

Briefly stated, a shopping centre can be considered as the point in a region or city where the retailer and consumer meet with the purpose of exchanging goods or a service in return for payment. The consumer has a certain need which he cannot satisfy by himself and he is therefore prepared to travel a certain distance in order to achieve that satisfaction of his need. The distance the consumer is prepared to travel will depend on the nature and the urgency of his need as well as certain so-called 'friction' factors of which the most important is the accessibility of the centre.

These factors determine the nature of the centres in a rank size series throughout the community. A hierarchy, ranging from the small centres providing the daily needs and situated close to the consumer, to the central business area, providing specialised goods and services of which the consumer generally has only occasional need, is established. The local centres providing daily needs draw

1) Burkens, J.C.J. (1966): *op. cit.*

their customers locally and as the centre increases in size, its influence sphere and the degree of specialisation increases.

Generally speaking, profit-making being the main incentive, a reasonable state of equilibrium exists between the various centres, a new one being formed when the need establishes itself or an existing one dying when the need no longer prevails.

The superficial resemblance to the health service is obvious. Without market research a viable shopping centre cannot be planned. Does the same not apply to hospitals - with its parallel in morbidity studies?

Coupled to such analysis, a new criterion, such as used in shopping centre planning - e.g. sales per square foot of retail area as a measure of the viability of a centre - must be brought into use. We have previously referred to the medical care consumption unit used in Sweden and the area of nursing space per 1000 population used elsewhere. Research into these alternative measures of viability of the health service must be undertaken. Their parallels exist to a large degree in the shopping centre field. Ways to adapt the methods to suit the needs of the health care planner must earnestly be investigated. As an example of the possibilities of these methods the gravity model framework developed by Lakshmanan and Hansen¹⁾ for shopping centres based on a situation of overlapping competition between centres seems promising as a method for determining the influence sphere of a new hospital.

The Influence Sphere of a Hospital:

Many urban hospitals attract most of their patient loads from areas lying within 15 minutes travel time of their respective hospitals²⁾. The same has been indicated for polyclinics^{3), 4)}. The relationship to shopping centre planning is once again obvious. Accessibility is a prime factor in both cases. It must be pointed out, however, that the consumer, confronted with a choice among several alternative centres, will not necessarily choose the nearest. All the centres stand in competition to each other with the sales potential of a centre directly related to its size and inversely to the distance (in time) to the consumers⁵⁾. As size offers a wider range of goods - or services, (i.e. specialisation), it attracts consumers from a wider area. The further away the shopping centres are spatially, the greater the sales potential of the centre.

Applied to the hospital or health-care centre the gravity model of Lakshmanan and Hansen could perhaps be modified to read as follows:

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- 1) Lakshmanan, T.R. & Hansen, W.G. (1965): 'A retail market potential model': *Journal of American Institute of Planners*: May, 1965.
 - 2) Drossness, D.C. & Lubin, J.W. (1966): 'Planning can be based on patient travel': *The Modern Hospital*: Vol. 106, No. 4, April, 1966.
 - 3) Zwart, W. (1958): *The Design of Polyclinics and their Effect on Medical Services in Bantu Urban Areas*: National Building Research Institute, Council for Scientific and Industrial Research, Pretoria.
 - 4) Toshitake, T. *The Influence Area of O.P.D.*: Studies in the design of hospitals in Japan, University of Tokyo.
 - 5) Department of Planning (1967): *op. cit.* Also see Lakshmanan, T.R. & Hansen, W.G. (1965): *op. cit.*

The influence sphere of a centre is directly related to its size, which, as it increases, would attract health-care consumers from areas apparently served by other health-care centres. To establish the number of consumers drawn from each area to the centre, a measure of consumer expenditure on health care services is used.

The value of this model for the health service planner lies in the fact that the market potential model accepts the location of existing facilities as inputs and then estimates the potential. Since alternative location size patterns can be assumed, this model offers a technique for estimating the consequences of alternative patterns of growth. Thus the impact of a large new centre on the performance of a nearby centre can be established. With the necessary adaptation of this gravity model to suit his particular needs, the health service planner can now determine the influence sphere of his hospital and how it will affect the other health services, either existing or envisaged. Once this has been done, the exact size, nature and location of the service to be provided can be determined.

CONCLUSION:

In this paper I have touched on two aspects of planning for urbanised man. The first relates to the quality of his environment as a factor in determining his well-being. Unfortunately the quality of his environment is a sadly neglected feature, due to indifference on the part of the planner and his clients - the authorities and the public. Secondly, in the case of planning for hospital care, a comprehensive approach is indicated as necessary, involving co-ordination of needs.

In conclusion, the question arises - do we in South Africa have a comprehensive integrated health service? Unfortunately, the answer is 'no'. The fragmented nature of legislation and control over our health services is too well known to repeat here. I only wish to refer to the report on the high cost of medical expenses¹⁾ in which the problems of multi-level administration are outlined. I can do no better than to repeat what has been said in that report:

'Op drie vlakke; staat, provinsie en plaaslike owerheid, word belastinge gehef, 'n deel waarvan vir gesondheidsdienste gebruik word, en op vier vlakke gepoog om uitvoering te gee aan die gesondheidsorg, 'n sorg wat fundamenteel nog kartografiese, nog politieke skeidslyne kan erken daar siekte en gesondheid inherent op hierdie (of soortgelyke) lyne nie verdeelbaar is nie ... Naas die ontoereikende diens bring die duplisering onteenseglik ekstra koste mee in die oorvleuelende organisasies, die verdubbeling van buitepasiente dienste, die uiteenlopende patroon, plasing, bemanning en bestuur van hospitale, die afsonderlike aankoop van voorrade en die onvoordelige gebruik van die beperkte mannekrag op mediese gebied'²⁾.

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- 1) Republic of South Africa (1962): *op. cit.*
 - 2) Republic of South Africa (1962): *ibid.* The quotation may be translated as follows: 'At three levels - state, provincial and local government - taxes are levied, a portion of which is used for health services. At four levels an attempt is made to provide health care - a care which basically cannot recognise cartographic or political boundaries, since disease and health inherently are not divisible on the basis of these or similar lines... Alongside of the inadequate service, duplication undoubtedly brings additional costs with the overlapping organisations; the doubling of out-patient services; the divergent design, location, staffing and administration of hospitals; the separate purchase of supplies; and the unprofitable use of the limited manpower available in the medical field'.

When that report was published in 1962, the South African Nursing Council, the South African Nursing Association, the Transvaal Hospital Department, the State Health Department, the Cape Province Hospitals Department, the Orange Free State Hospitals Department, the Natal Hospitals Department, the Radiologists Group of the South African Medical Association, and the Hospitals Administrators group of the South African Medical Association, all declared themselves in favour of centralised control of health services. Yet five years later, Dr. J.P. Roux calls for a thorough investigation of the problem of the duplication of health services, in a paper¹⁾ on inter-institutional relationships, in which he discusses the need for co-ordination of the health services.

Also in 1967 Professor J. J. N. Cloete expresses the thought ... 'It might, therefore, be desirable once again to subject the whole question of health in all its manifold and complicated forms to a comprehensive investigation in order to devise a new system for the rendering of health services²⁾.

The urgency of this matter cannot easily be overstressed. The health service has much too vital a role to play and can only fall behind with such a cumbersome administrative system. Even research work into the co-ordination of hospital planning has suffered due to this system. One may very well ask to what degree vested interests and ivory tower tendencies can be blamed for this situation, exploiting the tendency to fragmentation peculiar to South African administration. Until such time as these matters have been cleared up there is little hope for improvement in health-care administration, and in planning for the social, physical and mental well-being of the urbanising society. Very high standards are undoubtedly being maintained by planners and by the medical staffs generally - but it is necessary that they are not hampered by an archaic administrative system and approach.

I therefore conclude this paper with a strong plea for an urgent re-evaluation of the administrative system for health-care planning.

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- 1) Roux, Dr. J.P. (1967): 'Inter-institutionele Verhoudings' *Journal for Public Administration*: Vol. 3, No. 2. October.
 - 2) Cloete, Professor J.J.N. (1967): 'The Authorities Charged with Health Services in South Africa': *Manual for Public Health Nurses*, edited by C. Searle.

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CHILD HEALTH IN LOW INCOME GROUPS

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It is well that in the matter of child health the focus should be on towns and cities where increasing numbers of the so-called developing peoples are now concentrated¹). The speed of their development and the extent to which they will reach their full potential must depend very largely on the quality of the children now being reared. In planning for the future of such people this fact cannot safely be disregarded. Children handicapped in health and circumstance during their formative years may never be fit to use the opportunities offered for their advancement.

This report deals with non-White children from low income households in Cape Town and its peri-urban area. The Cape Coloured people are by far the largest ethnic group in Cape Town, outnumbering the Whites by a third. They form three-quarters of the non-White population, but produce five-sixths of the new-born infants, and a similar proportion of the non-White attendances at the Children's Hospital. The other quarter of the non-White population is mostly African, a fluctuating and predominantly male group. The African birth-rate in 1966 was 23.6 per 1000 of the population as against 39.5 for Coloured and 38.3 for Asiatic²). There were fewer than 8000 Asiatics in Cape Town in 1966.

The socio-economic situation of the Coloured people is better than that of the Africans³). In order to give the most favourable picture possible in this report, the figures quoted are those for the Coloured people, when available, rather than for the non-White group as a whole.

The population described is not typical of the whole country but there are advantages in using it for field studies. The majority of the people who compose it have no unique language, religion nor way of life⁴) and no strongly-held customs or superstitions to confuse the interpretation of findings. Such findings may therefore be applicable, basically, to the problems of urban child health among developing peoples in other parts of the world.

Although the better educated Coloured people play an increasingly important part in commerce and industry, in administration and the professions, a very large number are still engaged in unskilled and semi-skilled work⁵). Due to the present high cost of living in relation to wages for labourers, many households are below the poverty level by the time the third child is born, and before there is

- 1) Horrel, M. (1963): *Survey of Race Relations in South Africa*: South African Institute of Race Relations, Johannesburg. p. 74.
- 2) Report of the Medical Officer for Health, Cape Town, 1966.
- 3) Van der Horst, S. T. (1965): *Industrialisation and Race Relations*; Ed. Guy Hunter, p. 122.
- 4) Cilliers, S.P. (1963): *The Coloureds of South Africa*; Baniers Uitgewers Bpk. Cape Town, p. 24.
- 5) Muller, H. (1964): *Die Kleurlingbevolking van Suid-Afrika*: Ed. Erika Theron: Universiteits-Uitgewers-en-Boekhandelaars, Stellenbosch, Bl. 37.

any so-called 'mis-spending' of the money. It is estimated that at least 30 per cent of the Coloured households are in poverty and considerably more of the African, and that the large numbers of children from such households form the bulk of the out-patient attendances at the Children's Hospital. In 1966 there were 158,565 non-White attendances, 154,717 being for medical conditions particularly those associated with malnutrition. In the specially erected resuscitation room 12,240 'drips' were given mainly for dehydration of malnourished infants with gastroenteritis. Despite all the care that is available, 486 infants died here during the year without ever reaching the wards.

Despite a steady improvement in child health in Cape Town over the years there remains a great discrepancy between the mortality rates of White and Coloured infants - viz. 16.6 per 1000 live births in 1966 as against 68.9. Whereas, in the White population, deaths under 5 years constituted 3.5 per cent of all deaths, such deaths constituted 34.6 per cent of all deaths in the Coloured population. These differences indicate the extent to which preventable disease exists in the community. The figures quoted are by no means the most striking in the Republic.

Table I compares the number of deaths in the White and non-White groups according to the three most common causes among the latter.

TABLE I

Infant Deaths Due to Three Common Causes
per 1000 Live Births in 1966, in Cape Town

Cause of Death	White	non-White
Gastroenteritis	1.9	20.6
Bronchitis & Pneumonia	0.5	11.9
Immaturity	3.2	11.2

The high mortality from gastroenteritis and respiratory disease in the non-White group is attributed to malnutrition which makes the effect of infection more severe than in well-nourished children. The greater number of deaths from immaturity may well have a nutritional basis also. Even *in utero* the Coloured child seems to be at a disadvantage, the stillbirth rate being almost twice as great among Coloured as among White babies - viz. 19.8 and 10.1 respectively per 1000 births. Furthermore, according to a hospital study²⁾ of over 7000 births, the incidence of prematurity among Coloured babies was almost twice that for Whites. The World Health Organisation reports³⁾ a clear socio-economic gradient in birth-weights within ethnic groups, while Hendricks⁴⁾, in Cleveland, finds that the whole of obstetric efficiency is impaired within ethnic groups when the socio-economic situation is poor. The trend of current opinion⁵⁾ is

- 1) Batson, E. (1954): *Journal for Social Research*: 5, No. 2; also see Wittmann, W., A.D. Moodie, S.A. Fellingham and J.D.L. Hansen (1967): *South African Medical Journal*: 41, 664.
- 2) Malan, A.T., A. Evans, W.B. de V. Smit and H. de V. Heese (1967): *South African Medical Journal*: 41, 698.
- 3) World Health Organization Expert Committee (1965): *World Health Organization Technical Report Series*: No. 302, p. 14.
- 4) Hendricks, C.H. (1967): *American Journal of Obstetrics and Gynaecology*: 97, 608.
- 5) Editorial, *Lancet*, 1964, 1, 1260. Thomson, A.M. & F.E. Hytten (1966): *Nutrition*, 3, 103.

that not only is the nutrition of many mothers inadequate during pregnancy, but their physique and physiological efficiency have been undermined by all that goes with a life-time of inferior social circumstances - i.e. susceptibility to infections and other diseases and long-standing malnutrition, overcrowding and failure to seek or to receive optimal medical care.

A most disturbing finding by other workers¹⁾ is that, among infants weighing less than 4½ pounds at birth, there appears to be an increasing number of low average, dull, retarded and physically or mentally defective children as birth-weight decreases. In a community like ours a high rate of premature births in its lowest income groups cannot be viewed with complacency, especially as these births include many infants of very low weight.

The assumption is that damage to the brain or retardation of its growth may be permanent if it occurs at the time when the foetal nervous system should be developing most rapidly. This assumption has been further developed by Stoch and Smythe²⁾ in their pioneer work on the intellectual development of children after severe and prolonged undernutrition in the first year of extrauterine life. In a controlled 11 year follow-up study of 20 grossly malnourished infants they have presented evidence, not only of physical growth retardation, but also of permanent reduction in brain size and defective intellectual development. Although much further work on this remains to be done the inference should not even now be overlooked - i.e. that relative intellectual impairment may possibly occur among the many infants who suffer a degree of malnutrition of long duration, during the early period of brain growth.

This adds weight to the importance of judging the state of child health at least as much by morbidity as by mortality rates. 'It used to be thought', wrote Sir John Boyd Orr³⁾, 'that the high infant mortality among the poor was Nature's salutary method of eliminating the unfit. This ... is not supported by facts. Where the infant mortality rate is highest the survivors are of the poorest physique and vice versa'. The studies next to be reported deal with some such survivors in a group with a high rate of early mortality.

The most important conditions of child malnutrition among the Cape Coloured children are:

(i) Growth retardation which is very widespread and often overlooked. It renders children particularly susceptible to the effects of childhood illness⁴⁾. Measured by reference to percentile charts which allow for a wide range of normality it tends to occur from the age of six months or earlier. It affects both weight and height and may be permanent. X-ray reveals a bone age several years less than the child's chronological age⁵⁾. Studies of body composition show that the more underweight a child is for his age the greater is his body water content, and by inference, the less his body solids⁶⁾.

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- 1) Knobloch, H., R. Rider, P. Harper and B. Pasamanick (1956): *Journal of the American Medical Association*, 161: 581; also see Drillien, C.M. (1964): *The Growth and Development of the Prematurely Born Infant*: Livingstone, London, p. 315; and McDonald, Alison (1967): 'Children of very low birth-weight': *M.E.I.U. Research Monograph No. 1*: William Heinemann Medical Books, Ltd., p. 30.
 - 2) Stoch, M.B. & P.M. Smythe (1967): *South African Medical Journal*, 41, 1027.
 - 3) Orr, J.B. (1939): *Nature*: 144, 734.
 - 4) Brock, J.F. & Hansen, J.D.L. (1965): *Symposia of the Society for the Study of Human Biology*; VI: Pergamon Press, Oxford, p. 262.
 - 5) Wittmann, W. (1964): Unpublished M.D. thesis, University of Cape Town.
 - 6) Hansen, J.D.L., G.L. Brinkman, M.D. Bowie, (1965): *South African Medical Journal*: 39, 491.

(ii) A high incidence of specific nutritional disease such as marasmus due to too little food of any sort; kwashiorkor due to imbalance of protein and carbohydrate in the diet; rickets due to insufficient milk intake and inadequate exposure to sunlight; and iron deficiency anaemia. Several of these states may occur in one child at the same time. A long-term study of 204 non-White hospital cases of kwashiorkor was started in 1958 and remains current¹⁾. The background was one of poverty, ignorance, social disorganisation and very poor housing. There was a total mortality of 35 per cent after five years, 16 children having died after discharge from the wards. There was a continued state of malnutrition among 50 per cent of the survivors²⁾ but, as their sibling controls were in much the same state, the incident of kwashiorkor per se could not be said to have caused this.

(iii) A wide prevalence of gastroenteritis, bronchitis, pneumonia and other infectious diseases such as measles in a more severe form than that obtaining among well-nourished children. A year's follow-up of 101 non-White cases of severe gastroenteritis³⁾ from the resuscitation room confirmed the association with malnutrition, poverty and poor social conditions described by earlier workers⁴⁾. This was especially true in children over the age of ten months and a number of the latter developed frank kwashiorkor during the course of the year.

Child health in Cape Town is not affected by hookworm, bilharzia, malaria, nor to any great extent by amoebiasis. Tuberculosis is still prevalent but in 1966 it was less important than measles as a cause of infant mortality.

The foregoing studies were carried out on hospital populations. As a result of the findings it was assumed that, in the medium to low income groups of the general community, the degree of malnutrition and the incidence and severity of infection might diminish inversely with the economic standard. To test this assumption a random sample of children aged three months to three years, was drawn by the National Institute of Mathematical Sciences from the families of unskilled and semi-skilled Cape Coloured workers on a Council housing estate. It was designed as a representative sample so that findings could be applied to other urban low-income populations. The grouping of the households was on an income basis and this was affected by wage rates and by family size, calculated as cents per head per day. There were four groups of 30 children, labelled A to D in ascending order of income. These 120 children were visited weekly for a year in order to obtain clinical, biochemical, dietary and medico-social data and to maintain a record of illness⁵⁾.

Table II shows available income based on fathers' earnings and on supplemented earnings. The main wages of the A and B fathers placed those households below the poverty level. As stated earlier, this was not entirely due to the large size of the families in these two groups. It was noted that, if the mother worked, the mean wages of the A but not of the B households remained below the

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- 1) Moodie, A. (1961): *Journal of Pediatrics*: 58, 392.
 - 2) Moodie, A., W. Wittmann, M.D. Bowie & J.D.L. Hansen, (1967): *South African Medical Journal*: 41, 1253.
 - 3) Wittmann, W. & J.D.L. Hansen (1965): *South African Medical Journal*: 39, 223, also Moodie, A.D., W. Wittmann, A.S. Truswell, and J.D.L. Hansen (1965): *South African Medical Journal*, 39: 498; and Wittmann, W., A.D. Moodie and J.D.L. Hansen (1967): *South African Medical Journal*: 41, 414.
 - 4) Krige, E.J. (1952): *South African Journal of Medical Sciences*, 48, 221.
 - 5) Wittmann, W. et al (1967): *South African Medical Journal*: 41, 664 (*op. cit.*).

poverty level of 25 cents per head per day¹). Good foster care for those who can afford to pay little is seldom available and the children in the lowest income groups tend to suffer more than others if their mothers go to work.

TABLE II

Available Income Based on Fathers' Earnings
and on Supplemented Earnings

HOUSEHOLD AND INCOME DETAILS	GROUPS OF CHILDREN			
	A	B	C	D
No. of households	30	30	30	30
Total No. of people	266	227	175	121
Income: father alone (rand/week)	10.25	14.64	17.14	19.64
Range	(0-15)	(9-20)	(8-33)	(9-36)
Cents/head/day	14	24	36	50
Total for household (rand/week)	14.57	17.88	20.99	25.86
Range	(3-29)	(10-25)	(9-33)	(14-40)
Cents/head/day	21	28	46	68

Weight and height for age were the chief criteria of nutrition and in the results it was noted that there was a stepwise improvement in weights and heights of the children as mean income per head per day increased from group to group. In families where money was available it was noted that high protein foods were very readily bought, but when it was scarce, a balanced diet was sacrificed in favour of cheap but bulky carbohydrate foods.

With regard to infection, the low income children had suffered more often and more severely in the past and they continued to do so during the study year, particularly with regard to diarrhoea. Exposure to infection was also more excessive for them and density of overcrowding²) also diminished stepwise from group A to D. This overcrowding exists in spite of a vigorous building programme that has been under way for some years.

From the child health aspect the need to increase the wages of labourers to a living standard is very clear, but it is unlikely to be practicable unless average family size decreases in the future, and work productivity increases. It would not be practicable to pay wages high enough to support the present very large families. Birth control measures are apparently more acceptable to the better-educated and better-off parents than to those of lower socio-economic status, who, in fact, stand more in need of such measures. It is when the latter have started to rise in economic status and to see the possibility of rising still further that they become willing to control the size of their families, emulating those socially more advanced than themselves. Improved socio-economic conditions are then, by inference, a powerful inducement to limitation of family size.

Closely associated with earning capacity and the payment of higher wages is school education. It was found that most of the low paid workers had had little education and were doing unskilled work, while most of the better paid workers had had more schooling and were doing semi-skilled work. It seemed likely that a higher standard of education, help in choosing suitable work, and more opportunities for work-training would have enabled many of the men and women to have

1) Potgieter, J.F. (1965): *South African Medical Journal*: 39, 1151.

2) Batson, E. (1944): *Social Survey of Cape Town*: Report No. S.S. 27, University of Cape Town.

made better use of their abilities. This would have been to the country's benefit also. As Professor du Toit has written, 'Suid-Afrika se probleem ... is nie gebrek aan getalle nie, dog aan opgeleide arbeid'¹⁾.

Social disorganisation, including excessive drinking, existed among some families in all income groups, but it decreased inversely with income. About four-fifths of all the families were functioning quite well in the community, some very well. Most of the remaining one-fifth were rated as 'disorganised but were still continuing to function, although at an unsatisfactory level'. They seemed capable of responding to active welfare work. Among them there were, however, the inevitable two or three that could truly be designated 'problem families' and which would probably need help permanently.

These three field studies of malnutrition in children led to the conclusion that its dominant and most remediable cause was an economic one. With increasing income there was a ready inclination to buy high protein foods regularly. The rates of pay for unskilled labour were too low in relation to present cost of living. Improving the earning capacity of the workers would ultimately lead both to a higher standard of living and to a decrease in average family size.

The condition of child health in low income groups has been built up over a period of years by a variety of forces. There is a limit to what public health authorities alone can still do to improve it. If the cities of the future are to be peopled with able and effective citizens, experts such as economists and educationalists are also needed, both to examine the present situation and to ensure action on their findings.

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- 1) du Toit, J.B. (1964): 'Die Kleurlingbevolking van Suid-Afrika'.
Ed. Erika Theron: Universiteits-uitgewers-en-boekhandelaars, Stellenbosch.
(The phrase means 'South Africa's problem ... is not a shortage of numbers, but of trained labour').

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DIABETES IN NON-WHITE PEOPLE IN NATAL
A DISEASE OF URBANISATION*

G. D. Campbell

Durban

Before discussion the connotations of the diabetic state in non-White people in Natal as a possible manifestation of urbanisation, it is extremely important to attempt to define what constitutes an urban-dweller in contrast to those living in rural areas.

I first started this study in 1958 and decided that any Zulu who had lived continuously for four years in the city, with no more than three months annual holiday, could be regarded as an urban dweller, as after that time, he would be less likely to migrate back into the rural areas. This decision was taken after having spoken to large numbers of Zulus in Durban - especially patients in the very large King Edward Hospital, and to certain workers who had been engaged in the study of health and development in urban-dwelling Zulus in Durban. The dramatic increase in standards of living in, and the size of certain communities, other than Durban or Pietermaritzburg in Natal, may now possibly vitiate this definition slightly. But for the purpose of the present discussion, the Zulu people that I have studied since 1958 have been included on this basis.

I was interested in the remarks of Professor Blacking in his paper on the 'Myth of Urban Man', and I find it hard to agree entirely with his perhaps scornful remarks addressed to those seeking to differentiate urban from other groups. Diet has a profound effect on the emergence of disease, and there are such striking differences between what is eaten in the towns and in the rural areas, that from a nutritional viewpoint there is nothing but differences between urban and rural peoples. It is not surprising that with such a differing spectrum of disease between rural Bantu and urban-dwellers, and the patterns of disease as seen in the urban-dwelling American Negroes, that it has been easy to link up in epidemiological studies the relationship not only between the diets eaten by these various groups, but also between the duration which the various groups may have been exposed to a particular nutritional environment, and disease emergence.

By and large widespread social and dietary changes are slow to take place, but my remarks must be viewed in the light of the remarkable dynamism of changes of economic and dietary circumstances that obtain in both our rural and our urban dwelling Bantu. There have been dramatic changes in quantitative and qualitative standards of nutrition in this country and others since the last war. Standards of living have been widely affected by changes of price in various commodities, changes in degrees of availability and changes in the tastes in various regions; often due to large-scale migration from less fortunate to more fortunate areas.

The greatest surge in numbers of migrants moving into Durban started with the late war years, and reached a peak just after the 1950-1951 years, when this tempo seemed to be restrained by various forms of legislation. Thus it has been of the greatest interest to compare disease rates amongst those who remained in the rural areas, with those who had spent many years under urban conditions; and in addition, to compare these rates with those seen in the Negroes in America, particularly in the large northern cities.

* Part of this paper was delivered in Afrikaans. It has been translated into English for the benefit of overseas readers.

In comparison with the Zulu people, the Indian migration into towns in Natal has been comparatively small. Thus we have compared the diets (as far as we can) and the disease rates in our Natal Indians, with those in rural dwelling Indians in India, and with those living in the large cities in India.

In studying the emergence of any disorder, it is important to discuss fully genetic components of the particular disorder, with special respect to the phenomenon of *penetrance* - or disease emergence with age - something that unlike skilled geneticists, I believe to be a manifestation *par excellence* of the environment.

For some years it has appeared certain that three or four generations ago diabetes did not exist amongst our working class Indians. This is confirmed by my colleagues in India who have surveyed people in the rural areas whence our South African working class Indians have come. Yet we now find in an urban *working* class Indian group a true incidence of 6.0% in people over the age of 10 years. Likewise, it is also highly probable that diabetes in the Zulu people was very rare 50 years ago, when it was estimated that only 10% of our Bantu people lived in urban areas. Yet, my glucose tolerance test studies on 2,100 mixed Bantu people in the Mamelodi township of Pretoria, give a figure of 2.0% incidence of diabetes in people over the age of 10 years.

I have always found it hard to believe that diabetes has any significant genetic component: predisposition perhaps, but the disorder, never - or where would the diabetes in our local non-White people have come from? May I remind you that in this comparatively small city of Durban, there is a clinic that caters for no less than 11,000 non-White diabetics, the vast majority of whom come from the lower economic non-White groups.

Few apparently believe the suggestion repeatedly put forward by myself, that the diet eaten by our family tends to follow the pattern set by our fathers and grandfathers; and that therefore on the basis of eating habits alone, diabetes must certainly be associated with various families. In 2,000 consecutive Natal Indian diabetics, I found a family history in 43%, and when one takes those who remember whether their grandparents had diabetes or not, the figure is negligible.

I and my co-workers showed at the 1967 Stockholm Congress on Diabetes that when very careful studies are done on connubial diabetic pairs (i.e. husband and wife diabetics), and their progeny (such as our recent U.S. Public Health Diabetes Study Project), the children of such parents were no more likely to get the disease, than sex and aged-matched, control people.

Since then in a study using the synalbumin method of Dr. Vallance Owen on blood specimens from parents and 37 children of five connubial diabetic matings, we have now clearly shown that diabetes or its predisposition is inherited in a simple purely dominant manner, if we consider D.D. to be a lethal combination. Taking the two studies as the latest significant studies on diabetes genetics, let us presume that the effect of inheritance on diabetes emergence is probably limited.

Therefore, if we can regard effects of heredity as being minimal in these urban-dwelling non-White people in Durban, in the study of the effects of environment we can proceed with a fairly clear conscience to study the incidence of diabetes in various groups.

The word *incidence* is one that has been more abused in the diabetic context than any other. Some years ago I examined studies on the frequency of diabetes in Asia and Africa, using the standards that we employ in this country. I found that apart from local incidence studies, there was not a single one worth commenting upon. Last year in Stockholm in the plenary session on Epidemiology of Diabetes in the World, I was entrusted with the continent of Africa. This was a simple matter: according to our criteria, there were only four studies that could be discussed: two done in Cape Town by Professor Jackson and his team, and two done by myself and my co-workers in Pretoria and on the Natal North Coast.

The matter of incidence is further complicated by the penetrance to which I have referred above - i.e. the emergence of a disease with age. I was the first to advance, in 1959, the concept of there possibly being an 'incubation' period of exposure to urban nutritional environment, before a particular disease might make itself manifest. Thus in a group of middle-aged Zulu diabetics, 32 - 65 years, it was remarkable how more than 55% of them had lived in Durban continuously for between 16 and 23 years before getting diabetes. Because the peak of duration of exposure was at 20 years, I suggested the 'Rule of 20 Years'. This rule has been confirmed in respect of diabetes by Dr. Cohen in Jerusalem and Dr. Albertssen in Iceland. The concept has been extended by Dr. Cohen to the emergence of coronary thrombosis in his study of the Yemeni or 'Black' Jews. Moving from rural areas in Yemen to Israeli towns, Albertssen's 'rule' is one of 15 years; Cohen's diabetes 'rule' is over 20 years; and his rule for coronary thrombosis is 25 years. At present we are actively engaged in a study of the emergence of diverticulitis (at last being elevated to its true role as a disease of the urban environment), and there would appear to be an even longer duration of exposure before this disease emerges.

It is fair to say that most informed observers now agree that diabetes is common in urban dwellers and rare in country dwellers. As diabetes is the classical example of the effects of eating on the human race, how then do the diets of rural and urban dwellers differ?

I would like to summarise findings in my comparisons between: (a) studies on Zulus undertaken in Durban and rural Zululand; (b) studies of diets for Indians in the rural areas of India whence our working-class Indian people come, and studies we have conducted in Durban; and (c) a large number of dietary studies abstracted by Cleave and myself in 70 racial groups, in 40 different countries:-

- (i) By and large caloric intake is higher in urban dwellers than in peasants. This is not true in the average urban Zulu, but it is true when we compare the Indian in India and his cousin in Natal.
- (ii) Generally there is a remarkable similarity in the intake of carbohydrate as adjudged by caloric intake in the two groups, but the most important difference is that by far the largest amount of cereal carbohydrate eaten by the rural dwellers is in home-ground or home-pounded form. Refined cereal foods are eminently accessible to town dwellers. I might add, that this picture is changing rapidly and has changed in the last five years with the determined efforts to stimulate sales of sugar in the rural areas. The rising amounts of refined carbohydrates being now eaten in the peasant areas has been amply documented by Stott in his epic work in the Valley Trust at Botha's Hill - an important study on the early impact of urban eating habits on country-dwellers not far from the towns.
- (iii) Differences in protein intake depend very much in the degree of cattle farming in any rural area, and on the whole peasant people do not kill their beasts, but live on milk and milk products.
- (iv) Fat intake is enhanced in the towns nowadays, chiefly by the widespread use of the cooking oils; though with the use of dairy products in rural areas, fat intake is not much smaller.
- (v) Thus by far the most important differences between the rural and urban diets are in the quality of the staple carbohydrate foods - refined in the towns, and unrefined in the country.

Lately a fascinating report has come from Nqutu in Natal where due to Government policy, a considerable number of previously urbanised people have been moved from town into this rural area. They have brought with them their eating habits, and there has been a sudden striking change in the spectrum of disease seen in the local hospital. Reminding you of my remarks about the dynamism of changes in diet today, I must reiterate that intake of refined carbohydrate before the sugar price increased was rising rapidly in the rural areas, both in the form of direct and indirect use of sugar, and also in the important increase in con-

sumption of alcohol, (which by virtue of a special enzyme in the body, leads it to be handled in the same way as carbohydrates). Thus health or disease patterns are bound to change and with the spread of industry into the rural areas, careful studies cannot but bring to light further highly interesting changes.

Those that have studied nutrition will admit that there are few industries in this country and indeed in the world which have made such careful studies of per caput annual intake of their commodity as has the sugar industry. Sugar intake is very much higher in towns than in the country. Thus it has been tempting to try to equate the intake of sugar with commonness or uncommonness of diabetes in any racial group. In 1963, with the aid of the Year Book of the International Sugar Association - (a book without which no nutritionist can afford to work) - I found that when equating sugar intake in any racial group within which diabetes was 'common' that the racial per caput intake exceeded 70 lbs. per head per annum. In those groups where the incidence of diabetes was described as 'uncommon', the per caput intake of sugar was less than this figure. It was as if, on the basis of Professor Tulloch's work upon topical diabetes, a line could be drawn at 70 lbs. per annum intake of sugar, differentiating the countries with 'common' from those with 'uncommon' diabetes.

However, things are palpably different upon smaller scales, as we detected about three years ago in our diabetes incidence studies in various economic groups. We found that diabetes incidence, especially in the poorer social groups, seemed to be more closely related to *total* intake of refined carbohydrate, (that is chiefly sugar *and* white bread), than to the intake of sugar alone. This was entirely to be expected in people in whom taste is a secondary consideration to the filling capacity of carbohydrate foods such as bread, (which forms by far the largest part of the diet of working class people in urban or quasi-urban dwellers).

A further interesting result of our comparisons was that no matter how low caloric intake might be in people with 'common' diabetes, an invariable feature of the diets concerned was that intake of sugar exceeded 10% of the total caloric intake. This study was undertaken specifically on the grounds of the fact that the highest incidence of diabetes in the world is amongst the Pima Indians in Arizona, in whom caloric intake is only 2,300 per day. This finding was extended to other groups, especially the Zulus, in whom average caloric intake in rural areas exceeds that of the urban dwellers in whom diabetes is seen far more commonly than in rural people.

Though I have limited my remarks chiefly to the syndrome of diabetes, it is common knowledge that there are a number of diseases loosely known as 'the diseases of civilisation', but which might more accurately be called the 'diseases of urbanisation'. Of these of paramount importance is obesity, or overweight, the extent of which in the non-White townships, in the urban Zulu, now exceeds that seen in the New World, more particularly in the females. Other important urban diseases linked with overnutrition are coronary thrombosis and gout. Certain of the infective disorders such as appendicitis, gall bladder disease, and infections of the urinary tract are almost exclusively urban disorders. Dental disease is the example par excellence: in Northern Natal, the dentists there tell me the quickest way to find out if a Zulu has been to the mines is to tell him to open his mouth, and the rotting teeth are eloquent evidence of residence in the urban areas. Peptic ulcer is extremely uncommon in all races in rural areas and today, for instance, in the towns, this condition afflicts something like 10% of the whole population. In this context, in the East, and especially in India, the prevalence of peptic ulcer can be numerically correlated with the degree of stripping of their staple cereal foods - the greater the stripping percentage, the greater the incidence of peptic ulcer.

It is widely held that refined carbohydrate, and especially sugar, has a mild sedative effect; more and more people are turning to eating refined carbohydrate for solace. It is almost, as I have said before, that 'sugar has become the opium of the people', and like the older 'opium' religion, only very powerful forces can in any way affect its status. Unfortunately as I have said above, the filling effects of foods are the most important to poor people, and when these are cheap, there is neither incentive nor the means to buy anything else.

To sum up, nutrition has a marked effect upon the emergence of what might be called the 'diseases of civilisation'; but which I prefer to call 'diseases of urbanisation'. There are marked differences in disease patterns between peoples of identical ethnic stock living in rural areas and in those that live in the towns. These are associated with what is by and large a constant spectrum of difference, more particularly in the quality but also in the quantity, of diet (as adjudged by caloric intake), between urban and rural people. The study of emergence of disease in the American Negroes who have moved into the cities, have shown a disease pattern (chiefly in Chicago) that I have no hesitation in predicting will follow in our urban-dwelling Bantu people in this country. Should per caput intake of food increase in India, and should there be the same availability of refined foods in that country as there is here, I would have no hesitation in predicting that the same spectrum of disease can be expected in India as we are experiencing in Natal. This is not likely at present, for instance, when sugar intake in the Indian in Natal is 106 lbs per annum, (a slight fall recently), and that in India is 11 lbs. India may have a long way to go, but Natal has not.

In my invitation Honeyman Gillespie Lecture at the University of Edinburgh in 1966, I suggested that by far the most important investigation that should be done on Indian and Pakistani immigrants into Britain, after the chest X-ray, was a glucose tolerance test to assess the actual incidence of diabetes in these immigrants, and that such tests should be repeated annually with the chest X-ray, to assess exactly the effects of sudden and rapid rises in eating and living standards. This could be one of the most valuable studies ever done, but no-one has taken up this suggestion.

In conclusion, what is the answer to all this? To put questions without giving any answer is purposeless - but is there in fact an answer?

The lesson we must learn from epidemiological studies undertaken first by myself in regard to Indians and Zulus in the urban area of Durban, and later extended by Cleave and myself to cover about 70 racial groups in about 40 countries, is that the greatest threat to the health and longevity of urban man, of whatever race, is the misuse of carbohydrates. It is my unalterable rule when treating patients to advise them to eat the type of unrefined food their ancestors ate - if we did this, then we would enjoy better health than we do.

Diabetes Study Project,
Durban.

DISCUSSION ON THE SECTION

'URBAN MAN - HEALTH ASPECTS'

The discussion proceeded paper by paper, commencing with Dr. Campbell's paper, as the author was not able to stay for the full discussion. Dr. S. J. Powell of the Institute for Parasitology at the University of Natal, Durban, formally opened the discussion. He commented that Dr. Campbell was very well known for the work he had put into the subject with which his paper was concerned. In his view what Dr. Campbell had really said was that the urban diet (which is predominantly that of refined carbohydrates), is producing a different disease pattern in the African and Indian from their rural pattern, and that one of the diseases the urban African and Indian gets on this diet is diabetes.

The question of a high intake of sugar causing a high incidence of diabetes was controversial, and recently work done in the Caribbean had shown a very high intake of sugar was not related to an unduly high incidence of diabetes. Dr. Powell asked Dr. Campbell to explain this point, and to indicate why there was controversy in the matter.

Dr. Powell also remarked that in the paper, obesity was mentioned as a disease of urbanisation - or urban diet. He agreed entirely that the African female was obese, but queried whether it was true that African obesity is an important condition in the African urban male.

Dr. C. R. McKenzie, Medical Officer of Health for Durban, put a question to Dr. Campbell, as to the possible link between diabetes and soft drinks.

Dr. Campbell replied in some detail. Dr. King and his co-workers in the Caribbean had found a significant incidence of diabetes in the very low income groups, which had a low intake of sugar. In about 1966 Dr. Campbell and his colleagues had found 'quite a significant incidence' of diabetes amongst the low 'working class' Indians, where again 'they took very much the same - a little more - sugar than the 36 lbs per head per annum quoted by King'. In the village of Tongaat, near Durban, the Indian workers had a sugar intake of about 47 lbs per annum, but the important point was that they made up their refined carbohydrate intake with white bread. This is exactly what King had reported in his paper on the Caribbean. Dr. Campbell re-emphasised that the poor worry about filling foods, and these foods were in urban areas, refined carbohydrates.

In regard to obesity, Dr. Campbell admitted that the Diabetic Clinic does not see grossly fat Zulu males; nor did he feel that they saw many fat Zulu males, but the women that they see in the clinic are grossly in excess of the weight of women revealed by a Canadian study.

In regard to the query about the relationship between soft drinks and diabetes, Dr. Campbell replied that this was an aspect that had not been studied.

On the paper by Miss Moodie and her colleagues, Dr. Powell introduced the discussion by saying that their work was of international status, and the paper they had presented at the conference came fully up to the standard of their many contributions. He felt that the paper was a study more of the urban background to malnutrition in children of under-privileged families, and the relationships of malnutrition to child health, than a study in preventative medicine. He was particularly interested in the account of malnutrition and its effect on morbidity and mortality of infections. 'I think we must accept this as an established fact in children, but we must certainly beware of pushing this (conclusion) too far in adults ...' Referring to a recent symposium on nutrition and infection, Dr. Powell felt that after reading such papers 'one is certainly left with the impression that although infection undoubtedly affects nutrition, it is quite hard to find much evidence in adults of nutrition affecting the severity of infection, and I have a fairly open mind about this point'. Continuing, he went on 'with regard to the other section of the paper which is concerned with the causes and background of malnutrition, I think that we must still accept the statement that the dominant cause is economic ... we know that other causes operate to a varying

degree in different communities - factors such as ignorance, customs and perhaps improvidence, but I certainly do not think that we should allow that knowledge to let us evade the unpleasant fact that our economy forces so many of these people to live below the poverty line - which is of course a remedial thing. In respect of family limitation, I think it is worth bearing in mind the saying that children are the one luxury that the poor can afford, because if you have nothing, you have nothing to lose; and if you do not have a fair chance to reach and maintain a standard, you will not learn providence, and this verily points out that this is not just a matter for public health officials - it is a matter for us all'. Finally, Dr. Powell asked Miss Moodie if she could comment on the effect of urbanisation on malnutrition. Is the problem of malnutrition in children or adults worse in cities than in rural areas? His impression was that it was worst in rural areas.

Replying, Miss Moodie stated that she could not answer the question in regard to the effect of malnutrition on adults, as they had not studied it. 'But the point that I think does sometimes escape us is that every adult is a survival of this terrific loss in childhood ...', and this must leave its mark on the adult constitution. In regard to malnutrition, she felt that while the greatest number of cases were concentrated in the cities, it does seem that the peri-urban and rural areas are producing more severe cases than the cities themselves. She felt that this reflected a variety of factors ranging from medical care being less easily available in the peri-urban and rural areas, to perhaps that the more ignorant and less ambitious Coloureds are prepared to stay on the farms and that some of the farmers have lost a sense of paternalistic responsibility for their labourers. She was also alarmed about the fact that sick people were often 'pushed' back from the towns, once they could not work, into the rural Reserves, and agreed with Dr. Powell on this point.

Dr. McKenzie asked about the extent to which family planning is catching on among the Coloureds in the Western Cape. Miss Moodie felt that it was spreading, but said that it is 'the more enlightened and higher educated ones who go first for it, and the others follow ... there is still a lot of prejudice amongst the fathers - I always wonder why they do not do more talking to fathers at their places of work ...'.

Finally, Dr. Powell opened a discussion on Mr. Snyman's paper. He felt that the first part of the paper dealt with the need for beauty in the environment, and the effect of this environment on health. He felt that this seemed very convincing and clearly stressed, but wanted to question whether ugliness in itself may not be a challenge? Good does sometimes come out of slums and the ugliness of industrial cities challenges man to do something about it. The problem in regard to beauty was who was to determine what was beautiful? In the second part of his paper Mr. Snyman considered planning and the provision of health care institutions. He outlined the idea of a hospital-centred health service and expressed the modern emphasis of the need for preventive medical care. Dr. Powell felt that preventive medicine remains very much the 'neglected orphan' of the medical profession. He thought it would be neglected as long as our economy, including our medicine, was based on the profit-making motive. It was very difficult for a doctor to make a living out of preventive medicine. A tremendous amount of money was put into, for example, transplant surgery which was patching up rather than prevention. It was difficult to get people to put money into organisations to provide half-a-cup of milk a day for children to prevent kwashiorkor, whereas they would give freely to spectacular transplant schemes. Dr. Powell went on to say that Mr. Snyman pointed out the faults in the planning of health services in relation to the needs of the community. He felt that he could not agree more with the idea that the hospital is all too often an isolated unit associated with prestige or political value rather than one unit integrated into a wider range of health services. Hospitals all too often were located where the land was cheap rather than because of the importance of location. (This was all too often true of the location of government facilities of various types). In regard to the accessibility of hospitals as a factor determining the usage of hospitals, Dr. Powell felt that other factors might sometimes override accessibility. He felt that the excellence of the hospital and the quality of the medical services provided was a very important factor - in Durban for example, Africans come from all over Natal to King Edward VIIth hospital,

by-passing one hospital after another, because they feel rightly or wrongly, that they get better services at King Edward than at the local hospital in their area. Finally, in regard to Mr. Snyman's point about the fragmented approach to the planning of hospitals, Dr. Powell stated that he would like to add a controversial note. He was suspicious of any kind of unified planning from Pretoria. This was because he suspected such a situation would land up with the medical and health services being directed by civil servants and politicians, and he wondered whether these were the groups who ought to lead in such matters. Also he was suspicious of uniformity - South Africa is a large country, and the needs in the different parts of the country differed considerably. For these reasons he suggested that while planning is desirable, standardisation of hospital services was not necessarily desirable - it could in fact be a danger.

Professor J.V.O. Reid joined the discussion. He felt that in South Africa we still have to learn to come to grips with the differing problems of rural disease and ill-health on the one hand and urban disease and ill-health on the other. There was a difference between these problems which we should take into account in our planning.

Replying, Mr. Snyman said that there was all too often a stigma attached to the word 'beauty' in environment, and planning for joy and sensibility was sorely lacking in our planning approach. This was for example epitomised by the townships developed for non-Whites. He agreed with the other points raised by Dr. Powell, except in regard to the question of unified planning. He felt some unification was necessary if only in regard to standards. For example, there was considerable difficulty in deciding on as simple a matter as the size of the bath for the patients in hospitals in each of the four different provinces. Certain types of standardisation in planning hospitals would not be detrimental, but would be advantageous. While there was a need to plan for individual variations in different parts of the country, a certain degree of uniformity was possible, and desirable.

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COMMUNITY DEVELOPMENT AND SERVICES

SOCIAL SERVICES IN THE MUNICIPAL
AFRICAN TOWNSHIPS : SALISBURY

P. Kriel

Salisbury

1. INTRODUCTION:

Approximately one half, i.e. 95,000 of the total African population of Greater Salisbury lives in Townships administered by the City of Salisbury's African Administration Department. These persons are accommodated in 11,327 family units (of which 878 are flats and 74 home-ownership houses), and 20,583 men and 166 women are accommodated in hostels. The remainder of the African population lives in Government or quasi-Government Townships, as well as in licensed private premises.

The Social Services Section of the African Administration Department is directly responsible for the provision and administration of social amenities in Council's Townships, and is charged with the task of stimulating interest and encouraging the active participation of the residents in the development of the community in the social, cultural, sporting and recreational spheres.

As in the Republic, these services are financed from liquor profits earned by Council's Liquor Undertaking, which exercises a benevolent monopoly in the African Townships. In the budget for the 1967/68 financial year £184,620 has been provided in the Revenue Estimates, and £58,250 in the Capital Estimates. It is to be noted that in Revenue alone this equates to approximately £2 per head of the population. Up to 1967 all liquor profits had to be spent on the provision of welfare and health services, but recent legislation (the African Beer (Amendment) Regulations, 1966 (No. 5)) makes it possible to use up to one third of liquor profits on low-cost housing.

The availability of large scale funds has contributed in no small manner to the development of a particular brand of social services in Rhodesia which, although basically the same as welfare and recreational services in the Republic, do differ quite distinctly in some respects. In order to illustrate to you some of the similarities and differences I shall briefly outline to you the scope and organisation of Social Services in the Municipal Townships of Salisbury.

2. GROUP WORK:

Much emphasis has always been laid on the importance of group work and the Administration is actively engaged in sponsoring boys', girls' and women's clubs. This is done through the provision of clubrooms based on the Social Centres and by means of other facilities in the various areas of the Townships. These clubrooms are supervised by trained full-time staff and open to the public all day, seven days a week.

At each Social Centre an attempt is made to provide facilities for pre-school children, boys', girls' and women's groups. This is not always possible, and Centres vary from two small clubrooms to elaborate youth centres which incorporate clubrooms, gymnasias, tuck shops, barbers' shops and offices, to small multi-purpose halls which can be sub-divided. Of necessity, some use is also made of the ante-rooms in our public halls and other suitably adapted buildings for group activities.

Where possible these Centres are situated in the immediate vicinity of sports grounds because recreation forms an integral part of group work. This may sound strange to you, but it should be borne in mind that in Salisbury's African Townships, Government Schools (as distinct from mission schools) were only established after the second world war and, until recently, these schools

provided little or nothing in the way of sport, and even at this stage our youth centres largely retain the initiative in this field. Additionally, it should be borne in mind that school attendance is not as high as in South Africa and the 'hot seat' system is in operation in very many schools¹). It may be noted in passing that we, in Rhodesia, are faced with a population growth which is higher than that in Latin America in a country where already 50% of the population is under the age of 16 years.

Much of our effort in Salisbury has been directed towards the boys and youths of Council's Townships, and it has been the Administration's aim to provide facilities and organised activity on sufficiently massive a scale to direct the energies and enthusiasm of this volatile sector into healthy and constructive pursuits.

Club activities embrace participation in sport (football, hockey, tennis, swimming, badminton, table tennis, tennisette, tenniquoits, deck quoits, weight-lifting), organised outings to places of interest, camping, indoor board games and various hobbies. Club funds are raised mainly through organised dances to which admission fees are charged. (At a New Year's Eve Dance this year (1968), £100 was taken). These funds are used to pay for outings, swimming tickets, repairs to musical instruments, transport and school bursaries. Club sports teams travel widely, mostly by bus and train, visiting places as far afield as Umtali and Bulawayo during long weekends.

In the provision of youth services it has been necessary to cater for quantity rather than quality, but as more funds become available and more basic amenities are provided the time draws near when superficial needs will be met and then it will be possible, through the application of advanced group work techniques, to provide services in depth.

Registered membership of boys' and youth clubs last year (1967) totalled 2,233, but as all facilities are made available to non-registered members, these facilities are in fact used by many times that number of boys. Only registered members are allowed to participate in club affairs and special activities organised by the clubs. Transport for local trips and educational tours is made available to the clubs.

Girls' clubs are organised on much the same basis as boys' clubs and their activities are very similar. Girls' clubs share in all fund-raising activities. Basic equipment is provided for these clubs but they have to meet their own running expenses and themselves provide any necessary ingredients (cooking) and materials (sewing) used in club work. Girls have sewing, knitting, cookery, painting, dancing, tribal dancing, flower arrangement and dyeing, added to their club programme. Registered membership last year (1967) totalled 886, but as explained previously, this is not a true reflection of the usage which is made of the available facilities.

There is some doubt in my mind as to whether the Administration will be able to continue in the long-term with present social service policies, particularly once the schools start playing a larger part in the junior cultural and sporting affairs of the Township.

Turning to adult activities for a moment, it is of interest that the present women's club system goes back at least 25 years, as a consequence of which some gratifying results have been achieved. Originally, all women's clubs were organised by staff members who actually controlled and directed the day-to-day operation of the clubs, but then gradually control of each club passed into the hands of an elected executive. Today some of these clubs have reached a degree

1) This system involves a school operating on a 'shift' system, so that when one set of children go home for the day, another come to school and use the same rooms and equipment. Usually there are two 'shifts' a day. - (Ed.)

of sophistication which is outstanding. One such club organised a rail trip to Beira for its members three years ago. The same club operates an annual catering stand at the Royal Salisbury Agricultural Show where its members provide hundreds of meals every day for African workers and visitors to the Show. Last year (1967) they increased their profit by £150 and that, without any assistance from the staff of the Administration.

As with boys' and girls' clubs, accommodation and basic equipment is made available to all women's clubs, but they have to meet their own running expenses. Facilities include two domestic science centres fully equipped with stoves, washing machines, sewing machines and the like. Specialist staff is available to instruct members in dressmaking (from basic sewing to design stage), and in cookery, from beginner to advanced level. Activities include sewing, cookery, gardening, (following an intensive gardening project developed by the Henderson Research Station on one-twentieth of an acre), crochet, knitting, tribal dancing, dyeing, and netball. In some of the smaller Centres maximum utilisation of club premises is obtained by allocating morning sessions to pre-school children, and afternoon sessions to girls' clubs and women's clubs alternately.

In the field of fostering women's activities much work has been done by European women's organisations who run affiliated clubs in the Townships on a voluntary basis. Under the guidance of trained staff numbers of these voluntary organisations are doing extremely valuable work.

Social clubs as such are almost non-existent amongst adult men, but groups with a particular interest do form themselves into clubs. To forward this process it is the general policy to conceive or commence a group project which is then given advice and guidance but, once it is operating satisfactorily, to withdraw completely to give its committee the opportunity of managing its own affairs. Bodies which are at present operating without assistance from the Social Services staff include the Salisbury and District Football Association and the Lawn Tennis Association. As a matter of policy no staff members are allowed to serve on the committees of these clubs and Associations.

3. PLAY CENTRES AND SUBSIDISED FEEDING FOR PRE-SCHOOL GROUPS:

Because the Administration supports the belief that an inadequate diet and a lack of appropriate visual and manual stimulation in the pre-school child has a lasting curbing influence on the ability of the child, much is done to educate parents as to the value of high protein foods, and they are encouraged to send their young children to Council's Play Centres and Full-Day-Care Centres (creche) which are attached to most Social Centres.

At play centres any child of pre-school age who has been registered, can attend during weekdays at any time from 8.00 a.m. to 12.00 noon and will be cared for by trained staff. Supplementary feeding, which consists of half a pint of fresh skimmed milk and two slices of brown bread, is provided at a subsidised cost of one penny. Activities at such Centres include games, short local bus trips, painting, singing, clay modelling, cutting and free play.

Children at Full-Day-Care Centres receive a properly balanced diet at an inclusive fee of 4/6d. per month. Entry to such Centres is restricted to the children of working mothers; other young children can be catered for at Play Centres.

4. WELFARE:

Welfare legislation in Rhodesia is very similar to that in South Africa.

Welfare proper and poor relief are Government functions and the Administration is not directly concerned with case work. All voluntary organisations operating in Council's Townships are grant-aided from liquor profits. It may be noted that many of the voluntary organisations in Rhodesia have been in existence much longer than the Government Department of Social Welfare.

Africans are increasingly taking a keen interest in doing voluntary welfare work amongst their own people. The Jairos Jiri Association for the Rehabilitation

of the Disabled and Blind, which operates on a national basis and is the only organisation of its kind in Rhodesia, is run by Africans for Africans. This body enjoys Government assistance and its Salisbury Centre is grant-aided from liquor profits. Similarly, the Benevolent Helping Hand Association, which operates a hostel for destitute women and children in one of Council's Townships and is basically an African organisation, is grant-aided.

5. EDUCATION:

The Municipality is not involved in formal academic education, but in the wider sphere adult literacy, health talks, educational type films and demonstrations form part of club programmes. An existing carpentry workshop which provides basic tuition to adults is to become a Vocational Training Centre.

Libraries are also provided from liquor profits, but this sphere of activity is very much in its infancy, and consequently the initial emphasis is directed towards 'reference' libraries as opposed to a reading and lending library.

6. CULTURAL AND ENTERTAINMENT:

The provision of these services does not differ materially from those in the Republic, although they are not as sophisticated.

By and large the social services section is not required to take an active part in the promotion of adult male activities except in the single men's hostels. These hostels consist of 48 blocks of three-storey buildings, and the 21,000 (approximately) inhabitants therein present a particularly challenging problem. A large percentage of these working men are migratory, either from custom or due to the demands of their work. For a high proportion of the men in the hostels life is unnatural and unsatisfactory because they are in fact married.

It is essential, therefore, that the Administration should take a direct interest in their leisure time, and consequently trained musicians and sports instructors have been appointed to organise social, cultural and sporting activities.

Large recreation halls exist in the various hostel blocks, some of which have been turned into T.V. viewing halls, reading halls, music halls, boxing and weight-lifting gymnasias or general recreation halls.

Tribal dancing groups, voice and instrumental groups have been formed, contacted and encouraged, and activities culminate in an annual Music Festival which is held in the Council's largest African Township, Harari, and is not restricted to hostel residents. In the Festival sections are provided for tribal dancing, ballroom dancing, jazz bands, solos, duets, quartets, male voice, female voice and mixed voice choirs.

7. PUBLIC HALLS:

There are four public halls in the Council's three Townships, which are used for film shows, dances, concerts, wedding receptions, beauty contests, meetings, weight-lifting competitions and variety shows. These halls are regularly booked by amateur and professional groups, but approved amateur groups pay considerably lower hire fees than do professional groups. Good touring musical shows from South Africa are very popular, and musicals such as 'Sikalo' have played to capacity crowds.

8. SPORT:

Here too the position is very similar to that in the Republic. The Administration provides basic facilities only, and the various bodies are required to provide their own equipment and organisation.

At present only one large multi-purpose stadium exists, which is used for professional and amateur boxing and football, and also for tribal dancing displays and cycling. Hire fees vary from £2.10.0 for local amateur clubs to £50

for professional boxing promoters. Gate takings for a single professional boxing tournament have exceeded £1,000, and the finances of the well-administered clubs are sound.

Football is far and away the most popular sport. As it is played for 12 months a year, the introduction and promotion of any other sport except boxing, is an uphill struggle. Strong weightlifting clubs have, however, been formed and Africans hold several Rhodesian records.

Athletics is becoming increasingly popular, particularly since the recent completion of an Athletics Stadium, which incorporates a track up to Olympic standards.

Netball is to girls what football is to boys.

Hockey, basketball and tennis are also played, and swimming is extremely popular. Table tennis is an evergreen favourite among indoor games.

For the administration of sport and welfare an office block has been provided where such bodies and organisations may rent offices at subsidised rentals.

The organisation of sport varies from one sport to another, and differs basically from South Africa in that it is multi-racial at certain levels. In football for instance there are European leagues, multi-racial leagues and African leagues, but all these leagues are controlled by a single national body.

In the Townships professional multi-racial football is rapidly replacing amateur football as a spectator sport. Some teams in this league are all African, some are mixed and there is one European team.

9. HEALTH SERVICES:

Male and female dispensaries, ante- and post-natal clinics, an infectious diseases hospital, tuberculosis wards and confinement centres are operated by the City Council's Health Department, and the cost of the operation is generally borne from liquor profits as well as a certain amount of financial assistance from the Government.

In conclusion I hope that in this review of 'Social Services in the Municipal African Townships, Salisbury', I have not given you an impression of complacency, for this is not my intention, nor is it the position. The Administration is faced with many problems, not the least of which are the population explosion and the political situation, and in neither case can one foresee a ready solution. Future planning in the field of social services is, therefore, subject to many imponderables.

A D D E N D U M

DETAILS OF SOCIAL SERVICE FACILITIES IN
MUNICIPAL AFRICAN TOWNSHIPS, SALISBURY:
(excluding facilities at schools)

I. PUBLIC HALLS:

1. Stodart Hall, Harari: seating capacity 758 with ante rooms.
2. Mai Musodzi Hall, Harari: seating capacity 272 with ante rooms.
3. Rufaro Hall, Mabvuku: seating capacity 350 with ante rooms.
4. Rutendo Hall, Mufakose: seating capacity 320 with ante rooms.

II. SOCIAL SERVICES CENTRES:

1. Harari Township: 5,564 housing units, 878 flatlets, 74 home-ownership houses, 47 bachelor flats, 20,583 beds in 48 single men's hostels, and 166 beds in single women's residence.
 - (i) Community Centre, Stodart Hall: In addition to the Hall, play-grounds and sports grounds complex there are the following buildings:
 - (a) Four boys' and youths' clubrooms.
 - (b) One gymnasium, properly equipped with all modern equipment, change rooms, hot and cold water showers.
 - (c) Modern reference library.
 - (d) Office block for welfare organisations and sporting bodies.
 - (e) Domestic science hall equipped with modern appliances.
 - (f) Full-Day-Care Centre - (creche).
 - (ii) Mai Musodzi Hall: Outbuildings attached to the Hall accommodate boys' and youths' clubs.
 - (iii) Farayi Centre: Old buildings converted to accommodate a pre-school group and girls' and women's clubs. Also contains the new Vocational Training Centre.
 - (iv) Flats Centre: Consists of:-
 - (a) Full-Day-Care Centre.
 - (b) Small multi-purpose hall which accommodates a pre-school group, girls' and women's clubs.
 - (c) Arts and Crafts Centre which has only been established very recently and is occupied by a group of soapstone carvers.
 - (v) Beatrice Road Cottages Centre: Old Post Office building converted to accommodate a pre-school group and girls' and women's clubs.
 - (vi) Chinembiri Youth Centre: Consists of a boys' hall, girls' hall and rooms, gymnasium, office block, tuck shop and barber shop.
 - (vii) Recreation Halls (34), in the single men's hostels.
2. Mabvuku Township: 1,268 houses.
 - (i) Converted hall accommodation for a pre-school group and boys' and girls' clubs.
 - (ii) Converted house accommodates women's clubs.
 - (iii) Two clubrooms used by boys and youths.

3. Mufakose Township: 3,543 houses.

- (i) Munomotapa Centre established in Rutendo Hall; ante rooms provide for a pre-school group, boys' club and women's club.
- (ii) Chaminuka Centre consists of a small multi-purpose hall which can be sub-divided and provides for a pre-school group, boys', girls' and women's clubs.
- (iii) Area 'E' Centre provides for a pre-school group and boys', girls' and women's clubs.
- (iv) Area 'H' Centre provides for a pre-school group, boys', girls' and women's clubs.

III. SPORTS FACILITIES:

1. <u>Type of Facility:</u>	T O W N S H I P S		
	<u>Harari</u>	<u>Mabvuku</u>	<u>Mufakose</u>
Multi-purpose stadium - (includes grandstand, which seats 2000, with change rooms, cafeteria, stores and first aid room and concrete cycle track). Seating capacity 20,000.	1	-	-
Fenced soccer grounds -	1	1	1
Athletics stadium -	1	-	-
Athletics tracks - earth -	-	1	1
Swimming pool - includes a paddlers pool, learner's pool, olympic standard swimming pool and a separate diving well with high and low diving boards.	1	-	-
Boxing arena (paid entry to ringside seats, standing space free of charge) -	1	-	-
Open-air boxing rings -	-	1	1
Gymnasia	2	-	-
Football grounds (in addition to above)	11	2	4
Miniature football grounds (children) -	9	6	4
Netball courts -	27	6	6
Hockey grounds -	2	1	2
Badminton courts -	3	-	-
Tennis courts -	6	2	4
Skittle alleys -	2	1	-
Children's playgrounds (equipped with swings, slides, see-saws, etc.)	7	3	4
Tennisette courts -	5	2	5
Tenniquoit courts -	-	-	2
Buses -	1	-	1
Boxing gymnasia -	4	-	-
Weightlifting gymnasia -	2	-	-
Basketball courts -	6	1	2

IV. ATTENDANCE FIGURES, ETC.:1. Youth Centres:

Boys and Youths	16,500 per month
Girls	16,100 per month

2. Pre-School Children:

Full-Day-Care Centres	200 per day
Play Centres	800 per day

3. Public Halls: 1966/67:

Film shows	808
Dances	196
Concerts	31
Wedding receptions	9
Meetings	9
Music festivals	2
Beauty contests	1
Weightlifting contests	7
Religious rally	1
Yo-Yo competition	3
Magicians' show	1
Social reception	1
Demonstrations	3

Total attendance: 1966/67 = 240,839

- | | |
|---|-------------------------------|
| 4. George Hartley swimming pool | 102,173 |
| 5. Harari stadium | 63,798 |
| 6. Amateur Football Clubs | 165 |
| 7. Professional Football clubs | 2 |
| 8. Amateur Boxing: | |
| Average attendance on Saturdays - | 5,000 approximately |
| Average attendance on Sundays - | 10,000 approximately |
| 9. Library | 3,000 approximately per month |
| 10. Industrial soccer league | 42 clubs |
| 11. African Professional Boxing Promoters - | 2 |

V. PAID-UP MEMBERSHIP FIGURES:

- | | |
|---|-------|
| 1. <u>Youth:</u> Boys as at end of April, | |
| 1968 - | 1,436 |
| Girls as at end of April 1968 | 1,285 |
| 2. Weightlifting Clubs - (5) | 140 |

VI. STAFF:

Senior administrative	7
African 'grass roots' workers	70
Carpenters and welders, and builders (instructors)	3
Part-time Librarian (qualified)	1
Assistant Librarian	1
Musical Instructors	2

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RETAILING SERVICES IN NON-WHITE TOWNSHIPS
IN SOUTH AFRICA

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My theme is a simple one, and my purpose is to stimulate interest in and study of an aspect of city life that is, I believe, wholly neglected. This paper does not aim at presenting results of completed research, or formulating specific proposals.

1. The Significance of Retailing in Consumers' Expenditure:

First it is necessary to point out that distribution costs are high for almost all kinds of commodities. The sense of surprise, even of outrage, that accompanies most revelations that the producer, for his physically productive services alone, usually receives less than half of what the consumer pays is quite misplaced, and contrary to the satisfactory established facts of economic life. The economic effort of packaging, of transporting through space, of holding through time, of bearing the costs and losses of deterioration both in physical condition and in saleable value, of informing and displaying to the customer, of financing the handling of goods over time, and of the provision of minor distribution services that customers need, is great. It therefore comes as no surprise to those interested in this field when successive surveys have established that the economic costs of these usually exceed those of simple physical production.

Measurement in this field is not easy and is seldom satisfactory, because it is almost always impossible to isolate satisfactorily what are the selling costs, and what the production costs of any single producer are. The general outcome of a great number of investigations does establish that distribution cost of goods from production to consumption is no less significant than basic physical production costs.

The essential point is that improvements in distribution are of considerable significance to the standard of living of consumers, although they receive little consideration in most discussions. For example, activity in aiding efficiency of the production side of industry, both in the application of scientific knowledge and the propagation of organisational and managerial techniques, is officially supported and fairly generously endowed. By contrast, hardly any attention has been devoted to efficiency in distribution, although it must be mentioned that the recent Board of Trade and Industries report on Retail Price Maintenance (R.P.M.), is an important exception to this.

Recent improvements and reforms in distribution overseas have reduced general costs to consumers in a wide range of goods, particularly foodstuffs, by amounts ranging between 10% and 15%, and by even greater amounts in Sweden following upon the abolition of R.P.M. there. Particularly for the lower income groups, this is a gain of considerable significance.

2. The Essential Features of Efficiency in Retailing:

It is necessary to discuss briefly the characteristics of economic competition in the retailing of goods. This part of the discussion must, of needs, be extremely compressed and will be put somewhat dogmatically.

The first point is that the mere multiplicity of many retail shops in close proximity, which gives all the appearance of active competition, is, in almost all cases, unlikely to produce the normal beneficial results attributed to competition. Such retail units, generally, are likely to be very alike in the type of person running them, in the capital resources available to them and in the business

horizons their proprietors possess. The typical small trader is invariably small in all these aspects, and is unlikely to endeavour, except under extreme pressure, to create for himself a completely new business attitude and an environment in which to operate.

The economic result of this situation is that the retailers' costs, which tend to be alike, determine their prices, and if these costs rise, (which frequently happens when further rival shops enter the scene and the turnover of all decreases), then the prices of all will rise commensurately, and the consumer pays for the additional shops. This is one of the commonest examples of the so-called 'wastes of competition'. The obvious text-book solution is for one of these competitors to make a bid, by competitive price cutting, for an increased share of the market that will reduce his costs appropriately, and justify his cuts in price, but few typical retailers possess the confidence, the capital resources and the managerial ability to precipitate such a conflict. They have no reason to believe that it will be they, and not one of their reacting neighbours, who will emerge the victor. So 'live and let live' is the invariable policy.

When a retailer enjoys a secure geographical territory, into which rivals cannot come freely, it is pointless for him to cut prices. As his customers are secure to him, it is unlikely that total value of his sales will increase if prices are lower. More likely, if he is permitted to do it in terms of R.P.M. contracts or price control, he will tend to raise prices with advantages to himself. Strict licensing is likely to produce these effects.

Where R.P.M. operates, and the retailer cannot name his own price, the shops that have the lower costs use the difference to pay for the service that attracts customers. This in turn creates the larger turnover that permits the lower costs, and still more service. In these circumstances, the consumers get more for their money - the services offered - but this is a tied sale - they may well have preferred lower prices (which means more goods) to the services, but they are denied the choice.

Where the retailer is protected from competition, he will charge the high maintained price without giving the service - his volume of turnover is fixed by the population within his area of monopoly.

From what has been said above, it is apparent that the competitive forces in retailing do not lie in competition between shops of like kind so much as between shops of diverse kind, and particularly from the kind of shop that is prepared to exploit the undoubted economics of scale that exist in retailing. This demands that there must be entrepreneurs in retailing:-

- (i) capable of managing large-scale organisations;
- (ii) possessed of the large amounts of capital needed;
- (iii) skilled in making contact with producers to ensure a constant supply of 'special purchases'; and
- (iv) located at points where sufficient consumers can visit a low-service store without the inconvenience of location overwhelming the gains from cheaper prices.

All these prerequisites are necessary to produce the reductions in cost in distribution that are possible, and which have occurred spectacularly in most developed countries in the post-war period.

It is certainly true that many single-proprietor retailers have reacted with revised business methods that have enabled them to live with the reduced prices the mass-retailers have forced, and that these methods demand considerable sacrifice of autonomy by the retailer and co-operation with a centralised buyer. Also necessary is the existence of high-level managerial skill at the level of the centralised buyer, who is usually an enterprising wholesaler fighting to maintain his existence. But retailers, to benefit by this method, must be both co-operative and adaptable: i.e. capable of conducting their affairs in ways radically different from those characteristic of the traditional single-proprietor retailing units.

There is, of course, place for high service luxury shopping services for those that want these and are prepared to pay for them, but discussion of these is not relevant to the conditions or areas being considered.

3. The General Position of Non-White Consumers:

The position of the non-White consumer needs to be looked at briefly.

Firstly, he is confined almost entirely to the low income groups, although there is undoubtedly considerable growth in his total spending power.

Secondly, the doctrine of separate development is increasingly confining him to his own residential areas, which of course includes isolation for shopping purposes. This comes about as non-White transport routes increasingly by-pass the established shopping centres; as increased distance in over-crowded transport prevents the personal carriage of goods from established central shops; and as increasing pressure is brought upon shops in the centralised areas to discourage non-White customers from patronising them.

The immediate consequence of this is to deprive the non-White shopper from access to the shops where cheaper prices are to an increasing extent in South Africa, now becoming available. Yet it is the non-White shopper who most of all is seriously in need of whatever economies in distribution are available.

These benefits to the White population will increase in range when the abolition of R.P.M. (which now seems inevitable), becomes effective. However, this self-same abolition will also end an important element of price control that does protect purchasers at the traditional shops from those shops exploiting to their own advantage, their non-competitive or monopolistic positions. White shoppers will tend to reap the benefits of the abolition of R.P.M., and non-White shoppers will tend to incur the disadvantages.

4. The Position of Retail Facilities in Non-White Townships:

What can be said about the state of retail trading in the specially created non-White areas around our cities? No doubt these are thoroughly familiar to many of you and need no discussion. Focussing my attention particularly upon two areas in or near Durban - an African township Kwa Mashu, and an Indian township, Chatsworth - it can safely be said that, despite their very large size in population, the shopping facilities are of the most primitive kind. They are confined to simple general dealers' stores, butchers, and fresh produce dealers¹⁾. Within this range the shops themselves are small in size, extremely limited in convenience and range of service, and frequently (in the African area at any rate) hindered by largely absentee-ownership.

The smallness of the shops, the inadequacy of display and the lack of training of the assistants, greatly burden the customer in satisfying his wishes even within the stock range that the shops are carrying. This is both his loss and the owner's too. Added to this, inspection clearly establishes the great extent to which this kind of shop is burdened with slow-moving items that force the trader into high mark-ups that, in turn, further reduce the turnover of capital in trading.

There is no evidence at all that any concept of stock-control is appreciated, or of the fact that the percentage of mark-up is of little significance without reference to the rate of turnover achieved. Judging from the final accounts available, record-keeping is unsophisticated, and of little guide in directing attention to how and where customers can be better served to the trader's own advantage. By and large, the traders are not among the educated section of these communities, and certainly in the African section there appears very little hope

1) In African townships it is official policy to recommend only licenses for food shops and for a limited range of services.

of any early improvement in the costs of retailing through the development of entrepreneurs in retailing possessing the necessary qualification outlined earlier.

Let us look now at the particular difficulties that beset the development of cheap retailing services in these townships.

There is the absence of knowledge of the techniques of large-scale retail trading. This involves not only the concept that turnover is much more important than mark-up - (the most dramatic example of this in recent times is in the production of battery-reared chickens, with the vast expansion of output carried through when the poultry market, in the eyes of the traditional producers, was over supplied and controls on production were being actively sought) - but also skill and experience in operating a large-scale organisation and all it involves.

Persons who realise turnover is more important than mark-up undoubtedly can appear in any race group at any time - certainly a small number of Indian shopkeepers have already broken with the traditional methods of retailing to attempt mass retailing. However, mastery of operating a large-scale organisation depends very much upon experience within large organisations, and cannot at present be obtained without drawing initially upon the experience of European administrators, operating as salaried employees, or by non-White traders operating under the strict control, by means of contractual obligations, of an experienced mass-retailing firm. While in the present set-up these are not impossible, it certainly is not encouraged by the present circumstances in the new townships.

Whether in fact it will become possible to accumulate in townships knowledge of the techniques of large-scale retailing, can only be tested if and when the following obstacles can be overcome.

Relatively large capital is required for large-scale ventures, but there is no reason to believe that this is a serious barrier, even in the African townships. Wealthy men do exist, and instances of substantial investment are certainly known. The difficulties here hinge more upon the need for possession of capital and the possession of the special abilities required for revolutionary retailing methods, to coincide. The separation of the large investor from the active entrepreneur has not developed as yet in the emergent non-White business communities. Even in the sophisticated Indian business community, personal control of one's wealth is still prevalent - the decision-making executive who is not personally wealthy is almost non-existent.

A more serious barrier to any development of improved retailing services in the non-White townships is licensing policy. The over-riding considerations differ in the case of African and Indian townships, but essentially the aim in both is to favour the small independent trader, and to discourage any growth of multiple stores under single ownership.

In African townships, at any rate in Durban, the policy is to increase the number of shops rather than to concentrate them in larger units. If it appears to the authorities that another trader could be accommodated with a reasonable chance of making a living, the tendency is to recommend such a licence. The policy is well-intentioned, and sympathetic to African aspirations, but to divide the available turnover among the largest number of shops that the market will bear is, for reasons already mentioned, to move away from, and not towards, retailing efficiency and to reduce the standard of living of those destined to use such shops.

It is my experience that officials in Bantu Administration fear the development of multiple ownership lest monopoly and exploitation result. In this they have considerable justification, but no attention appears to be given at all to the question of whether creation of inefficient retailing units is not even more costly to the consumer. After all, ways can be devised of controlling efficient monopolies in the interests of the consumer - nothing can be done when only inefficient distribution exists.

On the Indian side, similar results obtain through licensing and building control, although the basic policy is somewhat different. Here the important consideration is to rehabilitate displaced traders, and every official endeavour is made, when new trading facilities are created, to re-establish a trader who has been displaced by Group Area expulsion. Again this is a policy that is well-intentioned and one that enjoys considerable support within the Indian communities concerned, but the consequences upon retailing efficiency and the costs of living are as described already.

Closely linked with licensing policy are the consequences of building policy within the non-White areas. Two points are relevant here. The first is that development has been section by section, with the result that, when shopping facilities are provided, they have been with the neighbourhood type of shop in mind. In most townships there are long-term plans for the development of a genuine civic centre, but these are for the future. Obviously these are the places for the larger shopping centres, provided they are the natural points of convergence to which intending customers will come in any case - e.g. on the journey to work or on a multiplicity of business so that the inconvenience of the journey does not outweigh the cheaper prices a large shop can provide. The second point is that efficient mass retailing involves a shop of considerable size, both to accommodate the high volume of traffic that permits economies of scale and to allow for self-service under conditions of adequate control - which also reduces costs as well as increasing customer convenience.

Where the authorities have constructed shops, they have inevitably been of the smallest possible size, totally prohibiting any development of scale that will permit economies. If the construction of premises depends upon the authorities, a revolutionary change of attitude is essential if adequate premises in which to develop large-scale - hence cheap - retailing services are to be made available.

In the African townships in Durban, the policy has developed of allowing traders to construct and extend, their own premises, and this has resulted in considerably larger shops than those officially constructed. In due course when the gifted entrepreneur does come along such a policy will provide the opportunity for mass retailing to get under way, and is to be highly commended on this ground.

Unfortunately, the central authorities are opposed to this kind of development and want the urban authority to construct and own all buildings, on the grounds that capital investment in the township will fix the African owner there, which is contrary to overall policy.

So far as the development of efficient retailing services is concerned, such central policy, both as regards the provision of buildings and the development of highly skilled entrepreneurs in mass retailing, is likely to be utterly disastrous.

On the Indian side, problems also exist. Little building of trading facilities by public authority has occurred. The authorities have recently approached the Indian business community to form a consortium to construct business premises in Chatsworth, with the additional idea that residents should have the opportunity of also subscribing towards the capital, and thereby building up a community interest.

But this proposal, as I understand it, concerns only the provision of premises for renting to the small displaced traders that I have already described. It is not a proposal to initiate mass-retailing into the new Indian township, which could well support it with its significant middle-class group - at present without shops in their sections of the planned township.

Imaginative construction of centralised shopping areas where it will be economical to establish mass retailing units is needed, but this development will run contrary to establishing (or re-establishing) many small neighbourhood shops of traditional type.

5. Conclusion:

To sum up, I have set out the circumstances in which the costs of retailing services are likely to be reduced, and the significance of these possible reduc-

tions, particularly to the lower income groups. In essence, this depends upon the development in non-White areas of large mass-retailers, which, in turn, will force reduction of prices in the neighbourhood shops.

Then I have, very briefly, outlined the difficulties that exist to prevent the development of such facilities in the non-White townships.

Certain of the difficulties are inherent in the present stage of development of non-White economic life, others are created by specific policy decisions. Both increasingly deprive non-Whites of the benefits of the revolution in retailing now occurring in South Africa.

Time has prevented my making proposals or suggestions to improve the position in the existing circumstances - I have confined myself to posing the problem.

Speaking in Durban recently on these new dynamic developments in retailing, Mr. Ray Ackerman, managing director of Pick 'n' Pay, perhaps the most aggressive mass retailer in South Africa remarked:

'Why should poor folk pay for outmoded, inefficient operations? Surely South African Retailers can play their part in the Revolution which is sweeping the world? The money saved by the population can be spent on more education and improved living standards - on more investment and better jobs'.

He further went on to remark that in a recent visit to America to study new retailing methods there he found that it was freely held in the U.S.A. that one of the most valid of the Negro grievances underlying the recent riots was the neglect of their areas when it came to locating these new, cheap and exciting retailing centres, thereby depriving those that need them most, of benefits so manifestly accruing to those using the established shopping centres.

In our non-White townships you cannot force these new kinds of business to start simply because it would be nice to have them; but it is well to review conditions that hinder or prevent their starting, especially as their benefits to those 'on the other side of the fence' become more and more obvious.

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DISCUSSION ON THE SECTION
'COMMUNITY DEVELOPMENT AND SERVICES'

In the unforeseen absence of the discussant for this section, the Chairman, Professor D. M. Calderwood of the University of the Witwatersrand, opened the discussion. Commenting on Mr. Kriel's description of the social services in the African townships of Salisbury, he remarked that today the finances available for the development and support of such services were far greater than had once been the case when the profits from beer brewing were used for other purposes. Turning to another point, he felt that Mr. Kriel had not emphasised sufficiently the participation of the people in the services provided. In this regard he commented particularly on the increasing popularity of football. The size of the gate money obtained from some of the functions in Salisbury showed the important extent to which the township Africans participated in and used some of the facilities provided.

In response to a question by Dr. A.J.G. Oosthuizen (of 'Market Research, Africa' in Johannesburg), Mr. Kriel stated that he did not know the actual participation percentage of the 4 - 18 year old youth in the various services provided in Salisbury. However, he knew that they formed a substantial part of the attendance figures. Approximately 500 children and youths attended the various centres per day. Attendance fell as the boys grew older, because they developed other interests. In the twenty years and over age group, they did not have many people participating, except in interests particular to this age group, such as football, weight-lifting, etc. Adult men were left very much on their own to organise themselves.

In response to a further question, Mr. Kriel stressed that most of the work undertaken in the townships in Salisbury was group activity rather than group work. The non-directive method was used. The social workers did their best to steer clear of paternalistic attitudes; Head Office did not decide on what was wanted in the townships. Instead, an effort was made to gauge what their requirements were from the people themselves. Their approach was to wait for an activity to develop, and then try to stimulate it and encourage it, rather than to direct it.

Dealing with a query regarding the opportunities for single males to bring their families into the townships, Mr. Kriel replied that more and more housing is provided every year, and such men could apply for a house. There are no barriers to keep the families of men in the townships out; but on the other hand many of the men do not wish to bring their families into the towns.

Professor Hans Carol, of York University, Toronto, enquired whether the distribution of shops in the townships in Salisbury occurred spontaneously. Mr. Kriel replied that this was not the case. All townships were planned by the City Engineer's Department, and shops can only be built on sites allocated for that purpose.

Mr. Kriel also dealt with other questions, including the provisions made for old age pensioners in the townships.

In initiating discussion on Mr. Allan's paper, Professor Calderwood pointed out that when retailing services were first started by Africans in the townships, there were no Africans who had been trained in retailing. In order to protect these inexperienced shop-keepers, a policy had been adopted of building small distributive units, which were more easily controlled from the managerial point of view, and which were within walking distance of the homes of customers. This latter point was something which he felt was very important. In the working class areas of England the corner shop had been an integral part of the way of life of the people, and planners had envisaged the same pattern in African townships. The position in the townships today was that a corner shop was not needed if the housewife had a motorcar; but if she had no car, and had to walk five miles to a sophisticated supermarket, it was a totally different problem, and the corner shop became relevant. Most African housewives do not have cars. A second problem which Professor Calderwood and his associates had observed when the post-war

African townships were first opened was that a lot of the trade of the shopkeepers was in terms of very small quantities of various commodities - a little sugar, a little tea and a little bit of salt. This was because the people at that time were very poor. The individual small retailer had been able to sell these tiny quantities, but at the cost of time-consuming, and therefore costly, making up of small parcels. Today, the supermarket, with its plastic packages and automatic weighing machines could provide the same small amounts of goods, without the great deal of labour originally involved, and could therefore provide them at lower costs.

In response to a query from Mr. R. W. Morris of Durban, Mr. Allan replied that the mass retailer has made substantial reductions in price levels overseas. Mr. Morris had pleaded for the position of the established neighbourhood shop; and Mr. Allan stressed that there is a need for a shop that charges a higher price but gives more service. Such a shop always has its place, as also does the contrasting supermarket. Mr. Allan then pointed out that through the voluntary-training type of organisation, many retailers in the townships had 'done a tremendous amount' to maintain their livelihood at a substantially lower level of prices. He went on further to point out a contradiction in official policy - while these African townships were supposed to be more or less self-contained and live separately, they were not allowed to have a full range of shopping facilities. As he had pointed out in his paper, only a very small range of shops were allowed in the townships. He did not know whether this situation would break down as the purchasing power of the African rose.

THE CITY - ITS POLITICS,
GOVERNMENT AND GOALS

CITY GOVERNMENT AND POLITICS

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A word must first be said about definitions. The term '*city politics*' would appear to be a very narrow construction, while the term '*urban politics*' would appear to be wrong, because the term 'city' is *legal* and *honorific*. All city politics is no doubt today urban but not all urban politics is city based. With all its vagueness and looseness, however, city politics is a useful term for political scientists, to describe the *difference between* more obvious rural and more obvious non-rural types.

H. J. Laski long ago suggested that politics is an essentially urban activity and it therefore seems appropriate to deal with urban politics, but nevertheless, to make the point that politics is to be found of course in a rural context, but it is more interestingly, an urban activity¹). All communities require government but all communities have a fear of politics. Separating the two is an exercise akin to removing the pips from a grape - in practice, both are inseparably connected but the difference is one worth making. As regards politics this term normally refers to 'party politics', the growth of which may be seen in cities all over the world, of which Salisbury is a recent and interesting example. Cities are normally governmental structures, but *political* control of a great city or conurbation, particularly if it is a capital city, constitutes a substantial asset in the struggle for power. The bigger the city, the bigger the prize. This proposition may be illustrated by reference to the Bill for teachers' superannuation in the city of New York which far exceeds the entire budget of a state like Nevada. Moreover, what London spends on its many faceted activities may be more than the budgets of several European states.

1. CITY GOVERNMENT:

Though a city may be a prize because of the enormous sums of money involved, we are not here initially concerned with the simple lust for power, though this will be dealt with later in the paper. We are also concerned with the question of *governing*. The administration of things, as Saint-Simon and later Lenin pointed out, must be distinguished from the administration of men. Wherever men are gathered they require rules²), and the need for rules involves the need for organisation and administration. It will also, as we will see, involve the more intractable problems of political manipulation, not to mention chicanery. Hence we begin by considering the problems of government.

In 1954, in Professor Robson's *Great Cities of the World*, five governmental problems were enunciated³). These are:-

- i) Organisation of areas and authorities.
- ii) Popular interest and democratic participation.
- iii) Efficiency of the municipal services.
- iv) Finance.
- v) Planning the metropolitan region.

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- 1) Laski, H.J. (1938): *A Grammar of Politics*: Allen and Unwin, London, (4th edition); p. 17
 - 2) Benn, S. & R.S. Peters, (1959): *Social Principles and the Democratic State*: Allen and Unwin, London.
 - 3) Robson, W.A. (ed.) (1954): *Great Cities of the World*: Allen and Unwin, London, pp. 99-102.

These points constitute a useful framework for this part of the discussion - the section on governmental mechanics.

i) Organisation of Areas and Authorities:

The question of what shape and what size must be considered. Long ago, Aristotle spoke of the optimum size of a city¹⁾. Plato recommended an unvarying figure of 5,040 and Aristotle wanted to summon citizens to a political discourse by the sound of the herald's trumpet²⁾. Today, the task of trumpet blowing is entrusted to public relations officers in local authorities. The city today is too big to allow the Laslett type of 'a face-to-face society where each citizen knows every other citizen'³⁾. In a country like South Africa the law is inimical to the face-to-face approach. Greater strains are, therefore, placed on mere organisation. Structures are of importance in city government and they are difficult to change. An example which springs to mind is that of the English County-Borough, a device produced to solve a problem, but a device which lives on in the absence of a generally acceptable alternative.

ii) Popular Interest and Democratic Participation:

Citizen apathy is a major characteristic of city and of local political life. Perhaps 35% of the total registered electorate will vote on polling day in local authorities - this is a fairly average figure. (S.M. Lipset has recently suggested that apathy may in fact assist civic efficiency, but this, to the old-style political scientist, sounds like heresy).

iii) Efficiency of the Municipal Services:

Can we think of a town with unchallenged efficiency in its various enterprises? Unfortunately not. There is always controversy over such matters as slums, open spaces, sewage and transport. In *The Affluent Society*, J. K. Galbraith described Los Angeles as 'the city of a horrible future'. The motor car has taken over the city, producing a favourite Galbraithian notion of private affluence, public squalor. Thus there is a disequilibrium between what the public wants and is prepared to pay for, and what the public gets.

iv) Finance:

Wealthy New York City joins with impoverished Calcutta, Bombay and Barcelona, in declaring their inability to find the money required to finance current municipal services and new developments. The question of finance is the most awkward which local government is concerned with. The most common object of local taxation is the property tax, although some countries tax on incomes as well. In some countries bizarre variations however, occur - thus Bombay has a wheel tax; Amsterdam taxes fire insurances, dogs, and entertainments; Chicago taxes entertainments and also motor cars; while, in Paris, the Municipality taxes balconies, domestic services and gas consumption. Rome, the eternal city, has eternal variations. Here, one will find, the Municipality prepared to tax your dog, pianoforte, billiard table, coffee-making machine, posters, billboards and even your health.

v) Planning the Metropolitan Region:

One of the most difficult problems faced is that of resource-allocations planning. There are many pressures upon city councils to distribute this largesse in various directions and consequently town planning is difficult to

1) Aristotle: *The Politics*.

2) Plato: *The Laws*.

3) Laslett, P. (ed.) (1956): *Philosophy, Politics and Society*, First series: Blackwell, Oxford.

achieve, particularly with large, ancient towns where the needs of modern life compete with the claims made by history. The city of London, for example, has not been successful in marrying these two, and the historic London has been symbolically submerged beneath the ever-increasing proliferation of concrete blocks. A recent example may be found in the city of Salisbury, Rhodesia, where the Council has been split over the question of where to site the new municipal car park.

In medieval times, when cities were ringed with walls, the matter of their government was fairly straightforward. Generally speaking, oligarchies prevailed; but with the approach of modern times, attention was paid to the representative element, as the history of British towns would suggest. The solution devised was that of the elected council, commonly seen as the kernel of democracy. Democracy in this instance is however an aspiration or an ideal, rather than a reality. There is enormous variation in the meaning of council activity. In Los Angeles, for example, there are a mere 15 councillors, and in Moscow, at the other extreme, one might find 1,400. The choice is therefore between coteries of city fathers and unwieldy mass meetings. With the outward spread of the city has come the two-tier system because outlying areas have their own local authorities.

City Government, it should be remembered, is technically pure *government* - i.e. policy on administration and not merely policy, because cities are required to work within the framework of the Acts of Parliament. Two possible systems have emerged:-

- (a) the city council as executive, which is roughly the British system, and
- (b) the executive appointed by the council, normally a paid Mayor (Montreal, Copenhagen, Stockholm, U.S.A. cities, *inter alia*).

The typical British and South African method permits the making of a sharp dividing-line between the political-democratic element consisting of the elected representatives, and the bureaucratic or administrative element - i.e. salaried professional officials. At this point, mention must be made of the Johannesburg 'experiment' now seven years old¹).

Some years ago, Professor Robson complained of the lack of concern by South Africans to describe a great city in South Africa²). However, today there is much interest shown in the attempt made in Johannesburg to break down the traditional categories of city government.

2. CITY POLITICS:

In order to consider the question of 'politics' as opposed to 'government' it might be worth recalling the saying of Turgenev: 'love and politics are the most interesting things in life'. Whereas few people can claim to be in love with 'government', many fall under the spell of 'politics' ...

Where people are grouped together there are conflicts, and where there are conflicts there will be politics. Politics does not in fact describe a *mode* of activity but it describes an *area* of activity. There might arise somewhere an issue which might cause controversy. If controversy becomes intense, if agitation develops, the issue will move from the social or economic arena into the political arena because the political arena is one in which the ultimate weapons

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- 1) See an article by Ron Anderson, Municipal Correspondent of the *Star*, Johannesburg, (reprinted in the *Rhodesia Herald*): *Control of Municipal Affairs by Top Body is Success on Rand*.
 - 2) Robson, (1954): *op. cit.* Professor Robson says, 'It is not my fault that the book contains no study of a South African city. It is the fault of two South African authors who in turn accepted my invitation and subsequently failed to produce anything at all except excuses'. Happily, the situation has now been put right.

are wielded. The political arena is thus the sector of community life in which large groups in the community make demands upon one another, and collectively determine policy outcomes. Cities are replete with politics because city politics is concerned with vital issues, issues which arise quickly and touch the citizens immediately; unlike for example, questions of national defence policy and external foreign relations. To the average citizen these latter are normally remote questions. City politics is, after all, only parish pump politics 'writ large'. Indeed, city politics is not so very far removed from factory politics, or club politics, or university politics. We might describe this as 'politicking'. National politics differ from this in kind and in essence at its very best.

i) Studies of Civic Power and Influences in the U.S.A.:

Several important studies of civic politics have laid emphasis on stress, decision-making and the temptation of office. In his book on *Political Influence in Chicago*, Banfield dealt with the delicate factors behind decision-taking over matters like the construction of a city extension hall and the municipal subsidisation of the privately owned Chicago Transit Authority. Indeed, American city-politics is full of examples of the power of decision-makers (or as they are sometimes less politely called 'bosses')¹⁾. Frequently, the boss has been associated with gangsterism of the sort made famous in films of the 'Thirties. Tammany Hall in New York is the most famous of the great cities given over to the control of the boss or 'machine'. The machine and the bosses developed in response to a need in American political life - firstly the need to mobilise the immigrant vote, and secondly, to keep the machine of political life well-oiled. *The political machine in the cities also provided a ladder for the poor boy to climb out of the slums.*

New York is supposed to have been 'run' on the three 'Bs' - booze, bettings and brothels, into which areas a disproportionate amount of the city's resources seem to have found their way. Crime, violence and politics appear synonymous terms in the context of American cities and the crimes have been listed *ad nauseam*. In fact, however, the system by which bosses controlled cities was not all evil. The function of the boss was to buy votes and the boss bought votes in all the many ways open to him. Indeed, there was, in the early days, no other means of making the system work, (as Namier showed for 18th century England). As J.T. Salter shows, many of the bosses were disinterested, useful 'pullers-of-the-levers-of-city-politics'. To quote from his book of case studies, called *Boss Rule*:

'They were not predatory but eleemosynary politicians, not thugs but philanthropists. To be sure they did their people favours in return for votes, but they did them favours, but these favours were something to which as citizens they were entitled; except that the formal government of Philadelphia was not up to the responsibility of administering them as rights.'

In reality, they *are* rights, and Professor Salter looks forward to the time when politics will not pervert them. That time has partially arrived since he wrote his book; public welfare is beginning to replace *private* or *party* benefits. Some of the bosses whom Professor Salter described were, in fact, likeable and interesting individuals like, for example, Timothy Flanagan, (a picturesque character who said, amongst other things, in response to a query whether the interviewer might smoke in his house: 'Certainly, it is a poor politician who will not permit anyone to do anything outside of spitting on the ceiling').

ii) Modern Political Scientists:

Modern political scientists tend to understand rather more the pushes and pulls and influences, as they argue seeking to discover *WHO RULES?* - the

1) The literature on bosses in American cities is enormous but the doyen of these studies is J.T. Salter (1935): See his *Boss Rule - Portraits in City Politics*; McGraw-Hill, New York: *passim*.

answer to this question is unbelievably obscure however. In the U.S.A. much concern is shown by students of American civic politics about elites and all the problems of stratification as against pluralism¹⁾. Not unsurprisingly, the conclusion of Warner's Five Volume study of *Yankee City* runs as follows:-

'In summing up it can be said that the upper class, together with the upper middle class, dominate the high control offices. They have a proportion of these offices far out of keeping with their representation in the general population'.

Studies of elitism predominate - this is a sort of modern sociological fetish.

Americans are well advised to look at the politics of their cities, because America *is* the five biggest cities and the four largest states; moreover, it is in the cities that the race problem has come to a head. Last year, 193 cities applied for federal help to re-organise their blighted urban environments. Sixty-three states were eventually chosen to receive federal help - (\$312,000,000, though Johnson had asked for \$662,000,000). Some critics felt that even with the full appropriation the jam would be spread too thin, but this was a political necessity to catch votes. The *Economist* reported that five of the lucky sixty-three cities are represented by Democratic members of the Appropriation Committee in the House of Representatives; one city chosen - Smithville, Tennessee (population 2,300) - is the home town of the committee's chairman. Cities omitted were Cleveland and Los Angeles; and fortunate ones included were New York, Detroit and Newark.

iii) Some Problems:

Perhaps the biggest problem to be faced by students of urban behaviour is that towns act as magnets to all sorts of communities of men - hence the problem of race is being thrashed out in the towns, not only in South Africa, but in Britain and the U.S.A. It has long since been demonstrated that town living promotes race conflicts and this is the pure milk of political controversy. Gobineau's disciples, Vacher de Lapouge and Ammon, measured skulls in cemeteries, as it is well known, equating the *DOLICHO-CEPHALICS* with the Aryans. Ammon's law said that dolichos were found more in towns (as conquerors will tend naturally to settle in towns)²⁾. *It is not without interest that the Bantustans will be developed far from the present towns.* Nevertheless, for those Africans who live in towns, politics will always have a fatal fascination. Town living involves a tissue of permits (licences), and this involves a knowledge of *access*; and this involves the granting of concessions, influences and favours - here is an excellent demonstration of the point made earlier, namely, that politics is a question of the arena of activity.

iv) Honest Graft:

Nevertheless, it is clear that many of you will still consider 'politics' a dirty business. This may be because some councillors (not always councillors), sometimes give the impression of being interested in things other than idealistic government. The unhappy events leading up to the James Enquiry into certain irregularities on Durban's Council in 1966, may serve as a reminder that city politics can sometimes be a meaty and beery business. We expect, rightly, that councillors should maintain a high standard of conduct. On the whole, councillors and local government officers do maintain a high standard of conduct. They must not only be honest, in fact, but must be 'beyond the reach of the suspicion of honesty'.

There are, however, a large number of appointments to be made in local areas, which are made on a local, personal basis. If a personal element creeps into these matters, the temptation to nepotism is always strong. Local services are personal services, and Councils are obliged to appoint many people to many

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- 1) Polsby, Nelson W., (1963): *Community Power and Political Theory*: Yale, New Haven.
 - 2) See Barzun, J., (1964): *Race*: Harper, New York, (2nd Edition), p. 161.

great varieties of jobs from dustmen to doctors. This being the case, and accepting the fallibility of human beings, it seems appropriate to make the plea here for what some people have called 'honest graft'. In order to put this in its perspective, it is interesting, once again to refer to American city-politics, where most of the studies have been carried out. The party machines were 'oiled' through patronage. Indeed, machine politicians were not in the business for their health, but for patronage - in other words, they used jobs as the easiest way of paying running expenses of the machine. Abraham Lincoln declared *before his election* 'they have bought and sold me ten times over'. This might not be too bad a thing because a machine can barely survive without jobs as an effective means of keeping the whole process going¹. (One commentator suggested that the current price quoted for judgeship in the city of New York was one year's salary paid in advance - a quaint reminder, as Brogan reminds us, that the annates of Henry VIII and the 'first fruits' of Queen Anne have not been entirely forgotten; (municipal judges in New York receive higher salaries than do the Justices of the Supreme Courts of the U.S.A.) The writings of Professor Slater have indicated that the bosses were often as interested in helping people as in exploiting them, and indeed their remuneration was often quite modest.

This was 'honest graft' - the utilisation of political knowledge, the connecting up of pieces of information, and the rewarding of purveyors of this information. Looked at in this light, 'honest graft' was entirely commendable. Thus honest graft meant buying up land which was rising in value in order to build new schools, new hospitals, and new roads. Moreover, it might mean using your knowledge to help your friends and this was ethically no different from shrewd business tactics.

Thus, there was nothing different between '*business*' as understood by the businessman, and '*politics*'; for all the city politicians were doing was to apply the techniques of business to the value of their cities. Pure, sea-green incorruptibility was a characteristic of Robespierre and who would want Robespierre? Austere puritans are a greater danger in politics than 'honest grafters'. Today, parking meter irregularities, such as the feeding of meters, are regarded as fair game, and not 'graft' in the sinister sense. What men think to be improper is one of the great variables. 'There are things for which men are canonised among the Turks which one cannot with modesty relate'. (John Locke). Hence we should not distinguish too clearly between forms of graft because it is difficult to distinguish between small, useful malpractices and plainly 'dirty' graft. The difference is historical. As economies expand so do the opportunities for plundering the public - now seen as an impersonal totality. The point at which *honest* graft becomes *dirty* graft developed when the boss or city manager could no longer assist people as he prospered - when the help element gave way in a growing depersonalisation to mere profit. Dirty graft therefore involved making a successful living, not on the fortunes of other people, but on the misery of other people. The 'Twenties saw the great watershed.

Hence, it would appear that the old small-time honest graft has disappeared, much to the chagrin of the beneficiaries. It was no longer a question of turkeys or coal at Christmas, municipal jobs or a good word to a municipal contractor for the unemployed, or help for a widow and her children - all these in return for votes. The old order passeth. The moving finger had written and had passed on, pulling honest graft along in its wake. The age of reformers has come and with it a new notion that some large, impersonal, corrupt Outsider, the State, should assume responsibility for civic morality - echoes of Weber perhaps. In fact, as with England in the 18th century, honest graft kept the urban machines going as a business venture. Hence, today, I would advocate a return to the more familiar, warmer, human way of life of the old machine. It is not a question of morals or a *good* - i.e. a morally impeccable government - it is a question of function, and no machine can function without a little lubrication.

1) Brogan, D.W. (1954): *An Introduction to American Politics*, Hamish Hamilton, pp. 123-173, Chapter IV.

v) The World City:

We now pass from the mere city to the World City, of which London may be taken as the supreme example¹). The largest city in the world, it was often said in the 1860's and '70's was anonymous. It had been left outside the range of the local government reforms of the century. By 1900, reform was still awaited. G.M. Young said that London was still the

'vast and shapeless city known to Dickens - fog-bound and fever-haunted, brooding over its dark, mysterious river - into the imperial capital of Whitehall, the Thames Embankment, and South Kensington, is the still visible symbol of mid-Victorian transition'.

London was an incredible mixture of ancient and modern. Thus, the City (the inner square mile around St. Paul's), retained its centuries-old form of government. This city served the world. 'The present condition of this huge metropolis', remarked Toulmin Smith (one of the most enthusiastic defenders of local self-government), 'exhibits the most extraordinary anomaly in England. Abounding in wealth and intelligence, by far the greater part of it is yet absolutely without any municipal government whatever'.

London was the seat of the government, the home of the sovereign, the centre of the legal system and the learned profession, the hub of the literary and scientific world, a world metropolis; but it could not speak out in its own name except through the City of London, which was an institution which defied the 'march of improvement'. Is the capital of the British Empire to be the only space in that Empire in which the nation cannot speak through its local representatives?, critics asked.

G. K. Chesterton who had asked the question, 'Where did London end?' also asked the question, 'What did London mean?' in the *Napoleon of Notting Hill* (1904). The fantasy of his story was the kind of fantasy that grew out of frustrated hopes. The king in the novel has the 'noble conception' of a revival of the arrogance of the old medieval cities applied to our glorious suburbs - Clapham with a city guard; Wimbledon with a city wall; Surbiton raising a bell to raise its citizens; West Hampstead going into battle with its own banner.

The presence of powerful vested-interests in London which had gone untouched for decades necessarily involved the reformers in a sequence of fierce contests. They welcomed the opportunity. They disdained all the trappings of civic power - coats of arms, robes and maces, even entertainment allowances - and concentrated on the substance. In their contest they were bound to become public figures if they were not public figures already. Men like Lord Rosebery, who was elected as first Chairman of the London County Council, were already public figures - the Council attracted a relatively large number of people who were; others like Sidney Webb stepped into the limelight from small Fabian Society meetings and propounded a philosophy of municipal reform for the millions.

The Fabian philosophy of municipal reform was linked up with the 'underfed denizens' of T.H. Green to produce what some have called 'gas and water socialism'. Hence London provides us with the picture of the anomalous situation of an ancient city once regarded as the property of Londoners, now become the property of the world. 'Why', asked Webb, 'should London fall behind?' Miraculously, London survived through its anomalies to remain the world's banker/financier, and if she were no longer the world's workshop, she was still the world's most swinging city.

What has been the effect of all this activity? The meta-city has been created. The world thus depends upon effective city government and temperate city politics in cities like London, New York, Paris (the Vietnam delegates to Paris in mid-1968 met in a city falling apart), and Rome. If services are inefficient in the great cities of the world, the world is likely to know about

1) Briggs, Asa (1963): *Victorian Cities*: Odhams Press, London.

it. The sheer problem of organisation of big cities have become problems of importance for people in remote far-flung villages.

The world-city, moreover, appeared to charm, to ensnare, even as it yet grew bigger, uglier and spread its tentacles around and about. Do not forget that both London and Manchester have Piccadillys. Thus some could say, as did Benjamin Haydon of London in 1841, 'So far as the smoke of London being offensive to me, it has always been to my imagination the sublime canopy that shrouds the City of the World'. The polis has become the cosmopolis.

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THE RISE OF DISORGANISATION IN METROPOLITAN COMMUNITIES

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I chose as the title of this paper 'The Rise of Disorganisation in Metropolitan Communities' for several reasons: It is relatively short. It concentrates attention on what is a vital concern of our time. It connotes movement. Of course, it is a bit cumbersome, but to an academician this is not necessarily a disadvantage.

It would be helpful at the outset if I could avoid some methodological issues. It is probably essential to define 'disorganisation', but it would be more convenient to omit that too.

What I have to say is constructed around six topics relating to metropolitan conditions in the United States:

1. Organisation and its general implications for metropolitan units.
2. The Moulding of National Character and its consequences. For the historians present I humbly beg your pardon for assuming that such a pervasive thing can be defined.
3. Movement to the Cities (I say movement because there is no large central city unit in the U.S. whose natural increase can sustain growth. By large I mean cities of over 350,000 persons).
4. National-state politics and city growth.
5. Confusion about the city.
6. The New Metropolis.

1. ORGANISATION AND ITS GENERAL IMPLICATION FOR METROPOLITAN UNITS:

The term 'organisation' as used here refers to the methods, principles, techniques, processes, and practices involved in managing the activities of groups of people to achieve desired ends. Thus, when these means become inadequate for the task of achieving desirable goals, we have the appearance of disorganisation. More specifically, we may say the rise of disorganisation takes place when a breakdown occurs in the ability of traditional governmental units to administer programmes with facility and efficiency *when* a new variable intervenes in an existing set of constraints. At the outset the study of organisation involves the idea of optimality or, to be more precise, satisficing. That is, at a given time, under a certain set of conditions, there is a combination of resources which merges benefits and costs in a way which is the most favourable or satisfactory that may be achieved.

Externally, the definition appears suitable enough. Given a city of X thousands of people there is a management system that will provide government services for the public better than any other system, given whatever resource and cost restraints you care to make. A belief in the validity of systems concepts forces one to consider values associated with social entities, economic enclaves, political forces and cultural patterns. Thus, concentration upon the intellectual aspects of organisation helps to define the higher goals, aspirations, and values of society generally.

Internally, the definition raises rather serious problems. The empirical work necessary to develop data for analysing alternative organisational approaches would be immense for large cities, even in this computer age. This is so for the very reason that the data keep changing. St. Louis, Missouri is not the same today as it was yesterday. Nor is Durban. Nor are the same

questions always asked. Another difficulty is the magnitude of physical, institutional, and ideological changes that communities undergo. Residential areas become commercial; buildings rot and contemporary structures arise; government itself takes on new demands which often wreak havoc on traditional operating procedures; and the ideas of men change in ways which cause the functions of government to take on new meaning. Each such change calls for a review of organisation efficiency if we are continuously to assess the merits of alternative approaches to the management of our cities. It is for these and other reasons that the managers of organisations maintain a heavy dependence upon art rather than science.

There is more to the meaning of organisation than the mere presence of people to be managed. There are psychological, social, and cultural dimensions of equal if not more importance than the economic and political aspects. These involve beliefs as well as the experiences people have had, and are as much a part of organisations as their purposes, size, or financial support. This is particularly true of metropolitan areas in the world today. It is for this reason that it is imperative that we all become more concerned with the development of cognition research.

Within the last few years it has been said repeatedly that the current condition of metropolitan communities is best described by one word - chaos. A harsh indictment. But, it may not be entirely true. It is my thesis that unity of purpose of governmental organisations has been strained; that the proliferation of governing bodies in metropolitan areas has reached the point of absurdity; that the revenue-expenditure ratios have been deteriorating steadily in cities of 500,000 and more persons; that changes in the population composition have upset the social stability of neighbourhoods; and that the increasing size of minority groups has transformed them, in many communities, into majorities. Possibly these conditions may properly be labelled chaotic. However, they are more akin to the conditions of incipient revolutionary change. As serious as these conditions are, I contend that they are susceptible to arrest and that, in the U.S., treatment for these ills will come before chaos reigns. I do admit this outcome hangs by a mere thread. The remainder of my remarks largely relate to this rather optimistic view of our chances to pull through.

2. THE MOULDING OF NATIONAL CHARACTER:

America is not a nation that was built to withstand incessant prosperity. It is a place of faith where hope among the distressed springs eternal; where opportunity beckons the downtrodden; where tomorrow offers succour from the strife of today; and where the powers and responsibilities of government are in an unfinished state, and those without representation may ultimately join together and obtain redress. In short, the appeal of the American political process is a popular belief in its prospective universality. And like most other conditions of human existence, just when it appears the battle has been won, a new conflict arises. The current one is a little different from others in our past. It is a crisis of identity. Can we bring together in a common cause, encourage co-operation and understanding between, and create a kind of social unity from, the diverse interests of the vast middle-class and lower-class masses?

There is a sort of tragedy in America's affluence. Its wealth was gained at great expense through individual suffering, frugality, and through the agonies of economic and political events.

Prior to the 1930's the need for industrial labour seemed almost bottomless. Immigrants came by the millions to seek improvement. They were screened off into the melting pots of great cities and slowly siphoned off into the building of railroads, to the farmlands of the middle-west and west, and into the factories of a growing industrial nation. Most could find employment and it was this fact that overshadowed the depressing living conditions of the immigrant ghettos. The 'muckrakers' - Steffens, Riis, Tarbell and others - might depict the social ills of a time, but the people themselves looked forward to ultimate victory in their economic battles. Thus, there was hope amongst them even if middle-class Americans of longer national lineage looked upon them with indifference or, as was often the case, with open hostility.

Even the nation's depressions served a social purpose. National unity of unlikely elements could be achieved through the common experience of economic disaster. Farmers of whatever nativity or religious belief sought greater participation in their own organisations and alliances. Labour organisations formed to gain economic benefits that would not have been possible under conditions of general prosperity. Economic crises bred organisations to correct the balance of factor returns. These, in turn, led to political activities which sought to gain legal status for collective bargaining and the economic benefits which it would bring. Throughout the 1930's and '40's the economic aspirations of farmers and labourers were recognised through legislation, and these aspirations were pressed into the national ethos.

All this is not to say that the work was completed. After all, the affluence which was gained by use of political and economic sanctions left pockets of poverty in the nation among groups which were isolated by space and mind from the mainstream of consciousness of most 'Americans'. Somehow, we had forgotten about them in our zest to outlaw depressions from the national vocabulary.

The current revolution in America, (I say current because there has always been something going on to upset the status quo), is by any reading a social attack. The highly visible Negro minority has found leaders who instill a measure of confidence and a sense of militancy in their attempts to gain equality of treatment for their followers. These leaders have, since the end of World War II, acquired followers who are no longer content to wait for 'citizenship' at some future time. They want a reckoning now. This is upsetting national, state, and local conditions across the nation. It is at the local level, mainly in urban-metropolitan communities, that the full potency of the new militancy is erupting.

3. MOVEMENT TO THE CITIES:

It is not surprising that great cities would quickly thrive in the U.S. Even in colonial times the artisans and commerce of towns were necessary to the taming of a wilderness. As the wilderness was pushed back the Pittsburghs, Chicagos, St. Louises, Denvers, et al. served to consolidate the economies of large regions. And while they were doing that, the Philadelphias, New Yorks, and Charlestons were tying these hinterland entities into the national fabric. Inventions and new processes which had been clocked by lack of capital and mass markets could, with the savings of 19th century Britain and America and the growth of cities, be effectively promoted through a system which subjected the political machinery to the rather direct hegemony of manipulators of private capital.

As the cities grew, concomitant mass markets appeared, which further quickened the need for labour and capital. Economies of size elevated interests of managers in location costs and the technical coefficients of production. But perhaps the city's greatest contribution to the production system was the way in which it provided the foundation for a highly developed specialisation of labour.

Because of these changes, after 1800 traditional means of finance for new processes became outmoded. By 1850, for example, it was clear that the corporate form of organisation would rapidly replace partnerships or proprietorships as the most effective means for mobilising the massive amounts of capital that were becoming necessary to process resources and manufacture them into 'urban' products (i.e. railroads, oil, steel, implements, construction, etc.)

Slowly at first, a drift of population from rural to urban areas began. By 1865 it was moderated by the migration westward. By 1900 the rural areas were providing the population for the larger cities of the nation, and in 1920, one of the most important statistics in the nation's history reported that urban population had become greater than the rural population.

Even so, a nation does not one day arise, look at data with respect to economic, political, or social conditions and if the data have changed, adopt new foundations for long-held and cherished views of personal and institutional arrangements for conducting its work. This is done through a psychological and

political perception process and is accomplished largely by shifts in the economic organisation of the nation and its component regions. It is done also by individuals forming new alliances and protesting the biases of orthodox arrangements.

The trends, tendencies, and oscillations of population movement to cities have been observable for a long, long time. One may wonder why it is then that we are suddenly confronted (in the last decade or so) with 'the crisis of the city'.

4. NATIONAL-STATE POLITICS AND CITY GROWTH:

The *Report of the National Advisory Commission on Civil Disorders* to President Johnson early this year (1968) states, 'The events of the summer of 1967 are in large part the culmination of 300 years of racial prejudice ... Few Americans appreciate how central the problem of the Negro has been to our social policy'.

On the basis of this one might say that the organisation of American politics is in large part a response to problems posed by the agrarian South with its 'peculiar institution', and by the North, Middle West and West.

To explain the trauma of the city - i.e. its increase in size, and slow deterioration in facilities and quality - one must go back to the origin of forces producing the constraints in our political system or systems.

Out of the confusion of the Civil War was gradually welded together a pattern of political operations that left the South to the southerners, but which gave to the North and Republicans the Fourteenth Amendment to the Constitution. This provision enunciates that no state

'shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property without due process of law; nor deny to any person within its jurisdiction the equal protection of the law'.

For business interests, the Amendment checked state legislative attacks on property rights, franchises, and corporate privileges. No longer would state legislatures be completely free to restrict the operations of business interests. But, one asks, what possibly would induce the South to accept such a measure? Interestingly the Amendment was originally rejected by Delaware, Kentucky, Maryland and 10 Southern States. Subsequently it was ratified by these Southern States. In the negotiations which occurred over ratification it has been suggested but not, to my knowledge at least, verified or been adequately treated by historians, that the South received assurances that the Amendment would not be pursued through the federal judiciary except where property rights were concerned. This, if true, accounts for the very rapid growth of the North, Middle West, and West at what, by any reasoning, was a tremendous cost to the Southern 'one-third of a nation'. For, in the South, states rights were observed and for 75 years there was nothing like the economic development in the North, whereas in the North the power of the federal judiciary broke the back of state legislatures and industrial organisations were freed of the most difficult problems associated with local restrictions on operations.

The point of this conjecture is that the present malaise of the city in the U.S. is conditioned by the fact that state legislatures have not really had much authority for managing affairs of cities in their own domains. This important feature of organisation has been left to local authorities, and largely ignored until very recently.

Finally, a few words should be said about the current search for a new grouping of political interests. The coalition of the Roosevelt New Deal has about run out of steam. No political coalition based upon similarity of interests between agrarians, industrial labourers, business, and local merchants has much appeal today. The Frederick Jackson Turner thesis that the frontier, ever receding, was at the outer edge of the place 'where civilization and savagery met' concerned horizontal expansion needs of the 19th century. Today, one needs only to turn attention to the city as the new frontier where urban

populations, in the search for Americanisation, advance from neighbourhood to neighbourhood in a kind of improvement process. Any resistance or rejection of this process creates a cyst which may become cancerous and creates severe difficulties for local authorities. It is a vertical process of expansion, and is heavily weighted by the degree to which our society really believes in education, and perhaps more importantly, in the construction of institutional checks which will ensure that an aristocracy of talent may be encouraged. It is just as real as Sumner Schlichter's insight that 'we manufacture research and development' today, and the places where this happens are cities.

5. CONFUSION ABOUT THE CITY:

From what has already been said it seems clear that the place of the city in America is assured. No one seems to question statistical estimates that the population of the nation (and of the world) will increase many millions in 10, 20, 30, or 40 years time. No one seems to question forecasts that an increasing percentage of the population will be living in large urban centres. Nor do I offer objections to such statistical observations. What we do need to know something about is the rate and direction of change that will be occurring within the vital portions of metropolitan areas of the 45 or 50 largest such communities in the U.S.

Current policy assumes that we need more housing, more training, more general education, more health care facilities, more roads and highways, more parks and recreation areas, more services, et cetera. The focus of current policy and programmes is on the inner, or core, or central city - whatever you wish to call it. This is the nucleus from which suburban ring development proceeded.

In earlier days the city was normally a political creature in that the metes and bounds of its territory were set forth. Following this, political organisation was developed so that the procedures for establishing policies could be designed.

One must remember that the economic dimension in the creation of cities was usually dominant. At first the important centres were located where access to deep water was most favourable. Later, when rail lines were laid across the nation the principal cities grew where distribution access was most favourable. Today, new communities are thriving where highway and air terminals are remaking old distribution patterns.

These changes were horizontal in that the kinds of transport facilities available at any given time largely determined the spatial location of new cities, because of their impact upon industrial and commercial activities. The automobile is also a mode of transport but an essentially private one (not considering here the use of motor trucks). With it the vertical changes in the central city came with a rush. Movement from rural areas to the suburbs, and the establishment of numerous incorporated municipal units, outside the confines or jurisdiction of the nucleus city, proliferated. Quickly, on the heels of this expansion came the internal movement of people from one place to another within the broader confines of the whole metropolis. Also, instantaneous communication through the marvels of the electronic revolution made it easier for officials of firms and governments to *talk* with counterparts in distant places than to *see* individuals in their own home communities. And personal communication tele-vision will soon be generally available.

What do these things mean for the central city? If we are to truly *Focus on Cities*, our Conference theme; do we not have to come to grips with the implications of technology and human improvisation in the reconstruction of the city's essential elements?

Perhaps we have not examined sufficiently the nature of the modern community core. Just maybe, it is no longer needed in the traditional functional sense. Very particularly this may be so for central cities of more than 500,000 inhabitants. My own estimates of per caput costs for U.S. cities indicate that

general purposes expenditures are 27 per cent higher for cities of over 1,000,000 than they are for cities of 500,000 to 1,000,000; and that they are 9 per cent higher in cities of 500,000 to 1,000,000 than in places of 340,000 to 500,000 people.

Thus, service costs per person in large centres are greater than in smaller places. This, coupled with the decline in revenue capacity of the core city in metropolitan areas, raises the spectre of bankruptcy for these massive centres unless revenues can be raised elsewhere (state or federal support); or unless the core can be redesigned as an educational, recreational, cultural, and perhaps financial focus for the whole metropolis.

The approach taken in attempting to resolve the financial dilemma of the U.S. central city is to seek greater financial assistance to continue operations as now constituted. Very little attention has been devoted to the concepts necessary for revolutionary changes in the central city.

As Lewis Mumford has put it:

'Surely it is time that there was a general realization of the fact that we must deliberately contrive a new urban pattern; one that will more effectively mobilize the immense resources of our great metropolises without accepting the intolerable congestion that has driven increasing numbers of people to seek - at whatever sacrifice of time and social opportunity - at least a temporary breathing space in less congested suburban areas'.

6. THE NEW METROPOLIS:

If we were to deliberately contrive a new urban pattern, what exactly would we end up with?

First we should consider the possibility that it is the revitalisation and not renovation of the core city that is at the heart of the matter. We do not need nor could the metropolis withstand, new bricks in places of old. The city is often old - it was built in a different age and it must now be redesigned in the light of past, present, and, insofar as can be predicted, future changes in economic organisation and technological advances.

We must recognise that manufacturing activities are no longer dependent upon multitudes of common labourers living near the places of former employment. These places which are frequently found to be the ghettos of today's cities have long since been abandoned by industry, and their deterioration is a social cost of major consequence in America. The abandonment of formerly productive sites in favour of distressed housing usage is only one form of the disorganisation of the older cities.

That the core city should be considered as the hub of the metropolis' life has not been effectively demonstrated yet. In core area redevelopment programmes, transportation functions have been of primary concern to planners. And trouble has always arisen when a programme design results in the destruction of residence units (no matter how inadequate); in the use of the land for non-residential purposes; and in a total diminution of living quarters. The question - what happens to people whose residences are to be torn down before new quarters become available? - is of central importance.

It is in this very area that modern planning is weakest. For if we are to invigorate the core city we must use the total metropolis as the focus. Once this is understood by people living in metropolitan America, it may be possible to adopt *one* management system to govern the unit; not 40 or 80 or 100. (The Chicago Standard Metropolitan Statistical Area (SMSA) has 1,100 local governments; New York, 555; St. Louis, 450. There are 92,000 local governments in the nation with 18,500 (20 per cent) in the 212 SMSA's which have 65 per cent of U.S. population - 113 million in 1960).

The metropolis cannot maximise human welfare for all groups through a system which enables any one assemblage of people (suburb) to deny its source of livelihood from the central city. Yet, the U.S. method for ring or star development enables the outlying portions of metropolitan areas to do just that.

Politicians, academicians, and many knowledgeable laymen have despaired of ever achieving a meaningful restructuring of metropolitan community government. What this means, if they are right, is that it will be necessary for planners to work with the existing layers of metropolitan organisations if some progress is to be achieved in providing the services and facilities that are required. Almost every attempt to improve metropolitan conditions is predicated on the belief that nothing really bold in governmental reorganisation is possible. If this is so - chaos will certainly reign.

However, Americans are a pragmatic people. They adjust to crises: there is a crisis theory of American history. We are presently confronted with a major crisis of our cities, and I for one am optimistic about the likelihood that current opinions and attitudes may change radically in the next few years. At that point we may begin to make progress in building cities which will stretch men's minds, not choke their hearts.

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ORGANISATION FOR METROPOLITAN PLANNING

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The process of urbanisation has assumed a new form in the Western world and lately also in South Africa. A real specialisation results in a cluster of towns or cities growing together in a dispersed pattern rather than in a single nucleus. Consequently there are usually a number of local authorities involved in every metropolitan centre.

Adequate tools already exist for the planning of individual towns, but there is still no machinery for the co-ordinated planning of the towns in the larger metropolitan setting, with the result that they are growing together in a haphazard manner, giving rise to mixed land uses and inadequacy of services.

By 1960 there were eight metropolitan clusters in South Africa, each with a population exceeding 100,000 persons. At the present rate of growth in the main growth centres, there will be eleven by 1970, of which three will exceed one million persons each.

This concentration of development in the four major metropolitan areas - (at present equivalent to 62 per cent of the total urban White population in the four major centres containing 80 per cent of the economic activity) - is retarding growth elsewhere. The imbalance in the economic structure is clearly apparent in the differences in the per caput gross product which ranges from R18 in some areas to R1,034 in others¹⁾. This highlights the fact that there are vast depressed regions that can only be reactivated by massive decentralisation from the areas of over-concentration.

The immediate need in South Africa therefore seems to be for administrative tools to handle metropolitan and regional planning respectively.

In the older countries there is already a process of adaptation to the new needs, in some cases by the establishment of spontaneous new instruments of control, but more often by a laborious process of adaptation of the traditional administrative organisations.

It is the purpose of this thesis to examine some of the instruments for inter-municipal planning with a view to propounding a rational form for South African conditions.

1. METROPOLITAN PLANNING IN TORONTO:

Planners in South Africa have been studying the Toronto experiment in the hope of finding a suitable model for South Africa.

The Toronto-Hamilton conurbation on Lake Ontario forms the largest concentration of urban development in Canada, containing three of the eight largest industrial cities along a 40 mile front. The 13 municipalities in the area are all dependent on the lake for their water supply and for the discharge of their sewage, yet only six of them have physical access to it. Some municipalities were consequently experiencing an acute shortage of water and others, unable to finance proper sewerage, were polluting the common source of water supply. Urban services were completely unco-ordinated and some of the inner municipalities had no space for much needed housing, whilst others had all the room, but no funds.

1) Department of Planning (1967): *Development Atlas*: Government Printer, Pretoria.

Thousands of people were commuting from outlying towns to the employment centres in the city of Toronto, using roads and services provided by the city, yet making no contribution towards their maintenance.

A climate for incorporation rather than federation had been emerging historically in Toronto, starting in 1834 when York was added to the City of Toronto. Between 1885 and 1949 there were no fewer than 45 annexations by the City of Toronto¹).

Following on the Cumming Report, the Municipality of Metropolitan Toronto Act was passed in 1953. The 13 municipalities were formed into a corporate body, deemed a single city for the purpose of municipal administration. Section 4 of the Act constitutes the metropolitan council, comprising the mayor of each area municipality, two members of the Executive Committee of the City of Toronto as well as an alderman from each city ward²).

The metropolitan council (metro) took over the entire water, sewerage and metropolitan road systems, leaving the area municipalities to deal with the local networks and local roads only. The area municipalities are also responsible for rates and taxes, but metro in turn imposes an annual levy on the municipalities for their estimated needs.

It is generally accepted that the metropolitan council has achieved its primary purpose of transforming the previously unco-ordinated development pattern into one of orderly growth. In the six years of its existence, up to 1960, 400 miles of new roadway had been constructed; the water mains had been nearly doubled; and several sewage disposal works had been installed, thus eliminating the water pollution that had been taking place.

At the present time the outlying area municipalities have all been assured of adequate water and sewerage services, and public transit, and sufficient funds have become available to provide schools and other institutional services³).

That the metropolitan government has not met with general approval is evident from the need for the public hearings that have had to be held from time to time. Some renewed applications for amalgamation eventually led to the appointment in June 1963 of a Royal Commission under Dr. H. Carl Goldenberg to undertake a special study of the metropolitan form of government. The report was tabled in June 1965⁴).

The following are some of the major changes to be introduced:

- (a) to provide a more equitable representation, the 13 municipalities are to be consolidated into six cities;
- (b) each city is to be represented on metro by the mayor and councillors in the ratio of one representative per 55,000 to 60,000 of population;
- (c) representation on metro is to be reviewed every ten years to ensure that no disparities in representation develops.

In general it may be said of the Toronto experiment that the metropolitan council has come very close to a unitary form of municipal control with very little authority now vesting in the individual municipalities. This may account

1) Statement by the Hon. John Robarts, Prime Minister of Ontario: Queen's Park: January, 1966.

2) *op. cit.*, p. 4.

3) Toronto, City of (1964): Submission to the *Royal Commission on Metropolitan Toronto*: March, 1964, p. iii.

4) Royal Commission on Metropolitan Toronto (1965): *Report*: June: p. 200.

in a large measure, for the strenuous opposition to the metropolitan concept by the city of Toronto, which is itself a large city and which has repeatedly made out a strong case for incorporation of the smaller area municipalities.

2. THE NEW YORK CITY ADMINISTRATION:

The form of metropolitan government which has evolved in New York affords an early example of incorporation and consolidation into a unitary form of metropolitan government.

The first incorporation occurred in 1874 with the amalgamation of the three western townships. By 1890 there was such a diversity of local authorities and 'districts' that a commission was appointed to inquire into the desirability of a consolidation. This led to a popular referendum in 1894 and a charter in 1897 in which the five boroughs of Brooklyn, The Bronx, Manhattan, Queens and Richmond amalgamated into a single local authority for metropolitan government, retaining their local status however in the administration of purely local matters¹).

At the present time the city administration consists of the following elements (see Figure 1):

- (a) The mayor, elected for a term of four years, is the chief executive and heads the administrative cabinet of several deputies, assistants and aides;
- (b) the legislative council consists of 25 members, elected for a term of five years; six from Manhattan, five from the Bronx, nine from Brooklyn, four from Queens and one from Richmond. The mayor is also the political leader of the Council;
- (c) the Board of Estimates, which is in fact a sub-committee of both the executive and the metropolitan council, runs metropolitan affairs subject to confirmation by both the full council and the mayor. It is assisted in its work by several commissions, including the City Planning Commission.

The New York City Council is thus a metropolitan authority for comprehensive government rather than for planning. For a city the size of New York it is difficult to envisage a more effective form of unitary government. The Board of Estimates serves as a compact co-ordinating body representative of a large and unwieldy municipal authority which would otherwise be well-nigh impossible to direct into concerted action.

3. THE GREATER LONDON COUNCIL:

A metropolitan planning and development authority has been in existence in London since 1899 when the London Government Act established the London County Council. An outstanding feature of the London metropolitan structure is the distinct separation of functions between the L.C.C. and the local authorities, the latter having retained their local autonomy at all times. The authority of the L.C.C., on the other hand, was limited to wider issues such as education, fire-fighting, main-drainage, housing etc.²)

By 1944, when the Greater London Plan was produced by Abercrombie, the built-up area extended far beyond the original L.C.C. boundaries. Difficulty was also experienced with the administration of the Town and Country Planning Acts because the L.C.C. jurisdiction did not cover the entire metropolitan area. Consequently the L.C.C. was dissolved by the London Governments Act of 1963 and the Greater London Council established over the much larger area. The two-level

1) Sayre, Wallace S. and Kaufman, Herbert, (1960): *Governing New York*: Russell Sage Foundation, New York: p. 14 et. seq.

2) Robson, W.A. (1957): *Great Cities of the World*: Allen and Unwin, London, pp. 270 - 278.

NEW YORK CITY GOVERNMENT

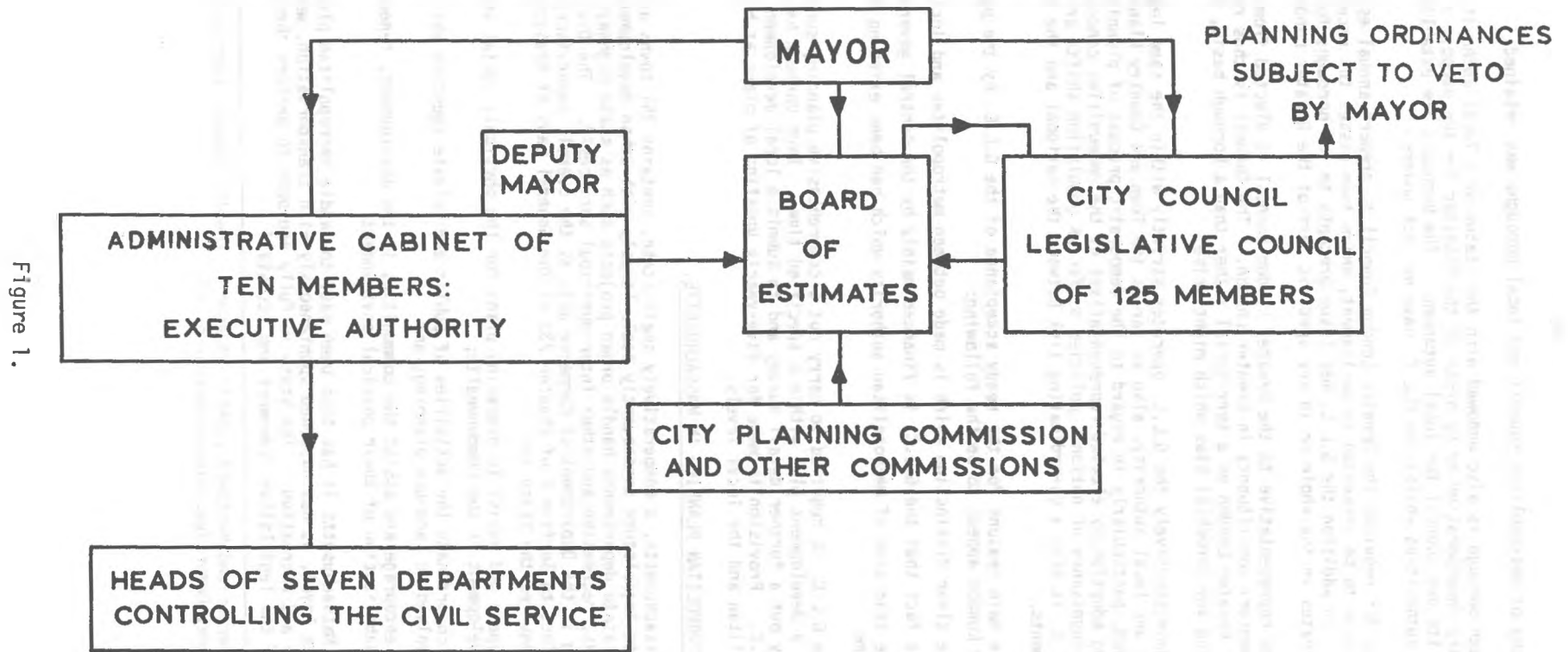


Figure 1.

P3

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FIGURE 1

hierarchy of metropolitan council and local boroughs was retained.

Each borough is also endowed with the status of a local authority by voluntary incorporation or by order of the Minister for the purpose of constituting its own council for local autonomy. The boroughs are established as the rating authorities whilst the G.L.C. have no such powers.

The Act requires the Greater London Council to prepare annual estimates of expenditure to be presented to parliament, which then passes the necessary 'Money Acts'. In addition the G.L.C. may issue precepts to the boroughs for the levying of rates in the whole or in any specific part of the Greater London area.

One representative to the Greater London Council is elected from each parliamentary constituency in Greater London. The Council is thus representative of Greater London on a territorial rather than a borough basis, thus obviating any parochial bias which might arise.

Administratively the G.L.C. operates strictly within the same legal framework as any local authority, also as far as the Town and Country Planning Act is concerned, particularly in regard to the democratic process of planning and planning adoption by elected representatives of the communities concerned. By taking cognisance of national policies as far as population shifts are concerned, the G.L.C. is also a co-ordinating link between the national and the local governments.

The main reasons for the ready acceptance of the G.L.C. by the people of Greater London appear to be the following:

- (a) the clear distinction which is made between metropolitan and local functions;
- (b) the fact that the G.L.C. is financed mainly by the central government; and
- (c) the tradition of metropolitan authority which had been existing for a long time.

The G.L.C. is required to carry out a comprehensive planning survey and to produce a development plan within a specified time. Each borough has, in turn, to carry out a further detail survey and to submit a local development plan to the G.L.C. Provision is made for five-yearly updating of plans at both the metropolitan and the local levels.

4. METROPOLITAN PLANNING IN MASSACHUSETTS:

Massachusetts, a comparatively small state, contains 351 towns and cities, and state legislature consequently deals largely with urban development. The several state departments handle urban projects such as state highways, water resources, recreation and other inter-municipal services¹). The Division of Planning in the Department of Commerce acts as the overall supervisory body to give effect to Section 2 of Chapter 23A of the General Laws of Massachusetts which requires the State to:

- (a) prepare and assist in preparing plans for the physical, social and economic development of the Commonwealth;
- (b) to co-ordinate the activities of public and private agencies which are involved in land-use planning; and
- (c) to encourage and assist the communities in the development, renewal and rehabilitation of their physical environment.

In Massachusetts it has thus been easy to handle metropolitan planning on the State level, as has happened spontaneously with transportation, water supply, sewerage and recreation. The State is fully equipped to perform these tasks by means of the legislative framework and its staff.

1) Meyerson and Banfield (1966): *Boston: The Job Ahead*. Harvard University Press, Cambridge, Massachusetts: p. 11.

An important development in the United States has been an amendment to the Housing Act, which was introduced on the 10th August, 1965. Amending section 701(g) empowers the Federal Government to make grants of up to two-thirds of the cost of planning research and the framing of metropolitan development plans. This grant is only made where all the political agencies within the area participate in the planning process.

'... the (Housing) Administrator is further authorised to make grants to organisations composed of public officials whom he finds to be representative of the political jurisdictions within a metropolitan area or urban region for the purpose of assisting such organisations to undertake studies, collect data, develop regional plans and programmes and engage in such other activities as the Administrator finds necessary or desirable for the solution of the metropolitan or regional problems ...'

This provision has strengthened the position of the Massachusetts State Government in effecting co-ordination among the several urban planning agencies, particularly in development projects which are financed by the Federal Government, such as housing, where the State Government previously had but little authority.

Where federal funds are applied for under Section 701 (g) of the Housing Act, the State Department of Commerce and Development acts as the agency to handle the applications¹⁾.

To qualify for the two-thirds subsidy:

- (a) a representative of the State Department of Commerce and Development has to attend the meetings of the City Planning Board;
- (b) planning consultants have to provide, in advance, an estimate of the research and planning costs;
- (c) the towns must secure their share of the costs - amounting to one-third of the total - by a special town meeting.

Where federal funds are provided for development projects (apart from the subsidy for their planning) the Division of Planning of the Department of Commerce and Development has to actively participate in their planning.

Without the metropolitan planning councils and the State Planning Division, co-ordinated planning by the local authorities would have been well-nigh impossible. There can be no complete home rule by local authorities in the present situation where a large number of autonomous agencies handle separately different functions. In the Greater Boston area alone there are also five county governments, 17 city governments, and 59 town governments.

Throughout the United States amendment 701 (g) is being invoked for the establishment of 'Councils of Government' which may also be regarded as organisations for metropolitan planning. At the present time they are still oriented to project planning, but the Washington Council of Government and others of the newer organisations are already adapting to the more comprehensive role of metropolitan planning.

c. GENERAL CONCLUSIONS:

This comparative study of metropolitan planning authorities illustrates three principles which may serve as a guide to intermunicipal planning in South Africa.

1) Massachusetts Department of Commerce and Development, Division of Planning, (1966): *Progress Report, June 1966*: Commonwealth of Massachusetts, Boston.

- (a) It is difficult to introduce successfully metropolitan planning authorities where the communities are not traditionally oriented to this form of control. Municipal federation was introduced apparently as a totally new concept in Toronto. In the new proposals where municipalities are to be grouped together, with a consequent loss of identity, further continuing resistance to metro is to be expected. The Greater London Act, on the other hand, has merely adapted the previously existing framework to a new scale. Representation on the G.L.C. is territorial, according to electoral wards and not by borough, which underlines the fine distinction between the G.L.C. as representative of the people for metropolitan planning rather than as a super-municipal authority;
- (b) The inadequacy of a voluntary planning body in contrast to statutory agencies proves the need for purposeful enabling legislation. The futility of voluntary planning agencies has also been experienced in South Africa with Joint Town Planning Committees that have been given no definitive powers;
- (c) The role that the State Government of Massachusetts plays, as a central authority statutorily endowed with strong powers of control, is an important lesson for South Africa where the Provincial Councils have also been endowed with powers of control over municipal planning.

6. A RATIONALE FOR PLANNING:

In regard to local planning, the British practice of public consultation and adversary procedure of dealing with objections has gained a firm foothold in South Africa by tradition and legislation. However, some inroads are being made into the democratic principle of acceptance of planning proposals by the municipal council as a body representative of the community voice.

It has been shown by Van Reenen¹⁾ that the concept of freehold land ownership has of necessity had to undergo a change with the shift of the human habitat from the rural to the urban scene. By common law, land use is unrestricted, providing nothing is done to infringe the principle of good neighbourliness. With an increasing density of occupation and variety of uses, this has become impossible without extensive control and planned allocation of land uses. What the city dweller has lost in freedom of use he has gained in countless amenities such as social advantages of aggregation and opportunities for employment. In return he must submit to controls that will ensure the preservation of these amenities.

As held by Polsby²⁾, planning is an interference with ownership and use of land - inflicting hardship in some cases and bestowing benefits in others - which can be tolerated in a democratic society only if the community agrees and accepts the specific terms of such interference.

In practice the community must necessarily be represented by an elective body representing community interests and pressure groups such as finance, credit, employers, employees, social status and technological expertise. It is correct, therefore, that planning should, in the final instance, be accepted by the local authority or some higher representative body.

But, as far as metropolitan planning is concerned, only inter-municipal development projects such as roads, sewage disposal works and other services are involved for which the land has to be bought or expropriated. No zoning or restriction of use is imposed on individual owners. Damages to property, are

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- 1) Van Reenen, T. H. (1967): *Wetgewing oor eiendom* : Third South African National Survey Conference, Johannesburg.
 - 2) Polsby, Nelson W. (1963): *Community Power and Political Theory*: Yale University Press, New Haven and London, p. 128.

directly assessible. Consequently the adoption of plans by an elected authority is not necessary, and planning could be far more efficiently dealt with by a team of technologists.

7. PROPOSALS FOR METROPOLITAN PLANNING IN SOUTH AFRICA:

Before attempting to formulate a proposal for a metropolitan planning authority for South Africa, a clear distinction must be drawn between regional planning and metropolitan - or inter-municipal - planning. Regional planning in South Africa is aimed at the application of the national development policies within a socio-economic regional setting. These policies relate to a sustained and balanced economic growth through the planned exploitation of the national resources. Metropolitan planning, on the other hand, is concerned mainly with the provision of inter-municipal services such as arterial roads, water, electricity and sewerage mains, cemeteries and possibly the large-scale zoning of factories, housing and recreation.

The hierarchy of planning authorities for South Africa will have to devolve on the existing three-level administrative organisation of central government, provincial administration and local authorities.

The constitution provides for the delegation of authority from parliament to the Provincial Councils. The powers of the latter have also been amplified and added to from time to time by the Financial Relations Acts.

At the local level the initiation of municipal planning vests in municipal councils in terms of provincial town planning ordinances which prescribe in detail the planning procedures. The Director of Local Government administers town planning in each provincial administration.

Municipalities may, in a few instances, also act as agents for the Central Government by direct delegation of authority. These functions include health, housing and Bantu administration.

The Provincial Administrations already handle certain inter-municipal functions such as roads, education and hospitals, whilst housing, location of industry, railways and regional water supplies are handled by Central Government departments. Metropolitan planning authorities in South Africa would therefore assume the form of the Councils of Governments as they are evolving in Massachusetts under the direction of the State Government.

Except in the case of large metropolitan complexes (such as the Pretoria-Witwatersrand-Vereeniging complex) there would be no need for an elected metropolitan planning body. A planning directorate could be established to consist of representatives of:

- (a) those government departments which handle such inter-municipal projects as community development, regional water schemes, transportation, higher education, Bantu administration and location of industries;
- (b) those provincial departments which handle roads, hospitals, education, recreation and local government;
- (c) the municipalities within the planning area;
- (d) public utility corporations handling regional services such as electricity and water supply. (To this could be added a much-needed new corporation to handle sewage disposal works on an inter-municipal scale).

Figure 2 illustrates the composition of the suggested new metropolitan planning authority.

This planning directorate, representative of all undertakers of regional public works, would formulate development policies and produce a master plan on the basis of sectional surveys carried out by the individual organisations concerned. The assistance of planning consultants could also be invoked.

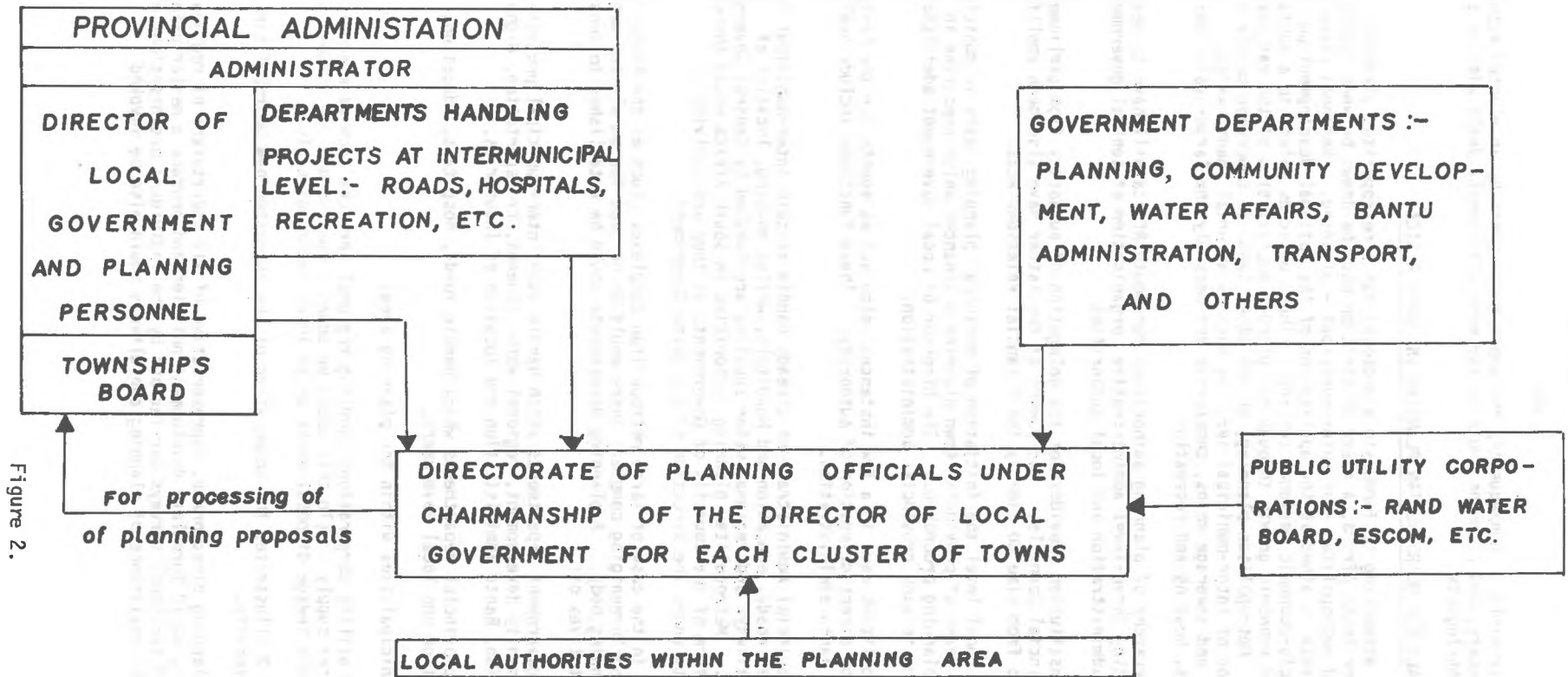


Figure 2.

INTERMUNICIPAL PLANNING ADMINISTRATION SUGGESTED

FIGURE 2

Local authorities would retain their identities and planning autonomy in local matters and would remain the rating authorities. Approved metropolitan plans become obligatory on the individual municipalities and serve as a framework for their development plans.

Most of the regional construction projects are already, under present conditions, the financial responsibility of the Province, the Government, the municipalities or the public utility corporations.

Approved metropolitan master plans can constitutionally only become binding on the local authorities and the Provincial authorities concerned. As far as the central government departments are concerned, the planning directorate would serve as a vehicle for consultation and co-ordination and formulation of policies only.

Obviously there would have to be a planning directorate for each metropolitan area or cluster of municipalities growing together.

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THE MODERN CITY, ITS PROBLEMS CAUSES AND CURES:
THE CASE OF DALLAS*

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I. The city and its problems are in the centre of intellectual, political and scientific concern today. It seems that cities everywhere - an emerging city in an underdeveloped nation as well as a major metropolis in a developed community - are facing a set of complex social and economic problems such as ghettos, racial problems, division of their inhabitants by ethnic origin and church affiliation, slums, unemployment and many others. These problems may, and indeed they do, differ from one city to another. Yet, they somehow appear equally difficult to cope with.

My point of departure is that most cities seem anxious to attack some of their specific short-run problems, but much less eager to develop long-run programmes for eliminating their causes. Housing projects for poor negroes in some large American cities are a good example. Most of these housing complexes deteriorate after several years, contributing neither to social integration of their tenants into the community life, nor to their economic improvement which could justify the cost of investment. But more about this later on. For the moment, let it be noted that the purpose of this paper is to analyse what I believe to be the two fundamental causes of most city problems, and to demonstrate how a major American city, the city of Dallas, has implicitly understood them and developed its own long-run programme for reducing their impact on city life.

II. We can distinguish between two forms of life in every community: the communitarian forms of life and the contractual forms of life¹⁾. The communitarian forms of life are defined as the accepted principles of behaviour, such as the prevailing concepts of justice, truthfulness, human relations and property rights. An example of this would be the unquestioned authority of the head of the family in many regions and rural areas. The contractual forms of life serve the purpose of harmonising, or equilibrating the different interest of the community members within the framework determined by the communitarian forms of life. In this case an example would be a contract between heads of two families to have one's daughter marry another's son. That is, the content of contractual agreement is constrained by the prevailing communitarian forms of life - the head of family can veto his daughter's choice of a husband.

Consider a traditional community as it moves along through time. The role of its rulers would be limited to the supervision of contractual agreements, and to keeping them in conformity with the prevailing principles of behaviour. A number of communities in Africa and Asia, where life has not changed for centuries, offer examples of this type of communitarian forms of life. It is not to imply that those communities are problem-free. The point is that their problems are dealt with within the framework of communitarian forms of life which the community members understand. As a result the solutions to their problems are known in advance and respected, although not necessarily liked, by all. Moreover, the years of accumulated experience (wisdom) will contribute to some

1) See G. Briefs, (1957): 'The Ethos Problem in the Present Pluralistic Society.' *Review of Social Economy*: March.

* The author is grateful to Mr. E. Zorn, senior vice-president and economist of the Republic National Bank of Dallas, and Professor M. Greenhut of Texas A&M University, for their help, and to the ReIm Foundation and the Research Council of Texas A&M University for research grants during which the paper was written.

improvements in the execution of contractual agreements - the head of the family will learn how to choose a better husband for his daughter by observing the history and behaviour of various families. These improvements, however, will only introduce changes in the data of the prevailing social order, but not add new phenomena to the community life. To put it differently, only some quantitative changes could be expected to take place within the framework of a 'routine' life community.

It follows that a distinction ought to be made between two types of social change in a community¹⁾: the *quantitative* change, that is improvements within the established social order, and the *qualitative* change, that is a change in the communitarian forms of life as well.

Let us conclude this brief excursion into the problem of social order with two remarks:

- (a) The two types of social change outlined here satisfy the criteria of broad applicability and identifiability; and
- (b) their full comprehension is a pre-requisite for understanding the causes of most city problems.

III. Consider a community which is experiencing continuous economic growth: the most fundamental characteristic of economic growth, irrespective of the stage of development of the country, historically has been the migration of people from rural into urban areas, and from one region to another. It means that the migrants are bound to find themselves in a completely different social environment, often alien to the communitarian forms of life they respect and understand. It also means that solution of their problems might not be known to them in advance, nor understood, nor respected by them. Nowhere has it been truer than in the U.S.A. that cities are inhabited by people who came from rural areas and various regions and countries; people of different colours, faiths, ethnic origin and social background.

Many characteristics of the modern city, (such as division of people by church affiliation, ethnic and regional origin, and the rise of ghettos), reflect an attempt on the part of its inhabitants to retain their old forms of life. It is an escapism, so to speak, caused by social displacement of these people; consequently the picture of the modern city has become one of numerous alien islands. The resulting street riots, zoning battles, civil protests and various aspects of alleged economic discrimination are forms of competition between mutual aliens²⁾. They are a consequence of the city's inability or unwillingness to create the new communitarian forms of life acceptable to all social groups.

An important implication that could be derived from the previous section is that social integration cannot be achieved by issuing laws and orders from above. Such laws and orders would represent an imposition of the leaders' concepts of social life upon the rest of a heterogeneous community, and would only incite some groups to a greater resistance and alienation from others. The city problems would become more acute, and the means for dealing with them more violent. A successful social integration must obviously proceed from below, engaging all social groups in a free and open-to-all dialogue, and hoping that a general consensus on what the city life should be, will eventually be reached.

The process of social integration - i.e. the rise of new communitarian forms of life, through a genuine dialogue between all the diverse social groups and enlightened leadership - is, and in fact must be, slow, and its progress gradual.

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- 1) See S. Pejovich, (1968): 'Community Leadership and Progress': *New Individualist Review*: Winter.
 - 2) This clearly emerges from the report of the President Johnson's *National Advisory Commission on Civil Disorders*, March, 1968.

Yet, if consensus on what the city life should be were reached, the urgency of many city problems would be reduced if not eliminated. It will be shown below that the city of Dallas has approached the problem in exactly this fashion.

Let us now turn to the second major cause of city problems. On the one hand, economic growth instills the people with hope that their economic conditions will improve, or at worst not deteriorate. On the other hand, city slums and unemployment destroy this hope and tend to incite some people to seek their improvements by way of violence - Los Angeles is a good recent example. Moreover, various administrative programmes, ranging from direct welfare payments to public works, can be only partially successful. They help some people to improve their lot; but they do not, and I believe cannot, contribute to a permanent reduction in the intensity of these problems.

To get to the root of the problem of unemployment and slums, consider an agreement between two parties to exchange goods or services (including labour). It must be presumed that at least one party of the contract expects to be better off, to reach a higher indifference curve so to speak, after the contract is executed than before. Otherwise one or both of them would not accept the deal. If a voluntary contract were expected to improve the economic welfare of both parties to the contract, or of one of them, leaving the other as well off as before, an increase in the scope of contractual activities would lead to an improvement in the community's welfare¹). Thus, the major problem of economic betterment in a community is one of creating the environment conducive for carrying out an ever-increasing number of contractual activities. This is equivalent to saying that the major problem is one of creating the environment conducive for entrepreneurial activities²). It follows that any outside interference with the terms of contractual agreements, such as price controls, minimum wage law, and equal pay for equal work, would help some people; but it would also lead to a reduction in the scope of contractual agreements, and thus have a negative effect on the economic welfare of the community as a whole. An example is given in Appendix B, page 377 below.

The point is that unemployment and slums are, at least in part, caused by outside restrictions on man's freedom to seek most preferred contracts, given the other people's rights to do likewise. Moreover, there exists an additional reason for unemployment coterminous with economic growth. New opportunities created by economic development cannot be beneficial to all workers in the labour force. The economic position of those with lesser ability, and/or inadequate information about new opportunities, points inevitably to an undesirable impact on many. If the productivity of some workers rose at a slower rate than the minimum rate, and if the developing changes in technology and product-demand rendered the skills of some other workers unmarketable, the spread of unemployment becomes inevitable, even though the community might be enjoying a period of prosperity³).

To summarise, the ideas presented in the last two sections of this paper indicate that the two major causes of most city problems are:

- (a) the social displacement of the people who came into the city from different social environments; and
- (b) the reduction in the scope of contractual activities, *via* various institutional interferences coupled with underinvestment in human capital. The proposed policies which would attack city problems at their very roots are:

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- 1) This is, after all, the most fundamental proposition upon which the concept of free market economy is built.
 - 2) This proposition follows from Schumpeter's theory of economic development.
 - 3) See S. Pejovich, (1968): 'Automation and Technical Schools', *Review of Social Economy*: March.

- (a) the search for new communitarian forms of life acceptable to all social groups; and
- (b) return to classical prescriptions for the organisation of economic life coupled with a greater attention to the problems of investment in human capital.

IV. Let us now turn to the city of Dallas and its problems. Dallas ranks among the top twenty urban centres in the U.S.A. It is primarily a financial, merchandising and light manufacturing centre. Moreover, it is one of the centres of the world's petroleum industry, the second largest inland cotton market in the world, and the home of more insurance companies than any other city in America.

Dallas is the largest city in the U.S.A. with the Council-Manager form of government. The council consists of nine elected members who serve as a policy-making body. The manager is employed by the Council and is chief administrator. The Council-Manager form of government provides for a clear differentiation between the policy-making and administrative functions of government. It also blends democracy and efficiency. Some detailed statistical data about the city of Dallas are contained in Appendix A. In December 1965 a group of 27 civic and business leaders launched the 'Goals for Dallas' movement. In this section I will attempt to relate their work and ideas to the ideas presented above¹).

The formulation of the goals for Dallas, and agreement on plans for their achievement, have proceeded in three stages - Goal-Setting Stage; the Programming Stage; and the Assessment Stage.

Work on the *Goal Setting Stage* began in early 1966, and involved the following steps:

- (a) Thirteen essays describing all the various aspects of life in the City of Dallas were prepared by prominent Dallas scholars, civic and business leaders.
- (b) In June 1966, 87 citizens, representing all age levels, many occupations, and various racial and religious groups, met to discuss and recommend goals for Dallas. After four days of intensive work they reached consensus on 98 specific goals in the following 12 areas: the government of Dallas; the design of Dallas; health; welfare; transportation; public safety; elementary and secondary education; higher education; continuing education; recreation and entertainment; and the economy of Dallas. The recommended goals and the essays were published, and 17,000 copies were distributed to various civic groups, business groups, and interested citizens.
- (c) Hundreds of discussion sessions were organised by local churches, civic clubs, chambers of commerce and other organisations in the early fall of 1966, in order to assure the broadest possible citizen participation in reviewing the recommended Goals for Dallas. These sessions culminated in 33 widely-advertised public meetings with 6,380 citizens participating. They gave their reactions and suggestions on each of the 98 proposed goals.
- (d) In February 1967, the original group of 87 citizens met to review the goals in the light of suggestions made by Dallas citizens. The group modified 60 per cent of the 98 goals, and added 12 new ones, bringing the total to 110 goals. A booklet containing the revised goals was published and made available to the public. Copies were sent to each of the 6,380 citizens who actively participated in the public meetings.

1) The Analysis presented in this section is based on the following sources: (a) *Goals of Dallas*, (1966): Goals for Dallas Office, Dallas; (b) *Goals of Dallas Revised*, (1967): Second Edition, Goals for Dallas Office, Dallas; (c) 'Economic Profile of the Dallas Standard Metropolitan Statistical Area' *National Planning Association Regional Economic Projections Series: Report No. 65-III*; and (d) *Goals for Dallas: A Program of Citizen Participation in Setting and Implementing Community Goals in a Major American City*: (unpublished paper, January 1968).

The purpose of the *Programming Stage* is to formulate the steps needed to achieve each goal, estimate the costs of their accomplishment, and assure the community of widespread public involvement. The following steps are planned:

- (a) Early in 1968 twelve *Task Forces* were formed, one for each set of goals. Their function is to recommend the plans for achieving each specific goal in their respective subject areas; identify organisations which should participate in the execution of plans; indicate alternative solutions; estimate costs; and propose a time-table of actions. Each Task Force is comprised of a part-time worker, and about 20 citizens, and is assisted by local experts and consultants from outside the city. The Task Forces are expected to complete their work by the early fall of 1968.
- (b) A *Study of Dallas Economic Potentials* is now being prepared. It will project the values for the next ten to fifteen years, of goods and services produced, income, and other key economic variables. Thus it will provide an analytical framework within which the goals, and the finances needed to achieve them, could be evaluated.
- (c) A *Study of Community Characteristics* is now being planned. The purpose of this study is to ascertain the factors which have played a major role in shaping the City of Dallas and its life, and the expected effect of these factors on the future of the area.
- (d) With the above three studies in hand (i.e. Task Forces, Economic Potentials, and Community Characteristics), a summary committee - which includes the chairmen of the 12 Task Forces - will schedule: (i) the proposed action to be taken each year for the next 10 to 15 years; (ii) the organisations to be involved; and (iii) the estimated annual costs for each of the goals.
- (e) The recommendations of the Summary Committee are expected to be made available by the end of 1968. Once again, a series of public meetings will be held early in 1969 to give every citizen an opportunity to express his criticism of the proposed plans and costs. On the basis of suggestions and recommendations made by Dallas citizens, the recommended programme for implementing the goals will be modified and published.

The purpose of the *Assessment Stage* is to regularly review progress toward achieving the goals, and to revise programme schedules periodically in order to take into account changed circumstances.

If my analysis of the first major cause of city problems is correct, the city of Dallas has certainly started along a path which could, in time, eliminate most of them. Instead of trying to cope with its problems as they appear, the city of Dallas has designed a long-run programme aimed at eliminating their cause. The willingness of the city to search for, and eventually create, its own communitarian forms of life, is a remarkable example of planning in a democratic community. The Goals for Dallas programme is a testimony to the wisdom of the city leaders who have, even before the Goals began to be implemented, made Dallas one of the cleanest and most liveable cities in the U.S.A. It should not be forgotten that Dallas is one of a very few, if not the largest, American city which has not experienced the riots, disorders and protest marchers so fashionable today.

V. The second cause of city problems - reduction in the scope of contractual activities - has never been much of an issue in Dallas. The city is a bold illustration of the workings of the free enterprise system: 'the blending of private capital with natural and human resources'. The spirit of entrepreneurship, individualism, and respect for private property rights, are clearly visible and strongly felt in the city.

Figures 1 - 3 in Appendix A, provide an interesting insight into what might have been an important manifestation of the spirit of entrepreneurship. They give a breakdown of employment growth attributable to (i) national growth; (ii) the growth that might have been expected for industries that were expanding faster than the economy generally; and (iii) internal growth, i.e. the ability of

some business establishments in Dallas to do better than industries elsewhere. 'Thus, if Dallas had merely been able to share in the growth of the nation, and if it had not changed its industrial mix, only half of the gain in employment actually achieved would have been expected'¹⁾. If this phenomenon could be attributed to the supply of entrepreneurship in Dallas, and I believe it should, the recent remark made by a prominent Harvard professor that business leadership is the scarcest resource would suggest that the city is assured of ample employment opportunities in the years to come.

The banking community in Dallas has made an important contribution to the city growth. Through its quite liberal credit policies it has made it possible for the potential entrepreneurs to carry out an ever-increasing number of contractual agreements, and thus to continue to improve the community's welfare. Loan-to-deposit ratios of Dallas banks are above 60 per cent, while the average for the U.S.A. banks is not higher than 50 per cent.

The greatest impediment to the full utilisation of Dallas' economic potential is a short supply of locally-produced human capital. On the level of higher education, the number of people trained by 15 degree-granting North-Texas Schools falls well below one-half of what is needed. Texas Instruments, a large Dallas firm, estimates that by 1974 it will need close to 5,000 people with Ph.D. or M.S. degrees - 90 per cent of them in engineering and science. Yet, only 63 doctorates were conferred in the North Texas area in 1965, and none were in engineering. The programme of vocational education in Dallas is also lagging behind other major American cities. This lack of locally-trained professional and technical people, and the subsequent costly and difficult import of human capital, leave some potentials unexploited and reduce the scope of contractual agreements.

VI. I conclude this paper with an opinionated prophecy: the modern city is going through the qualitative social change. Its major problems arise from the fact that the old communitarian forms of life tend to disintegrate. Yet, they are not being replaced by new ones. And, unless the city and its leaders pay more attention to the problem of social integration from below through a genuine dialogue, we shall continue to spend millions of dollars on solving some specific problems and witness a few successes, and we shall have more Detroits and fewer Dallases.

1) *Goals for Dallas*, (1968): op. cit., p. 263.

APPENDIX A

Statistical Information About the City of Dallas

TABLE I

SOURCES OF EMPLOYMENT GROWTH, DALLAS, IN THE 1940's and 1950's, BY INDUSTRY
(in thousands of persons)

INDUSTRY	Total Employment			Components of Employment Change							
				1940-1950				1950-1960			
	1940	1950	1960	Natl. Growth	Indus. Mix	Dallas Share	Total Change	Natl. Growth	Indus. Mix	Dallas Share	Total Change
Total Industries:	201.2	314.9	443.3	53.7	2.3	57.6	113.6	48.7	14.5	65.2	128.4
Agriculture:	25.6	16.5	11.0	6.8	-11.4	-4.5	-9.1	2.6	-8.9	.9	-5.5
Manufacturing:											
Electrical & Other mach.	2.4	6.2	23.9	.7	1.6	1.5	3.7	.9	1.9	14.9	17.7
Food & kindred products	5.4	8.1	12.3	1.4	.1	1.2	2.7	1.3	1.1	1.8	4.2
Other transportation equip.	.1	5.7	11.3	*	*	5.6	5.6	.9	5.0	-.3	5.5
Apparel	4.5	8.2	10.1	1.2	.3	2.2	3.7	1.3	-.5	1.1	1.8
Printing & publishing	3.5	5.8	9.9	.9	.3	1.1	2.3	.9	1.0	2.1	4.0
Chemicals and allied pro.	1.2	2.4	3.8	.3	.3	.6	1.2	.4	.4	.5	1.4
Lumber, wood pro. & furn.	1.7	3.0	3.4	.5	0	.9	1.3	.5	-.8	.7	.4
Motor vehicles & equip.	1.6	2.2	2.4	.4	.4	-.2	.6	.3	-.4	.3	.2
Textile mill products	1.9	1.7	1.1	.5	-.4	-.4	-.2	.3	-.7	-.1	-.5
Other & miscellaneous	6.4	12.4	19.6	1.7	.4	3.9	6.0	1.9	.4	4.9	7.2
Total (Manufacturing)	28.8	55.8	97.7	7.7	3.0	16.3	27.0	8.6	7.4	25.9	41.9
Retail Trade:											
Eating & Drinking places	6.3	11.2	11.4	1.7	1.5	1.6	4.9	1.7	-1.0	-.5	.2
Food & Dairy product. stores	6.7	8.8	10.9	1.8	-.8	1.1	2.1	1.4	-1.5	2.3	2.1
Other Retail trade	23.7	40.0	48.8	6.3	2.9	7.1	16.3	6.2	.8	1.8	8.8
Total (Retail Trade)	36.7	60.0	71.1	9.8	3.6	9.8	23.3	9.3	-1.8	3.6	11.1
Wholesale trade:	10.9	17.5	25.5	2.9	4.1	-.4	6.6	2.7	-.7	6.0	8.0
Medical, other Pro. Services	14.4	25.4	45.0	3.8	2.5	4.7	11.0	3.9	10.8	4.8	19.6
Hotels, other personal ser.	11.2	13.7	16.1	3.0	-1.8	1.4	2.5	2.1	-1.5	1.8	2.4
Business & Repair serv.	5.0	8.8	13.9	1.3	1.2	1.2	3.8	1.3	.6	3.1	5.1
Entertainment, recreation ser.	2.4	3.7	4.4	.7	*	.6	1.2	.6	-.5	.6	.7
Contract construction:	12.6	29.5	32.3	3.4	5.1	8.4	16.9	4.6	-1.5	-.2	2.8
Finance, insurance, real estate:	12.2	19.6	31.2	3.2	.5	3.7	7.4	3.0	4.9	3.7	11.6
Trucking & warehousing	3.1	5.9	9.4	.8	.4	1.6	2.8	.9	.8	1.8	3.5
Railway & railway express	3.9	5.2	3.5	1.0	-.2	.5	1.3	.8	-2.5	-.1	-1.7
Other transportation	2.4	6.0	8.5	.7	.8	2.1	3.6	.9	-.8	2.4	2.6
Public Administration	5.3	12.0	16.0	1.4	2.3	2.9	6.6	1.9	1.4	.8	4.0
Armed Forces	.1	1.2	1.5	*	.3	.8	1.1	.2	.7	-.6	.3
Private Households	17.3	14.4	16.5	4.6	-9.8	2.2	-2.9	2.2	.2	-.2	2.2
Utilities & Sanitation ser.	3.4	5.7	7.0	.9	.6	.8	2.3	.9	-.1	.5	1.3
Communications	3.0	6.9	6.7	.8	1.6	1.5	3.8	1.1	*	-1.2	-.2
Mining:	1.1	3.4	5.2	.3	-.3	2.2	2.3	.5	-1.5	2.8	1.8
Forestry & Fisheries	*	*	*	*	*	*	*	*	*	*	*
Industry not reported	1.8	3.8	20.8	.5	-.1	1.7	2.1	.6	7.5	8.8	16.9

SOURCE: Standard Metropolitan Area Data, Office of Business Economics, U.S. Department of Commerce.

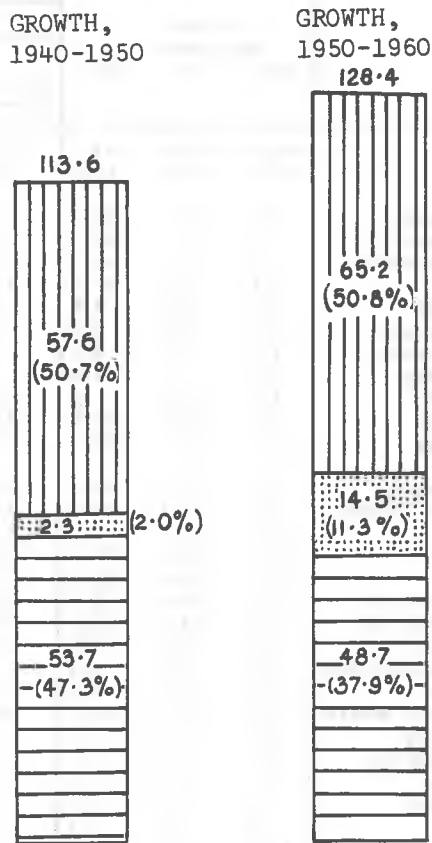
* Signifies less than 50 persons.




FIGURE 1

SOURCES OF TOTAL DALLAS EMPLOYMENT GROWTH

In the 1940's and 1950's

(in the thousands of persons)



-  National Growth
-  Industry Mix
-  Dallas Share

0 10 20 30 40 50

Scale in Thousands
of workers

TABLE II

EMPLOYMENT GROWTH, DALLAS, 1960 to 1966, BY INDUSTRY:

I N D U S T R Y	Number of Establishments		Employment (thousands of persons)				
	Jan 1960	Jan 1966	Jan 1960	Jan 1966	Net Change		
					Number	%	% of total
<u>TOTAL:</u>	<u>28,744</u>	<u>33,887</u>	<u>441.1</u>	<u>558.4</u>	<u>117.3</u>	<u>26.6%</u>	<u>100.0%</u>
Agricultural			10.4	5.6	-4.8	-46.2	-4.1
Non-Agricultural	<u>28,744</u>	<u>33,887</u>	<u>430.7</u>	<u>552.8</u>	<u>122.1</u>	<u>28.3</u>	<u>104.1</u>
Manufacturing	2,096	2,299	93.8	127.9	34.1	36.4	27.9
Non-manufacturing	<u>26,648</u>	<u>31,588</u>	<u>336.9</u>	<u>424.8</u>	<u>88.0</u>	<u>26.1</u>	<u>72.1</u>
Agri. services, forestry & fish.	72	89	.7	.8	.2	27.3	.2
Retail trade	9,106	10,862	79.1	101.9	22.8	28.8	18.7
Wholesale trade	3,223	4,132	41.2	52.7	11.5	27.8	9.4
Medical & Other professional ser.	3,523	3,967	21.7	34.4	12.7	58.4	10.4
Business and personal services	5,011	6,058	35.2	44.8	9.6	27.1	7.8
Contract construction	2,065	2,180	29.7	33.4	3.8	12.6	3.1
Finance, insurance, real estate	2,477	3,019	32.7	42.5	9.7	29.7	7.9
Transportation	473	551	23.2	27.1	3.9	16.8	3.2
Government and education	200	200	37.3	50.6**	13.3	35.6	10.9
Private households	n.a.	n.a.	14.7	14.9	.2	1.6	.2
Utilities	26	27	5.3	5.9	.6	10.9	.5
Communications	43	51	7.3	7.3	*	.1	.0
Mining	429	452	8.7	8.5	-.2	-2.3	-.2

SOURCE: Standard Metropolitan Area Data, Texas Employment Commission.

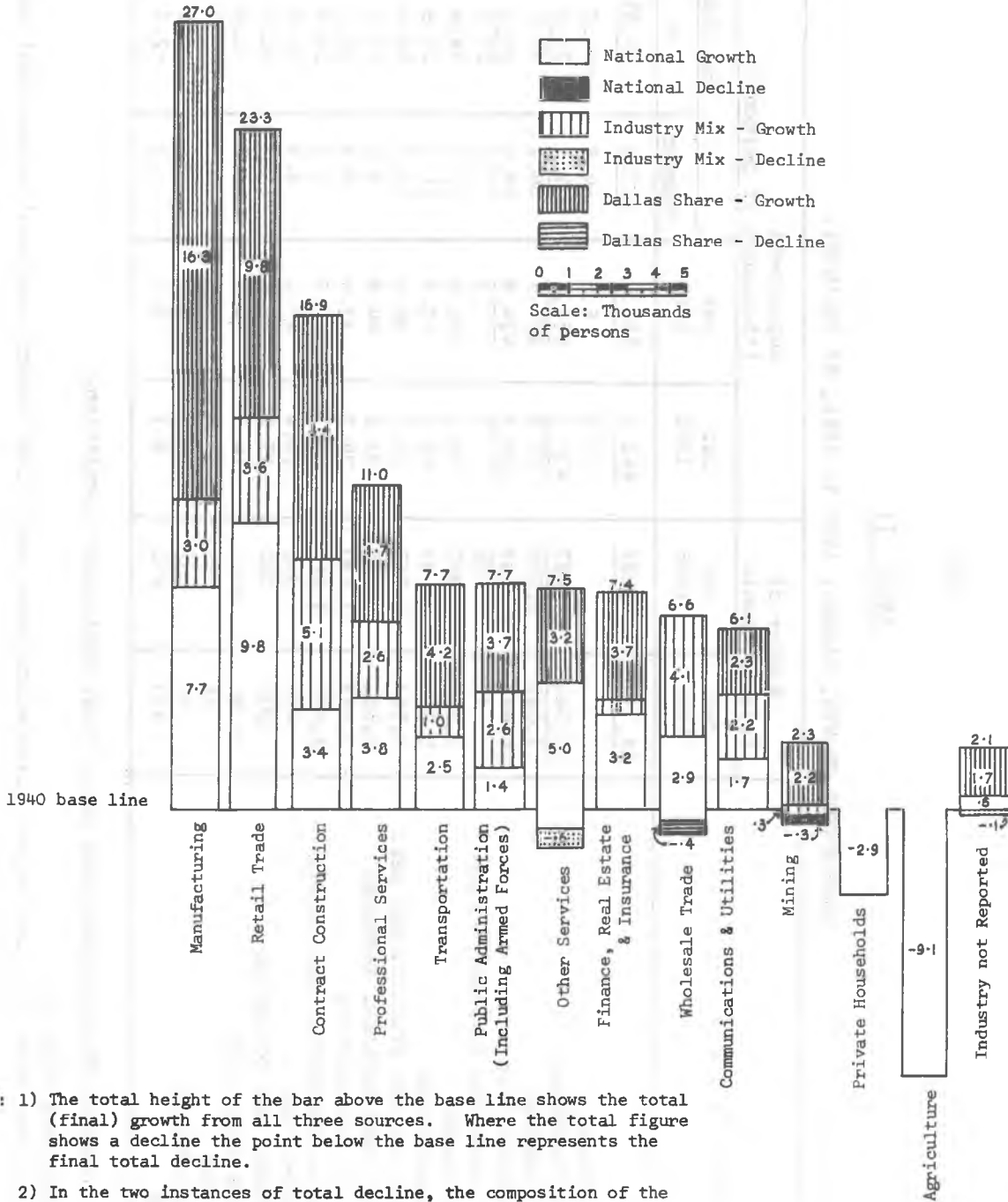
* Signifies Less than 50

** Signifies that this includes 26,600 State educational and 17,060 County and local educational employees.

n.a. = not applicable.

FIGURE 2

EMPLOYMENT GROWTH IN DALLAS, 1940-1950, BY TYPE OF INDUSTRY, IN THOUSANDS OF PERSONS



- NOTES: 1) The total height of the bar above the base line shows the total (final) growth from all three sources. Where the total figure shows a decline the point below the base line represents the final total decline.
- 2) In the two instances of total decline, the composition of the figures is not shown graphically, as this would be confusing. See Table I for details.

TABLE III

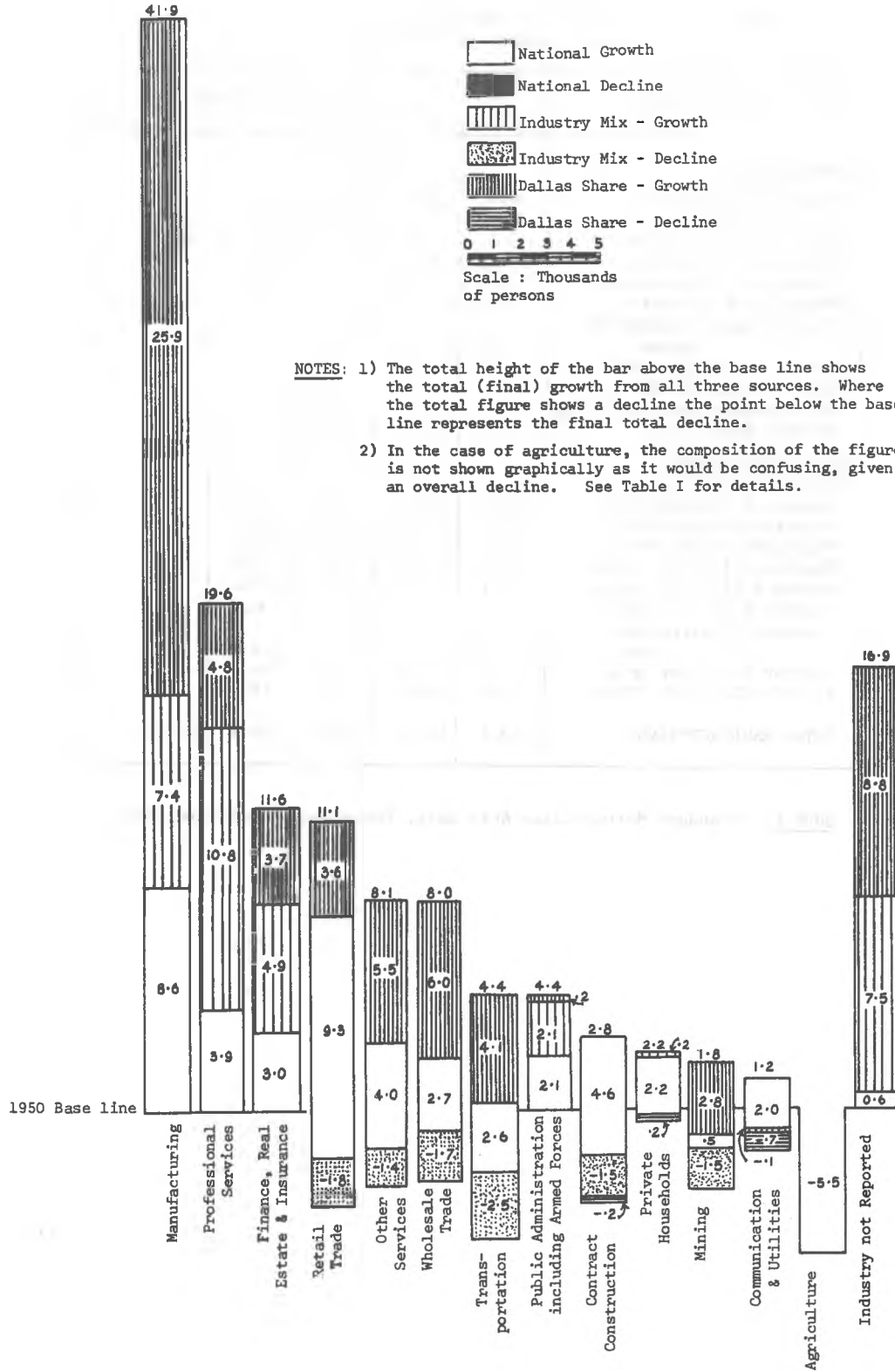
MANUFACTURING EMPLOYMENT GROWTH, DALLAS, 1960 to 1966
(in thousands of persons)

TYPE OF MANUFACTURE	Jan 1960	Jan 1966	Net Change		
			Number	%	% of total
DURABLE GOODS:					
Electrical machinery	13.6	35.9	22.3	64.0	65.3
Trans. equipment	16.4	12.7	- 3.7	-22.6	-10.9
Machinery (except Elec.)	7.6	11.4	3.8	50.0	11.1
Fabricated metal prod.	5.2	7.1	1.9	36.5	5.6
Stone, clay & glass prod.	3.2	3.8	.6	18.8	1.8
Furniture & fixtures	2.8	3.2	.4	14.3	1.2
Professional & scientific goods	1.0	1.5	.5	50.0	1.5
Lumber & wood products	1.0	1.3	.3	30.0	.9
Primary metal products	1.0	1.2	.2	20.0	.6
Miscellaneous manufacturing	1.1	1.4	.3	27.3	.9
DURABLE GOODS TOTAL:	52.9	79.5	26.6	50.3	78.0
NON-DURABLE GOODS:					
Food & Kindred products	13.3	14.4	1.1	8.3	3.2
Apparel & Finished prod.	11.4	13.4	2.0	17.5	5.9
Printing & Publishing	8.0	9.6	1.6	20.0	4.7
Paper and Allied Prod.	2.9	4.5	1.6	55.2	4.7
Chemicals & Allied prod.	2.7	3.7	1.0	37.0	2.9
Rubber & Misc. plastics	.9	1.6	.7	77.8	2.1
Textile mill products	1.0	.7	- .3	-30.0	- .9
Products of petroleum & coal	.6	.5	- .1	-16.7	- .3
Leather & leather prod.	.2	.1	- .1	-50.0	- .3
NON-DURABLE GOODS TOTAL:	40.9	48.5	7.5	18.3	22.0
TOTAL MANUFACTURING:	93.8	127.9	34.1	36.4	100.0

SOURCE: Standard Metropolitan Area data, Texas Employment Commission.

FIGURE 3

EMPLOYMENT GROWTH IN DALLAS, 1950-1960, BY TYPE OF INDUSTRY, IN THOUSANDS OF PERSONS



APPENDIX B

The following example, quoted from a popular textbook, shows quite clearly how an outside interference can reduce the scope of contractual agreements in a community by restricting freedom of its members to seek their most preferred positions.

'In many jobs where both men and women might do equally well, men usually are hired because of employer preference for male employees, but that preference is in part overcome by the lower-wage competition of women. Rather than try to prohibit women from access to these jobs in order to preserve the jobs for men, the men will advocate "equal pay for equal work" - at, of course, the wages now being paid to the men. Then the employer's incentive to employ women is reduced. Men can profess to be doing this for the benefit of women. Whatever the moderation, the effect is to protect men's jobs by reducing opportunity for women to replace men by taking a lower salary ... How can a Northern employee protect his wage level from the competition of lower-wage Southern labor?... by a minimum wage law above the prevailing level in the South, (of course). It should come as no surprise to learn that in the U.S.A., Congress' support for minimum wage laws comes primarily from Northern Congressmen who profess to be trying to help the poorer Southern laborers.

'... equal pay for equal work ...is opposed by those inferior people who understand that their source of market power lies in their accepting a compensating wage difference, however much they may regret their inferiority. Second, employers might object; but if they do, they will be confessing to a "greedy" desire for more wealth by employing inferior labor ... A third objection to these laws rests on the general ethic that they interfere with freedom of voluntary contract; this objection presumes that freedom of contract in the market is of some inherent merit'. (Alchian and Allen (1964): *University Economics*: Wadsworth Publishing Co., Belmont, California: pp. 486-7.

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DISCUSSION ON THE SECTION

'THE CITY - ITS POLITICS, GOVERNMENT AND GOALS'

The discussion was introduced by Mr. L. Swift, Civic Affairs Editor of 'The Natal Mercury', Durban. He felt that the main theme of the conference up to this stage, and the main theme of this section, was the need for change - the need to adapt to problems and to overcome problems. Listening to the papers he was reminded of what Dr. Chris Barnard had said on another occasion in connection with heart transplants - that there are tremendous problems which we have to overcome, but whatever man imagines can be overcome, can in fact be overcome and achieved. He felt that this type of situation applies to the tremendous problems and challenges in local authority government.

Mr. Swift commented on the fact that councillors from other towns, but not from Durban, were at the conference, and deplored the absence of Durban City Councillors from the detailed proceedings of the conference. He wondered whether this was in part due to a breakdown in communication between the University and the City Fathers.

In regard to Professor Harris' paper, Mr. Swift challenged the figure of 35% of the electorate typically *not* voting. In Durban the figure was, he thought, about 60% of those who had bothered to register to vote, and not 60% of the total electorate. He felt that this was rather a tragic situation, and the experience elsewhere had led him to believe that there was a tremendous amount of apathy. In regard to the 'city boss' - the political leader - he hoped that Professor Harris was not implying that the difference between privilege and corruption is that privilege becomes corruption when you become too greedy.

Dealing with Professor Paterson's paper, Mr. Swift felt that the remarks made on the Negro situation in America could give us cause for concern about our own policies. In regard to Professor Page's paper, he felt that the author's analysis was quite invaluable to any student of local government. Finally, he regretted that Professor Pejovich was not able to attend the conference, as apart from anything else, he (Mr. Swift), would have liked to question how Professor Pejovich came to the conclusion that Dallas was a trouble-free city. From what he knew of its history he could not quite see it this way.

The chairman of the section, Mr. E. Percy Fowle, (a member of the Executive Committee of the Natal Provincial Council), commented on the personal concern shown in each of the papers. He felt that in Professor Harris' paper there was a concern for more personalisation, and less faceless bureaucracy, in city politics. Professor Paterson, he felt, was concerned, in the construction of his institutional checks, with ensuring that an aristocracy of talent may be achieved. Professor Page had been concerned with handling the important tasks facing metropolitan authorities, and attempted to compose representation for provincial and central government departments as well as the local authority. Professor Pejovich was concerned with consensus planning for the future.

Questions were put to the speakers by Mr. W. D. Hurt of Durban; Mr. W. B. Knott of African Explosives and Chemical Industries Ltd., Johannesburg; Dr. N. E. Thomas of Salisbury; Mr. R. A. Pretorius, of the Natal Town and Regional Planning Commission, Pietermaritzburg; Mr. Morris of the co-ordinating Committee of the Ratepayers' Organisations of Durban; and two others whose names were not recorded.

Mr. C. A. Gibbs, town councillor of Queensburgh, commented on the danger of the larger and larger city of the future producing a state of affairs where it was necessary to condition the people to accept the conditions they were living under. He thought more and more computers would be required in the future to run cities, - '...the size of our cities is going to get so great that it is going to be beyond human brains to know what is going on in them ...' - and feared the position 'where man is computerised from birth to death, or from the cradle to the grave. Our cities are not well-run - they are very badly run. All over the world ... they are breaking down - it has been the theme virtually of this conference that the

cities are breaking down. ...we have seen good men made evil, wrangling with evil; straight minds grown crooked fighting crooked minds; our peace betrayed us and we betrayed our peace. Look at it well - this was a good town once. And I foresee that there will be no room for the individual, no room for the rebel in the city of the future. We will have to conform ... the little cloud is already there'.

Replying to a question, Professor Harris was at some pains to draw a distinction between 'politicking' and 'party politics'. Politicking is everywhere - the sort of thing we have in university senates for example, where one department is trying to manoeuvre against another or against all other departments for the small amount of money that is available. This politicking can be seen on any city council between the various departments competing for the limited funds. Party politics, by contrast, involves both national party politics and local party politics. There is also a form of local politics concerned purely with local issues such as whether one has trolley buses or diesel buses. In this case the local politicians are not absorbed by the inclinations of the national party politics.

Professor Page was given the problem of a central city where many people worked, but these people lived in the outlying local authorities and did not pay anything in the form of taxation to meet the needs and costs of running a central city. As he summed it up, it was a problem of people deriving the benefit of the city without paying for it. One way to deal with this was the old-fashioned utilitarian style of politics and economics, where the legislator inflicts pressure and pains at various points to act as a disincentive. He then asked Professor Paterson to say something about the American system of city taxing. Professor Paterson indicated that the earning tax is used in America so that if a person earns his income in a city and lives elsewhere, the city derives some benefits from the man's labours. However, Professor Paterson thought that this tax was just a stop gap for city finance. Despite this, its relative importance in financing city government in America today is great. In St. Louis, for example, there is a 1% earning tax, as in Kansas City. He felt that it was essential for those communities who could organise it to have such a tax system at the moment. However, it would be impossible to resolve the problems in regard to city deterioration without some form of combining urban units to make more efficient use of centralised management potential. This was coming slowly in the States. For example, there are already interlocking communities running up and down the eastern seaboard and the western seaboard. There is an interlocking community beginning to appear around the Great Lakes. However, Professor Paterson doubted whether in the near future there would be any tendency evident for the reduction of local urban control in favour of central control. Greater and greater efforts are being made in the States to get more regional authorities behind planning activities.

The real problem of city financing in the United States was that a tax regrading was needed - and had been needed badly for years. Such regrading would have to take into account the needs of the various levels of the country - municipal, state and federal levels. Professor Paterson thought it would be some-time before a tax regrading was undertaken. The results could come more rapidly in certain cities or metropolitan areas than others.

Professor Page mentioned that in 1963 provisions were made in England for the Greater London Council to draft its own financing regulations and submit them to the central government. In the Netherlands, all rates were collected by the central government and allocated to the various local authorities according to their needs. This would be a very good idea in South Africa, particularly, for example, for a town such as Stellenbosch which was primarily a university town and where so much of its property was derated that the town's income from rates was low. Consequently a town such as this would always be in financial difficulties. Likewise if this type of scheme was adopted, the central city providing for all the communities around it, and getting nothing in return, would be compensated. He felt that it would be a very good idea if, in the metropolitan areas, financing for particular purposes could come from the central government.

Professor Harris dealt with the question of electoral apathy and the burger-meester system. With the indisputable high level of local apathy in South Africa,

Local government is not democratic, because so few of the electorate take an active interest. Under such circumstances, some other form of local government should be considered, and the burgermeister system was one possibility. It was necessary to do something which would give local government a modicum of efficiency.

THE CITY — ITS FORM, ARCHITECTURE AND HOUSING

THE CITY - FAMILY LIFE AND RESIDENTIAL AREAS

E. Tollman

University of Natal

1. OBJECTIVE:

The intention of this paper is to review the relationships that have developed between the city, its housing and its people; to isolate the frightful ills with which these relationships appear to be afflicted; and to propose remedies which may overcome them. Although whole libraries have been filled with books on the study of these subjects, I have nevertheless deemed it advantageous to attempt a bird's eye view of these interrelationships.

2. THE CONDITION OF MAN:

'What is man?' asks Mumford. 'What meaning has his life? What is his origin, his condition, his destiny? To what extent is he a creature of forces beyond his knowledge and his control? To what extent is he a creator who takes the raw materials of existence, and refashions the world to which nature has bound him? ...In framing its answer each epoch in human culture ... leaves its characteristic mark!'

3. ENVIRONMENTAL FORCES TODAY:

The challenges and responses of our time are unparalleled in the history of mankind. Philosophically there have been the writings of Marx which have re-orientated all political activity. The most radical free economies today accept almost naturally systems of taxation and welfare for equalising the distribution of wealth. Socialism is an economic fact for the greater proportion of the world's peoples.

In the sphere of science and technology there has been a corresponding revolution. There has been a revolution in medicine; Freud's concept of the human unconscious, the near elimination of T.B., the discovery of the structure of the D.N.A. molecule, the invention of the Pill and recently the development of organ transplantation techniques, have permanently changed the prospect of human life.

There has been a social revolution brought about by a host of factors ranging from the Industrial Revolution to the Emancipation of Women. We have endured the slaughter of two World Wars, Hiroshima and the concentration camp revelations. The bomb as an instrument of genocide is an ever present threat. Youth is in revolt, frustrated with the present and anxious for the future.

It is within this context that we must review the forces which are changing the face of our cities, and must attempt to predict the likely future demands upon our cities.

4. THE EFFECTS OF THESE FORCES UPON OUR CITIES:

The waves of migrations to the city coupled with the population explosion (with all that this implies) has become so familiar and inevitable, that authorities concerned with physical planning have become numbed to its consequences. The control of day to day development has been substituted for any attempt at creative planning. The annexation by expanding cities of vast tracts of choice agricultural land has focused attention on the increased demand for food production and the need for land conservation, as the corollary to planned urban development.

The accelerating rate of private car ownership is creating intolerable congestion within the city. The excessive distances between living, working and recreational areas have resulted in an acceptance of the interminable journey to work as the natural consequence of city life. The psychological strain and the

wastage of manpower implicit in a protracted journey to work, when reduced to simple economic terms, becomes insane. The loads on movement routes, despite the most forward looking predictions, are exceeded almost as soon as the new movement ways are commissioned. Congestion is stimulated by the provision of traffic routes where these are not accompanied by a policy of decentralisation and the grouping of related city functions within rational access of one another.

The street systems found in most cities are a heritage of past eras, when they were designed for pedestrians and horse drawn vehicles. In spite of successive alteration they can no longer accommodate the needs of modern traffic. Inadequate street widths, the frequency of traffic intersections and the speed of vehicles have led to a frightening accident rate. The current prediction for a town of 100,000 in the U.K. is 1,500 accidents/year, 100 of them fatal. The twin problems of noise and air pollution are exerting constantly increasing stresses on man's physical and psychological well-being. Living conditions found in most cities today do not correspond to the most elementary biological and psychological needs of great masses of their population.

5. CREATIVE PLANNING AS AN ALTERNATIVE:

The solution does not lie in corrective measures which are restrictive and temporary, but through creative and comprehensive town planning, the restructuring of city zoning and circulation relationships.

Industry has tended to decentralise while commercial and administrative functions have become centralised. The middle classes have moved outwards to their suburban villas. The policy of racial segregation in South Africa has led to the labouring classes being forced into either obsolete central city areas or outlying locations. Thus the relationship of living to workplace for the lower income workers has become ever more extended, costly and dehumanised.

6. CENTRAL AND LOCAL GOVERNMENT CONTROL:

Since the beginning of the Machine Age, these conditions have been an expression of the ceaseless growth of private interests. The enormous task which faces planning authorities for the restructuring of cities on the one hand, and the private ownership of urban land on the other, represent two antagonistic forces. This sharp contradiction must be reconciled so as to satisfy the needs of the community as well as the individual. The dominance of private speculative development, the get-rich-quick philosophy that dominates our social milieu, carries the seeds of urban degeneration. Ownership of land cannot be vested in private hands any more than can water resources. The spiralling value of land and the mounting costs of building are forcing a change in the dynamics of all development.

The only escape from the existing urban chaos is *planning*, and planning from a *human point of view* - planning on a human scale, in terms of the most elementary needs of man.

7. STABLE FAMILY LIFE:

The basic demands of family life are for physical and psychological well-being, stability, health, personal identity and intellectual and physical stimulation.

In terms of housing units this signifies shelter, security, comfort, privacy and in our climatic conditions, direct links between indoor and private outdoor spaces. ('Family life' is used here to include the full gamut of familial-types which a cross-section of society would comprise, from single individuals, young and old, to the nuclear family of all sizes).

It is difficult to specify the parameters which permit an assessment of family and community well-being. Basic indices would no doubt tell at least a part of the story - the estimate of life expectancy, infant mortality and suicide rates, the incidence of criminality, delinquency, and vandalism, for example. Life expectancy figures would appear to have a high correlation with conditions of family life: Life tables for South Africa in 1967 reveal the following:-

Average Life Expectancy at Birth
for Men and Women Combined:

Whites	68 years
Asians	55 years
Coloureds	46 years
Africans	Life tables not available ¹).

With respect to the incidence of criminality, convictions for all acts of violence during 1967 were five times greater for the non-White than the White communities²). Between three and four murders are recorded weekly in Kwa Mashu alone³). The explanation for this cannot exclude the conditions of family and community life as they are evidenced in South Africa, as a major contributory factor.

To many of our peoples, life, as Hobbes described it, remains 'nasty, brutish and short'. The root cause clearly has some basis in our man-made physical environment.

8. CITIES AND REGIONAL PLANNING:

It should be remembered that the basic environmental unit is the region, comprising two pivotal elements: town and country. Cities cannot be considered apart from the regions which constitute their natural limits. Every city depends for its development upon the geographic, economic, social, cultural and political environment of the region in which it is located.

These factors are subject to continuous fluctuations brought about by scientific and technical progress and to social, political and economic changes.

9. HOUSING AND CITIES:

By far the greatest proportion of urban land is devoted to housing. Accordingly the density standards that one adopts for housing has a crucial effect on the overall structure of the city.

10. THESIS:

Well zoned high-density, high-amenity housing development is inescapable in the rational reconciliation of the sometimes conflicting demands of Family-life and City-life. This signifies that the standards adopted for Density, Amenity and the Journey to work lie at the root of stable family life in the City of the year 2000.

Low density housing is the guarantee of sub-topian urban sprawl, increased land and services costs, lower budgets for the housing units themselves, reduced amenity and an increase in the journey to work. The chaos which is already threatening our Cities will be consummated. 'Family Life' will become an ever-lengthening shadow of the real thing.

To sum up the argument for high density residential areas, we can conclude firstly that there is an ever-increasing demand for quantity and quality in urban housing; secondly there is a need to conserve both the urban and rural environment; and finally paring down space and amenity standards is socially myopic.

1) Hansard, 17, Vol. 6738.

2) Horrell, M. (1967): *Race Relations Survey - 1967*: South African Institute of Race Relations, Johannesburg.

3) Kwa Mashu is one of the larger African Townships in Durban.

Accordingly high-density, high-amenity housing development is inevitable with densities as high as human ingenuity can devise without injury to stable family life.

11. AN EXAMINATION OF DURBAN'S RESIDENTIAL AREAS:

Housing areas constitute the first urban function. The present conditions of housing in the Durban Area may be summarised as follows:

The population density in the central areas is too high and in the suburbs and townships too low.

Overcrowding has resulted from overbuilding on the land surface while neglecting to provide open spaces and other communal amenities.

The situation is aggravated by the state of dilapidation of the buildings themselves and the economic strata of the inhabitants.

Urban expansion has destroyed the green areas that once surrounded the city's housing districts.

Areas of highest density are frequently those least suited for housing areas, because of their zoning, topography, aspect, micro-climate and proximity to noise, noxious fumes and traffic routes.

The distribution of buildings intended for community services is arbitrary. This is notoriously true of schools, which are often situated on the most congested thoroughfares and remote from the housing areas which they serve.

12. CONCLUSIONS:

a) There is a desperate need in our cities for more and more low-rental housing. A socially-advanced attitude to the provision of low rent public housing is the crucial demand of urban development. The public ownership of land is seen as mandatory to this solution. There is a need to overcome the sub-economic, quasi-charitable image of public housing, and to solicit community participation to integrate people's needs and wants in new housing types which could drastically reduce the cost of conventional construction.

b) Radical humane thinking has stemmed from Geddes, Howard and Mumford - inspiration that has been lying almost untouched as far as action in this country is concerned. The justice of their grim anticipations has been fully borne out. We need to assimilate the lessons of Ebenezer Howard at the turn of the century, Radburn in 1929, Le Corbusier, the new towns of the postwar II period, Hook and other noble experiments of today, as well as the science fiction constructions of Tange, Archigram, Buckminster Fuller and Doxiades for the City of the Twenty-First Century. We need to devise new designs for stemming the growth of megalopolis, the oozing together of already amorphous cities into a sort of inhuman lava flow hundreds of miles long.

c) 'It is of the most urgent necessity that each city should provide itself with a town planning programme, co-ordinated with the programmes of its region and the nation as a whole. The execution of these programmes on a national, regional, or urban scale must be guaranteed by the necessary legal arrangements'.

This is no clarion call of the 'Sixties, this urgent plea was made 35 years ago at the C.I.A.M. Congress in Athens.

The manifesto continues:-

'Every town planning programme must be based upon accurate research made by specialists. It must foresee the different stages of urban development in time and space, it must co-ordinate the natural, sociological, economic and cultural factors existing in each case.

'The vast problem posed by city planning requires the creative utilization of modern technology and the collaboration of specialist planners'.

The shape of our future cities thus will be a reflection as much of the political, social and economic factors of our milieu as the inspiration of specialist town planners and architects.

Our ideals have never seemed more remote. Designs of criminal savagery have already contorted our physical environment. The restoration of order out of chaos can only be accomplished under one condition: 'that the average man becomes aware of how reduced a form of life he is obliged to lead because of the present state of our cities'.

Our urban crisis is a continuum extending from the design of the individual dwelling to planning on a regional and national level. To an informed public opinion belongs the responsibility for insisting upon restorative measures; to national and local governments, the responsibility for vigorous, planned action for the welfare of mankind.

Thoreau crystallises the sentiments of my concluding thoughts: 'Only that day dawns to which we are awake'.

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JUVENILE BEHAVIOUR AND ENVIRONMENT

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This paper sets out to examine the problem of juvenile behaviour in relation to the urban environment. It accepts that there is a problem, and that it is becoming more acute. While the origins and nature of the problem touch on many more aspects of life than the urban environment alone, adjustments to the physical environment can contribute to a solution.

1. THE NATURE OF JUVENILE BEHAVIOUR:

Man's estimate of his own nature inclines to one of two extremes: either he sees himself as created in the image of God, and having godlike potential, or as an animal, elevated to the human condition by divine grace or the fortuitous processes of evolution and the discipline of social intercourse. These conceptions are projected on to the newborn child, and determine attitudes to the treatment and education of children. From the beginning of this century the more optimistic view has prevailed, finding expression in the attitudes of our 'permissive society'. From about the same time, thinkers have inclined to the opposite view, which has found expression in philosophy, literature and in the social sciences. Before popular attitudes could be effectively influenced by this change, a sudden outbreak of juvenile delinquency appeared to bear out in practice, the theoretical conception of man by nature beastly. It was as if the doctrine of original sin had been reformulated as a scientific hypothesis, to be confirmed within a matter of decades by demonstration in the field. It is open to deduction from the scientific record that the child reared in isolation grows into an animal with no social instincts to impose any restraint on his potential for evil actions, and whose inborn intelligence merely endows him with the capacity to develop that potential. It will not be necessary to pursue the argument that humanity developed as it has because of the progressive restraints imposed on the young human animal by his social environment; how the virtues of self-sacrifice, tenderness and respect for authority ultimately triumph in any well-ordered society. One can reasonably infer that juvenile delinquency is a natural consequence of a breakdown of that order and that the breakdown of the orderly urban environment is a contributory factor. If it is accepted that barbarism is born anew with every generation, and the maintenance of civilisation is a process that must be renewed in respect of every child that is born, then the role played by the urban environment cannot be taken for granted. The origin and nature of that environment as a factor in the civilising process need to be examined more closely.

2. ORIGIN AND THE NATURE OF CITIES:

Recent advances in archaeological technique and its application on an ever-widening front, have yielded evidence which upsets the established concepts of the relation between history and prehistory.

The present state of the archaeological record opens the field to speculation, and in particular to revising the vague but comfortable assumptions underlying the standard histories of the earliest known urban societies in the Middle East. The basic premise, that the pressure of a growing population on the means of subsistence led to progressive change from hunting, to herding, to settled agriculture and the eventual concentration of population in cities, appears to be generally valid; but the detailed interpretation of the process of change can lead to two radically different concepts of the nature of the city.

If it is assumed that families or clans or even tribes supplemented their animal diet by a gradual process of gathering vegetable foods, then one may legitimately infer the progressive development of intensive agriculture, yielding surpluses, promoting trade and specialisation, which in turn lead to the establishment and growth of market towns and cities.

This was the conventional view, and it can be seen as a natural product of the outlook of the nineteenth century thinkers. Settled agriculture as the broad basis of a stable society, cities and urban civilisation as the peak of the pyramid, was a concept evolved by a stable society governed by landed gentry who had forgotten their feudal origins.

The more pessimistic and perhaps more realistic view of the changeover from nomadic to settled existence, yields another interpretation altogether. It recognises that when the means of subsistence begins to fail, people accustomed to an animal diet would, in the absence of animals, eat each other before they eked out a hungry and contented existence by means of primitive agriculture. If the element of desperation, of cannibalism, plunder and warfare, is introduced into the picture, then the origin of cities would appear to lie in the citadels of embattled savages, and the invention and application of agriculture, as a last desperate resort of a concentration of population faced with starvation. In other words, cities may well have preceded settled agriculture, and the relationship between townsman and farmer would be reversed. The city dweller is dependent on the farmer for his food, but the life and security of the farmer, his very existence, is dependent on the city and its organisation of society; which is based on stability, law and order.

This is the crux of the matter. If stability and the rule of law were the natural order of things, if men were good by nature, then cities could be regarded as the efflorescence of society, tolerated for their benefits, execrated for their evil ways, but fundamentally dispensable. But if it is accepted that warfare is the natural order of things, that men are animals tamed into humanity by city life, then the city itself appears as an invention, an instrument, a tool, on the effectiveness of which society depends for its very existence.

This digression on the origin and nature of cities was necessary to make the point that if the city is regarded as an instrument of civilisation, then the form of the instrument, that is the physical urban environment, assumes a critical importance. In this respect the history of city planning is in its infancy. The form of historical cities has hitherto been regarded as a curiosity, dependent on climate and topography, building materials and methods, social organisation and the genius of individual men. These factors do apply, and do determine the detailed configuration of the urban environment. But underlying them as the main purpose of the whole enterprise, is the creation of a physical shell which serves as the counterpart of the more intangible human environment in transforming juvenile animals into adult humans. The long process of isolation through the ages is repeated in the daily life of every man, who is born animal, passes from savagery to barbarism, and assumes his place in civilised humanity as he graduates to responsible adulthood. In this process the fabric of the city plays an important part.

3. SOCIAL ENVIRONMENT AND PHYSICAL ENVIRONMENT:

It lies beyond the scope of this paper, and it is not necessary to its argument, to describe and analyse the process whereby the human environment, that is the family, clan or tribe, fulfills the role of a civilising instrument. The problem of juvenile behaviour is ever-present, but it only assumes critical proportions when the child grows up in a large concentration of people, in a city. The scale of environment is the most important consideration, and with it the relation between the number of juveniles and the number of adults. Hitherto, our society has, by and large, been composed of adult people who were reared in adequate environments, and who constitute a bank of habits, traditions, and purposes in life, on which the younger generation could draw. In the past our city populations have been fed by adults drawn from the farms and the smaller towns, as a consequence of the general trend towards the depopulation of the countryside and the concomitant growth of the metropolitan centres. By their very presence, and their overwhelming numbers, these people exerted a pervasive influence which the young city dweller assimilated as part of the natural order of things. But the explosive growth of population has upset the relationship between those who can teach and those who must learn.

In the first place, the majority of city dwellers are now people who have known no other environment. The carryover, through close association with their

elders who have been reared in more congenial environments, tends to mask for the time being, the radical nature and the possible consequences of the change. The new environment is very new. Within the past generation most cities have doubled or trebled in population, and their physical size has grown to an even greater extent. The changes to the environment have been sudden and for the most part fortuitous. If the urban environment is still to be regarded as an instrument, then it is a new instrument of untried capabilities. To what extent the current problem of juvenile misbehaviour in the great cities can be attributed to the changes in their physical form may be a matter for debate, but certainly it is a matter for urgent and thorough examination.

4. THE NATURE OF THE CONTEMPORARY URBAN ENVIRONMENT:

While there is much to be learnt from the hitherto neglected study of the interaction between the planning of historical cities and their performance as productive centres of civilised achievement, there are a number of generally-accepted concepts in contemporary town planning which have a bearing on our problem. These concepts have been evolved in response to the demands made by the rising pressure of population on housing, traffic, and the central business districts of cities. There has been little direct concern with the performance of these measures as deliberate attempts to condition the behaviour of the population, and in particular, the behaviour of juveniles. For the most part they are ad hoc solutions to specific technical problems. There is no idealism, or overall concept, of the function of the city, which could serve to unify and direct these various expedients to some premeditated end. The presence of cities is taken for granted, their phenomenal rate of growth poses day-to-day problems which absorb all the energies of those concerned with their planning and administration, and in this pragmatic atmosphere there is no time and no inclination for questioning the social desirability of these formidable technological achievements.

In the time at our disposal we can deal with only one facet of city building as it affects our problem. The provision of housing is the most important from our point of view, in that it affects the major part of the juvenile environment. Since the onset of the industrial revolution, that is, from the time of radical change in the historical urban environment, the provision of housing has been determined mainly by economic factors. The price and availability of land, the enterprise of speculators, and the range of demand from the various classes of society has overruled all other considerations. The result has been the sporadic growth of suburbs on the one hand, and dense concentrations of flat blocks on the other, without any considered relation to the city centre, or to the availability of schools, churches or recreation facilities. The fact that attempts in this direction are made on a small scale in new towns and individual suburbs does not affect the larger issue. From time to time desperate measures are taken by way of expropriation and demolition, to alleviate irresistible pressures of demand which have been allowed to grow up, and to impose some measure of cohesion to the unplanned sprawl: but at present there is no theory or overall guiding concept regarding the pattern of growth or the final extent of that growth. In other words, no attention is given to the form of the city. It is our contention that this formlessness of overgrowth can be correlated with the incidence of juvenile delinquency.

5. THE PHYSICAL ENVIRONMENT AS THE FRAMEWORK OF SOCIETY:

As the population of a city grows, so the influence of the social environment on the juvenile members of society diminishes. The subtle but pervasive conditioning of the tribe or clan is diluted as its members become dispersed in the welter of strangers. Ultimately the family unit remains the only effective social environment, but in the large city the claims of time and distance on the individual members of the family attenuate even the family bonds. The effect of a large-scale, undifferentiated urban environment is to isolate each individual. In these circumstances, the juvenile individual is increasingly exposed to the laboratory conditions of the human animal reared in isolation. At first, the process would be retarded only by the presence and example of adults matured in the traditions of the older environments; as the statistical relations between juveniles and adults change progressively, as traditional ways become progressively more remote, conditions become increasingly favourable for the latent nature of the juvenile to assert itself in its pristine state.

If one accepts the present human situation as the natural consequence of an overgrowth of population and large-scale urbanisation, then it is only realistic to concede that any attempt to effect a change for the better in terms of social, religious, or political behaviour, is unlikely to succeed. The human environment is not susceptible to radical change at short notice and the problem calls for urgent and radical measures. The physical environment, however, is ultimately fully under our control, and if the argument is accepted that the urban environment is potentially a conditioning element of juvenile behaviour, then the prospects of coping with the problem improve. On examination it will be found that the means to this end are deceptively simple; slight amendments to existing town planning legislation are capable of providing far-reaching changes. These changes should be directed to specific ends, or concepts, which recognise the essentially educative value of the environment. They need not conflict with the functional requirements or the economical feasibility of any planning scheme; in point of fact, they supplement and even induce a higher efficiency in the planning.

6. THE CONCEPT OF PROGRESSIVE SCALE, TERRITORY,
AND CANALISED AGGRESSION:

The first and most important concept is that of scale. The physical size of the immediate environment should relate to the juvenile's capacity for learning. Housing should be so arranged that each unit forms part of a small cluster; these should be so differentiated from neighbouring clusters that it constitutes a readily-recognisable territory, within which the toddlers are naturally drawn together and can establish friendships under the immediate surveillance of their elders.

The clusters should be grouped into parishes, where the young children become aware of a hierarchy in society through the presence of community buildings, sited so as to be visually significant. The church building lends itself to this function in many ways; whatever the estimation of organised religion may be, the presence of religion is necessary and can effectively be conveyed through the symbolism of the building in relation to its siting. Schools and clubs come into their own as hierarchical buildings in the more advanced age groups, and here again, the respect due to their function needs to be reflected in their visible relationship to the rest of the community.

As the young teenager progresses through a succession of territories, which at every stage of his development are comprehensible and significant, he would naturally tend to adapt himself to the community life of that territory, and accept his evolution toward full citizenship as part of the natural order of things. At a particular stage, the secondary school level for example, his awareness of other territories, and his latent aggressive tendencies, could be channelled into competitive sports and the drive to emulation.

It is at this stage too, on the threshold of adulthood, that the environment should introduce him to the concept of danger, sacrifice, and significant death. If the fundamental planning is well conceived, there would be less opportunity for experiencing the irrational violence of, for example, traffic accidents. There is a greater danger in overplanning urban environments against the possibility of accidents of one kind or another, than in deliberately introducing hazards which encourage the risk of life as an educational device in promoting courage, self-sacrifice, and heroic death.

It will be clear to those of the audience that none of my proposals conflict with, or go beyond, what is generally accepted as sound town planning methods as they relate to residential areas. There is merely a change of emphasis to the non-utilitarian aspects, the introduction of a spiritual imperative, to meet what is in essence a crisis of the spirit.

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SOLVING THE HOUSING SHORTAGE IN SOUTH AFRICA

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1. THE IMPORTANCE OF BUILDING:

Man, it would seem, is the one animal on earth that is unable to survive without artificial protection from the weather. Over-exposure to the elements, even in the supposedly ideal climate of Johannesburg, can be fatal. No winter passes without the appearance of newspaper reports concerning individuals who have died from exposure. The most recent story of the ageing African who entered a backyard to await his end amidst the dustbins was particularly poignant.

As curative medicine succeeds in keeping disease at bay, preventative medicine becomes more important. A prerequisite of preventative medicine is healthful housing. Education requires classrooms and hospitalisation requires wards. Even in the field of industry, the housing of the industrial process is the first step. Almost all fields of progress and expansion commence with the provision of suitable accommodation. To a rapidly developing country such as South Africa, the importance of a healthy building industry cannot be over-emphasised.

This is to state the case for architecture on the lowest possible level. Beyond that, architecture has, in addition to its social purpose, the spiritual purpose of providing dignity, meaning and permanence to human actions. Architecture arises out of the social and spiritual needs of a people, and the means, at the disposal of the designers, to meet those needs. The means have the two ingredients of human resources and the amplification of these by machines, on the one hand, and materials, on the other. With these two ingredients, of materials and energy to move materials, the building industry is called upon to provide the necessary volume of building.

It is primarily the ingredients of energy, i.e. men and/or machines which I wish to consider today. I intend to examine the volume of building required, particularly in the field of housing, and then examine some of the possible solutions that may be adapted to increase the availability of skilled workers.

2. THE VOLUME OF BUILDING REQUIRED IN SOUTH AFRICA:

On the assumption that the general economic circumstances and the demand-supply relationships, which applied during the survey period, would continue to pertain during the following twenty years, it was estimated in 1964 that the demand for skilled artisans in the building industry in South Africa, would increase from 52,300 man-years in 1968 to 86,700 man-years in 1980¹).

3. RECRUITMENT TO THE SKILLED TRADES IN THE BUILDING INDUSTRY:

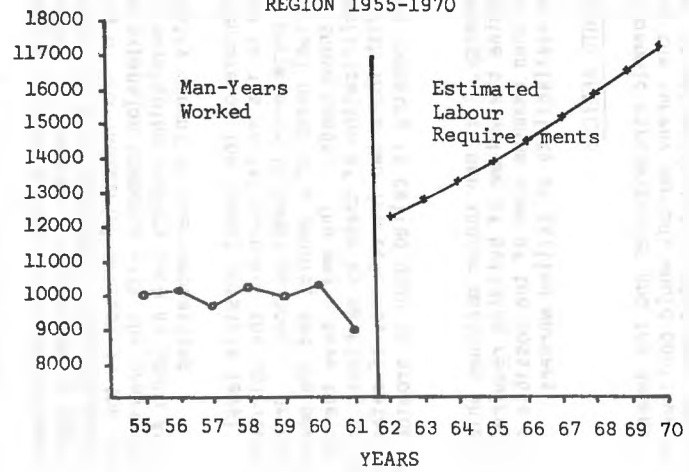
The same survey showed that, over the study period 1955-1961, the intake of apprentices to the Building Industry had declined. Recruitment in some trades was static and in others declining. The unattractive 'wet trades' of Bricklaying and Plastering showed both a high wastage and low recruitment²).

Figure I shows a comparison of actual man-years worked (during the period 1955-1961) and the estimated requirements in man-years for the Witwatersrand and Pretoria region for the period 1962-1970³). Although I am sure the position has

- 1) Beard, L.A., A. Jensen & B. von Meyer, (1964): *Studies of Manpower in the Building Industry*, Council for Scientific and Industrial Research, and National Development Foundation, Johannesburg; February.
- 2) *Ibid.*
- 3) *Ibid.*

FIGURE I

COMPARISON OF ACTUAL MAN-YEARS WORKED AND
ESTIMATED LABOUR REQUIREMENTS IN MAN-YEARS:
BUILDING INDUSTRY: WITWATERSRAND-PRETORIA
REGION 1955-1970



improved since the survey period, extrapolations based on the curve showing man-years worked gives no promise of meeting the curve showing the man-year requirements.

4. THE HOUSING REQUIREMENTS FOR SOUTH AFRICA:

A newspaper leader article in July 1967¹⁾, reported that the Chairman of one of the country's largest building societies put the shortage of houses at 180,000 units.

The Minister of Community Development, making a statement of policy in the Senate on the 5th March 1968, denied that a shortage of anything like this magnitude existed and claimed that such figures were quite unfounded²⁾. He said,

'I do not want to deny that there is a shortage, in fact that is why we have building control and rent control. The position, however, is not nearly as bad as it is made out, except with regard to Coloureds, especially in the Western Province'.

According to the Minister, a projection made by the Council for Scientific and Industrial Research showed that the annual need for dwellings for *Whites only* was 28,200 per annum to the year 1970 (in order to provide for new families and, at the same time, overtake the backlog); 27,000 per annum from 1971 to 1975 and 30,000 per annum from 1976 to 1980³⁾.

5. WHITE HOUSING IN JOHANNESBURG:

The Johannesburg City Council Forward Planning Report No. 3 states that,

'While there are no European families living on the streets or squatting on open land in the municipal area, the housing shortage in Johannesburg is acute. Numerous families are living in slums and backyards or are sharing private houses illegally. Practically any structure with four walls and a roof can at present be let to families only too eager to obtain some form of shelter ...'.

On the basis of the number of houses in the Johannesburg Metropolitan area, and the average family size, revealed by the 1960 census returns and published by the Bureau of Statistics, chronic conditions of overcrowding must be prevalent in approximately 20% of the houses in the Metropolitan area⁴⁾.

6. AFRICAN HOUSING IN JOHANNESBURG:

In the field of Urban African Housing the situation, on the surface, would seem to be more favourable, Dr. Ellen Hellman⁵⁾ reports as a positive feature of the Native Builders Act of 1951 and other legislation, that whereas the housing backlog for Africans in Johannesburg exceeded 50,000 after the last war, there are today only 68 shacks remaining in Soweto.

I understand, however, that whereas the average family size in Soweto is 5.2, as a result of the presence of relatives or lodgers, the average household size is 6 persons. As 60% of the houses are the standard NE51/6 house type which

1) 'Star' - July 20, 1967, Johannesburg.

2) *Debates of Senate*: 4 - 8 March 1968, column numbers 993-994.

3) *Ibid.*

4) *Forward Planning Housing Report: No. 3: Housing for Whites in Terms of National Policy*: prepared by Johannesburg City Engineer's Department and approved for release on 13th March 1967.

5) Ellen Hellman (1967): *Soweto, Johannesburg's African City*: South African Institute of Race Relations: Johannesburg.

consists of four rooms, without interleading doors, serious overcrowding must exist in a large percentage of dwellings. The municipal waiting lists show a shortage of dwellings for 11,000 African families, and a shortage of accommodation for approximately 16,000 African single men.

7. FACTORS AGGRAVATING THE HOUSING SHORTAGE:

There are, however, two closely related factors which affect both the White and non-White housing situation. The first is the development of rundown, blighted and slum areas which have developed in our main centres, and are now requiring 'Urban Renewal'. Johannesburg, although only 80 years old, and in the central area undergoing its fourth rebuilding at a heightened scale, has according to the 1963 slum survey nearly 48,000 acres of depressed areas in some 35 townships. This, in what is probably the world's youngest city to have reached a population figure of over one million, is sad and formidable.

The second factor, which as I have said is closely related to the first, is (contrary to the satisfaction with which the non-White housing programme is viewed) the rate of obsolescence which is developing, and which will develop at an accelerating pace, in these *new* housing areas. From Moroka to Soweto is indeed a great step forward, but I seriously doubt whether the rising generation of Africans will be satisfied with the minimum and sub-minimum standards provided. In spite of inflation, enhanced pay packets augmented by working wives and teenagers, will create a demand for a heightened standard of living. For instance, the only washing facility at present provided in the NE51/6 house type is an external stand pipe over a concrete slab. The necessity for a bathroom (preferably internal) will soon be felt. Room sizes are small and cupboards are not provided. Space for the accommodation of bicycles, prams, diningroom furniture, clothing and other essentials will soon prove inadequate. The rate of obsolescence in this sector, I fear, will be enormous.

Low rise development, provided the initial provisions are not impossibly inadequate and structural standards acceptable, may, at considerable cost, be modified, but with the exhaustion of available land and the consequent advent of multistorey housing for non-Whites, the lessons must be heeded. Modifications at upper levels will not prove practicable. The greatest danger facing authorities is the underestimation of the rate of change in patterns of living, resulting in inadequate provision for these changes. Reporting on his recent overseas study tour, Mr. Hooper, Johannesburg Assistant City Engineer in charge of Town Planning and Housing, has reported 'Probably the most common admission made in the countries visited has been the mistakes of initial low standard planning'.

8. DEMANDS ON THE BUILDING INDUSTRY:

So it would seem that although the exact extent is difficult to evaluate, there is in fact a formidable shortage of dwellings, and that this shortage is aggravated both by decay and advancing standards. The demand for housing is but one of the demands which we make on our building industry. The provision of schools, hospitals, factories and administration buildings must go along apace. Who, in the long term, would regard the sports stadium or the place of entertainment as being non-essential in the development of the community?

The situation in South Africa at present is that housing and all other building work in White urban areas has to be undertaken by White artisans assisted by African labourers. In 1951 the legislature enacted the Native Building Workers Act (No. 27 of 1951), which prohibits Natives (Africans) from performing, among other things, skilled building work in White urban areas. This means that, intentionally in the interests of good race relations, the White artisan on the urban building site need fear no competition from Africans.

If this situation produced the required volume of building work we could have no practical grounds for objection. But unhappily the shortage of dwellings persists.

9. SOME SOLUTIONS - ATTEMPTED, AND POSSIBLE:

Faced with the problem of providing adequate housing and at the same time honouring the desire expressed by the majority of the electorate, to maintain job reservation, the Government have, within these conflicting demands, tried various expedients.

a) The First Solution - Immigration:

In 1963 the Government embarked on a crash programme of immigration, designed to import skilled artisans from overseas as recruits for the South African building industry. This was intended to fill the gap in the artisan shortage and relieve the pressure that was mounting against job reservation.

This proved a dismal failure. In retrospect, it is easy to see that immigration, instead of alleviating the housing shortage, can only increase the shortage. Before an immigrant bricklayer can provide any significant contribution to the construction of a house, he and his family require to be housed. The importation of artisans from overseas failed to alleviate and actually aggravated the housing shortage.

b) The Second Solution - Building Control:

The failure of the 'solution' offered by immigration led to the institution of a form of building control intended to divert labour from other works towards housing. Restrictions such as these provide no lasting solution. A backlog of building for other purposes is created. As a long-term policy, building control would be completely unacceptable. I think that at this stage in the history of building control, we can state that it has failed in its purpose. Prohibition of certain 'non-essential' types of building does not in itself direct building activity towards housing.

c) The Third Solution - Industrialised Building:

Mindful of the inadequacy and failure of these first two, a third possible solution is now being encouraged. This aims at circumventing the ill effects of job reservation in the building industry by encouraging industrialists to invest money in factories to produce large, prefabricated panels for assembly on the site. These prefabricated panels would be manufactured by Africans acting as machine operators in factories, and would be assembled by African operators on site, all doing repetitive tasks of a semi-skilled nature under the supervision of a White foreman. By this means it is hoped to meet the shortfall, and at the same time maintain the White artisans' privileged position on site. The building components will be manufactured and assembled by Africans, but apparently *not* in competition with skilled White artisans. To this end, and in order that local authorities do not defeat the Government's intention, the Minister of Housing is now, under legislation, empowered to suspend bye-laws relating to housing.

The capital intensive method of prefabrication relies for economic competitiveness on the scale of production. At smaller volumes of production the cost per unit is higher than for traditional techniques¹⁾. As the volume of production increases, the ex-factory cost per unit decreases. On the other hand, in order to reach substantial production figures, a manufacturer is likely to have to serve a widely spread market and as delivery distances increase so do cost of transport, thus increasing the cost per unit.

For the present, at least, the concentrations of population in South Africa and that percentage of the population presenting a market for prefabricated houses would appear to be both too small and too widely spread to warrant industrialised methods.

1) Samson, D. (1967): 'Notes on the Economics of Industrialised Building' - ISAA: 4 April.

The problem of industry in South Africa is not basically industrialisation, (which aims to eliminate the unskilled worker), but one of finding ways of absorbing large numbers of unskilled workers. The shortage of skilled artisans and the urban shortage of unskilled labourers are the result, after all, of legislation governing job reservation and influx control. The case for industrialisation in the building industry can, at best, be based on an artificially created shortage.

As future conurbation may present a different economic picture, let us look at the possible results should prefabrication prove economically competitive and succeed. In this event we will have the situation where either the artisan will have to pack his tools and leave the building site because his skills are no longer required, or site work will have to be rationalised in order to effect economies and restore competitiveness with prefabrication.

Rationalisation means the more productive use of the African worker. The success of prefabrication therefore will place increased pressure on the existing pattern. Because the rationalisation of site work could alter the cost structure of the building industry, a manufacturer may find his production uncompetitive. The dilemma of the industrialist will be to know at what stage the artificially favourable climate for prefabrication will be removed. The dilemma then is not that of the industrialists but of the whole country, in that once vested interests have entrenched themselves behind the barricade of artificially favourable circumstances, the rationalisation of the building industry may be delayed. But, as I have shown, the effect of this will not be to maintain the privileged position of the White artisan, but to eliminate site work.

d) The Fourth Solution - On-site Mechanisation:

On-site mechanisation, as opposed to industrialisation - i.e. applied within the existing framework of the prevailing artisan-labourer pattern and within the framework of traditional techniques - is limited. As far as possible this is and has been taking place, but the shortage persists.

e) The Fifth Solution - Removal of Job Reservation:

Can it be expected that rationalisation involving the removal of job reservation on the basis of the 'rate for the job' would reduce building costs? The answer is probably 'yes'. Undoubtedly some artisans are sheltering behind the protection afforded them. We have to be content with rates of production of up to 600 bricks per day, where two to three times this rate is expected elsewhere. The replacement of the less efficient element with willing workers, proud of their production, can greatly benefit the industry and reduce cost. But this consideration is unrealistic in the framework of South African political opinion.

f) The Sixth Solution - the Fragmentation of Skilled Work:

The only feasible proposition, for the present, would seem to be the rationalisation of site work by breaking down the skilled work, now performed by artisans, into numerous operations requiring minimum skill, easily learned, and admitting Africans to these jobs. The sort of thing I have in mind is the reduction of bricklaying to two operations utilising White artisans as corner men and Africans as fillers. Africans could be employed to apply undercoats of plaster and paint. This, I believe, could be done within the existing Industrial Conciliation legislation. Concerning this matter, an interesting comment has been made by Professor L. Sadie¹⁾. He writes,

'In fact, I believe that this colour bar would have operated more stringently in the economic sphere, were it not for the facade of government policy which, as a manifestation of intent, imparts that degree of security to White workers as to render them prepared to make concessions'.

1) Sadie, L. (1968): *Race Relations and Inflation*: South African Institute of Race Relations, Johannesburg.

A sample of career guidance masters was asked for their comments on the place of the African worker in the building industry. Almost two-thirds of this sample (62%) considered that the African labourers should be trained to do more responsible work. A further 26% thought that the Bantu should do more responsible work, but only in their own areas¹⁾.

The executive and managerial personnel interviewed were strongly of the opinion that the African in the building industry should be trained to do more responsible work. Many were of the opinion that recruitment to the industry could best be stimulated by opening some trades to non-Whites. While the artisans and apprentices were not directly questioned on this point, at least half the sample considered that African workers should be given greater responsibility²⁾.

CONCLUSION:

Although I fear a considerable rate of obsolescence in Urban African housing, it does seem that the Native Building Workers Act of 1951, in admitting Africans to skilled work within their own areas, had the positive result of providing minimum shelter for urban Africans. On the other hand, in that the White sector has at present to provide the bulk of the professional and managerial skills required for all races, they cannot at the same time provide the number of artisans required to cope with the volume of building work required within the towns and cities. Even in the sphere of Coloured housing in the Transvaal (in view of the prohibition on the African and the lack of training for the skilled Coloured workers), the expensive White artisan is employed with adverse effect on rentals³⁾. The Prime Minister's Economic Adviser, Dr. P. J. Riekert⁴⁾ has stated that even with an influx of 12,000 immigrant workers a year, there will be a shortage of 30,000 White workers by 1970, only 18 months from now. The Minister of Planning calculated that in 1971 there would be 161,000 unemployed non-Whites and a shortage of 26,800 Whites⁵⁾.

In view of these factors it may well be that the most serious effects of job reservation, as it now stands, will in future be felt in the White sector of building in general and housing in particular. The White sector is, of course, the towns and cities, which serve both White and non-White.

In this paper I have avoided any consideration of the moral issues that may be raised. I have tried to view the situation objectively in the light of South African realities, and microscopically within the context of the demand for energy and the supply of energy in the form of manpower and machines, to satisfy the demands on the building industry. I believe that the country, in order to provide the required number of dwellings, can no longer delay the fragmenting of skilled work and the admission of Africans to these fragmented jobs. Ultimately, I am convinced that considering the increasing disparity in racial numbers, the only solution will prove to be a full development and utilisation of our indigenous human resources.

1) Beard, et. al. (1964): *op. cit.*

2) *Ibid.*

3) *Johannesburg's Coloured Community, with Special Reference to Riverlea:* by Peter Randall and Mrs. P.C. Burrow, to be published by the South African Institute of Race Relations, Johannesburg.

4) Report in '*The Star*': 6th July, 1966, Johannesburg.

5) Horrell, M., (1967): *A Survey of Race Relations in South Africa:* South African Institute of Race Relations, Johannesburg.

CARLTON CENTRE - IMPACT ON URBAN LIVING IN JOHANNESBURG

Michael Simpson

Johannesburg

1. GENERAL DESCRIPTION:

This project can be described as a microcosm of the city macrocosm. It will contain a 50 storey office block a 600 bedroom international class hotel, parking for 2,000 cars, a comprehensive shopping development, an exhibition hall, pedestrian plazas, gardens, courts and fountains.

2. LOCATION:

On five-and-a-half city blocks, slightly east of middle of the central business district of Johannesburg, bounded on the north by Commissioner Street, in the south by Marshall Street, on the east by Von Wielligh Street, and the west by Kruis Street.

3. URBAN FREE-WAYS:

These are readily accessible immediately to the south and east. All traffic movement in and out of the centre is carefully engineered to the anticipated peak traffic flows in the affected streets projected to 1975, when the completed urban freeways system becomes operational.

4. OFFICE BUILDING:

The office building consists of 50 floors and is 660 ft. high with 21 high speed lifts arranged in three separate banks which serve independently the low, medium and high sections of the building. The low rise lift bank serves from the ground floor to the 19th floor. The medium rise lift bank travels non-stop to the 19th floor to serve from the 19th to the 36th floors. The high rise lift bank then travels non-stop to the 36 floor to serve from 36th to 50th floors. At the 50th floor there is an observation platform which will be open to the public both day and night.

For inter-floor traffic two crossover floors on the 19th floor and 35th floor levels have been provided to permit changing from one bank to another. In addition there is a service lift for goods delivery to all floors, as well as special bank and bullion lifts. The office building is fully air-conditioned, the main air-conditioning fan rooms being situated below street level, on the 11th and 12th floors and on the 30th and 31st floors. There is also a major roof plant room containing cooling towers for the refrigeration plant.

The lettable floor areas in the Carlton Office Building are double the size of the average floor areas provided in office buildings in Johannesburg, varying from between 17,400 sq. ft. per floor in the low rise section up to 19,200 sq. ft. in the high rise section. Because of the high standard of the air-conditioning, its flexibility and the depth of office space from external wall to internal core, the tenant layouts for individual floors can be planned with considerable flexibility. This flexibility is further assisted by placing services, lifts, fire stairs, lavatories and ducts for electrical, mechanical and plumbing within the central core area. The external walls are column free, constructed of black anodised aluminium, glazed with bronze tinted glass and are recessed 4'6" from the outer edge of the floor slabs to provide a continuous gallery around the office building for several technical reasons including window cleaning, screening the windows from the high altitude sun, thus minimising the air-conditioning heat load, preventing vertical fire spread and hail protection.

5. HOTEL:

The 30 floor, 430 ft. high international class Carlton Hotel represents a new concept in hotel design. The decision to minimise the area of the site built-over at street level, in order to provide the maximum open plaza area for civic and public interest, motivated the architects towards breaking away from the conventional so called 'piggy back' planning customarily adopted for international hotels, where the bedrooms are placed in a relatively slender tower resting on a broad base or podium containing the public rooms. In the Carlton Hotel, this podium has been eliminated and the lower floors are sloped out to provide additional width to contain the larger spaces required for the public areas, including the 100 ft. clear span column free ballroom. All lifts have, therefore, logically been confined to the non-sloping ends of the building with the guest lifts on the east and all the service lifts on the west end.

The facilities provided in the hotel can therefore briefly be described as a street level - reception, waiting coffee shop. Included in the four lower floors, where the building widens out, are the public rooms, restaurants, lounges, public function rooms, bars, boutiques, bar lounges, and the ballroom in which 850 people can dine. Immediately above the public function room floors is a mechanical floor; the next three floors above (still in the widened portion), are the hotel bedroom suites. Above this are the hotel guest bedroom floors. At the top there is a night club and a health club (the latter is fully equipped with gymnasium equipment, sauna baths, etc.) On the roof is a landscaped garden with a swimming pool, with service facilities for light meals and drinks.

Although the whole of the hotel is fully air-conditioned, there are opening windows in all the bedrooms and suites so that guests may turn off the air-conditioning and have natural ventilation. Starting from the ground floor, there are the normal hotel lobby operations, sitting area, shops, bar, a coffee shop on the American pattern, serving breakfasts and light meals, and also a discotheque. Escalators and stairs leading from the ground floor link the hotel directly to the shopping complex below. Escalators from the lobby lead up to the other public function room floors. At the east end of the hotel is a bank of five lifts serving the function floors as well as the hotel bedrooms above. There are two lifts which serve down to the hotel parking areas immediately below the hotel. On the west there are five service lifts, which serve from the service level, (which is below the shopping levels), up to and including all public function room floors. Three of these service lifts continue the full height of the building to serve all the hotel bedroom floors, the night club and the health club. The first floor contains bars, the main restaurant and the speciality restaurant, the kitchens serving these areas and the hotel offices. On the second floor is the main ballroom with two pre-function rooms; and on the third floor are the private function rooms, varying in capacity to cater for private parties of different sizes as well as small business conventions.

6. SHOPPING:

The shopping levels are situated below the main plaza level; and of the seven floors below ground, the two floors immediately below street level form the comprehensive shopping centre, laid out with wide malls, courts and fountains. The complex includes two department stores at the north-west and south-east corners of the site forming the magnets to the shopping centre. The shopping centre covers five city blocks and runs from the main blocks 1 - 4 under Main Street to link with blocks 5 and 6. The layout of shops has been carefully planned and designed to ensure that there are no dead areas in the shopping centre. Below the two shopping levels (known as the Mezzanine and Boulevard levels), is the service level through which all service deliveries are made. The whole of this floor is devoted to services, mechanical equipment and storage. All service for the shops, hotel and the office building are dealt with at this level. Hence in the shopping areas there is, for South Africa a unique situation - the general public are unaware of any 'cross pavement' loading or unloading, while shopping goods come to the shopping level by lifts and staircases into service corridors at the rear of the shops.

7. PARKING:

Below the service level are four parking floors, mainly allocated to the hotel and office sections of the complex. There are 1,200 car spaces on these floors. The remaining 800 cars will be parked above ground on blocks 5 and 6 in the Parkade building, which has street level shopping and an exhibition hall of some 55,000 sq. ft. above the parking levels. These 800 car park spaces are designed for the short term parker, using the shopping centre. There are four elevators which connect the Parkade building directly to the south-east corner of the shopping complex.

8. DIFFERENTIALS - CARLTON CENTRE IN THE JOHANNESBURG SCENE:

The site covers five-and-a-half of Johannesburg's characteristically small 200 x 200 ft. city blocks. The intervening streets of Smal Street (running north-south) and Fox Street (running east-west) have been closed. This creates a more urban scale of block approximately 560 x 402 ft. Normal development in Johannesburg up to the present time has been either a partial city block or a whole city block.

9. SCALE OF BUILDINGS:

A rationalisation of the Town Planning Controls and the release of the restriction on height has made possible the creation of a complex which, although containing some three-and-a-half million sq. ft. of building, (or some 83 acres of floor area), leaves 72% of the site open at street level. This will enable the open areas to be landscaped, thus creating a public amenity in the city centre. This is a complete change from the normal restricted Johannesburg development, commonly known as the 'concrete jungle'. The much larger floor areas in the office block will enable better space utilisation and more efficient office planning to meet the needs of expanding industry and size of business firms. It is interesting to note that in another new office development being erected at the present time in Johannesburg, one major business firm would have required 22 floors of that office building, whereas they will now be accommodated on six floors in the Carlton Centre - with all the obvious advantages that this entails in efficient office organisation.

10. SHOPPING PATTERNS:

For the first time there will be adequate parking facilities provided immediately adjacent to a major shopping complex in a city centre development. This, we believe, will draw additional shoppers from outside the central business district. People will be able to move about in the 450,000 sq. ft. of shopping area, ranging over the five-and-a-half city blocks, without ever having to cross a street or be buffeted by people carrying goods and waste materials in and out of shops.

11. REGULATION PATTERN CHANGE:

As a result of changes in the building regulations due to the development of technology, particularly in the field of air-conditioning and building techniques, it is possible to plan offices and other accommodation with greater efficiency than hitherto. All staircases are designed for fire escapes only, and not for inter-floor traffic.

12. CHANGES FROM THE PREVIOUS PATTERN OF DEVELOPMENT:

Carlton Centre, unlike previous developments, contains diverse elements and will, therefore, become a city within a city. We believe that by virtue of these diverse elements - (the shopping; the Hotel with its convention facilities; the exhibition hall; the fountain in the main court (which will in the Winter be a skating rink), surrounded by coffee shops, restaurants, discotheques and other attractions) - the night life at present almost non-existent in the centre of Johannesburg, will be rejuvenated. In addition to the facilities actually provided by the development, five of Johannesburg's seven cinemas are within a very short distance of the site.

With the completion of Carlton Centre it will be possible to hold international business conventions for the first time in South Africa. At present there are neither the hotel nor the convention facilities to enable some 1,000 to 1,200 delegates to attend. The hotel ballroom for example will seat up to 1,200 people for a convention. Imagine the situation that will soon hit South Africa with the vastly increasing tourist traffic throughout the world, and with the advent of the 'jumbo jet' age, where up to 480 people will emerge from a 'plane at one time. In the light of such changes, the building of a 600 bedroom hotel is an essential part of the development of the country, and we believe that the success of the hotel will spark off further developments of hotels in other important centres.

13. UTILITIES:

In spite of the scale of development, the only utility which required to be significantly augmented was that of electricity. When five city blocks are developed simultaneously, their water consumption and therefore, their developed sewerage load, remains approximately similar to developments involving five separate blocks. In the case of electricity, however, the required augmentation is partly accounted for by the greater use of air-conditioning (consequent upon the increased accommodation which required air-conditioning due to the greater planning depths encountered). The air-conditioning plant alone requires three refrigeration machines, each being 1,760 ton capacity. Additional electricity augmentations result from technological developments in respect of mechanical and electrical services.

Carlton Centre will not use coal or oil for heating, as the primary heat source will be generated on the heat pump principle, whereby unwanted heat is collected from throughout the complex and then recovered and re-used where required. Additional heating requirements will be provided by off-peak electric boilers situated together with the remaining mechanical equipment necessary in huge underground plant rooms where the emergency stand-by plant, (including generators, pumps, fire-detectors, telephones, etc.), will also be housed. All these systems will be under the control of mechanical engineering staff who, together with the private police force, will be on duty 24 hours a day, thus ensuring that every possible precaution has been taken to deal with foreseeable emergencies.

14. TRANSPORT:

The scale of development for Carlton Centre raises the obvious questions of its effect on existing transport systems. The road system has been dealt with previously. Existing public transport systems are adequate at present. However, it is envisaged that should any rapid transit system be introduced into Johannesburg, special provision will be made for direct communication with such rapid transit systems. In the event of an underground or monorail passing down Main Street, it is envisaged that a station will be constructed within Carlton Centre.

W. Rhodes-Harrison, Hoffe and Partners,
Architects,
Johannesburg.

DISCUSSION ON THE SECTION

'THE CITY - ITS FORM, ARCHITECTURE AND HOUSING'

Professor J. Beinart, of the University of Cape Town, opened the discussion. He pointed out that the first two papers by Dr. Biermann and Mr. Tollman were '... concerned with postulating the relationship between social change and physical change; with the possibilities that are inherent in creating social situations as a result of physical form'. This he felt was architectural determinism, which he personally found rather difficult to understand, '... because more and more social scientists are telling us that the relationship that a physical environment has upon social structures is only selective ...'. In his view, it was probably only in extreme cases that a good society was the result of good architectural and physical form. He found it difficult to understand why higher density living is seen as inevitable, when more and more we are witnessing an emerging pattern in which preferences are displayed for a suburban-type of living, with need for space for child-rearing purposes. This process of suburban living is economically feasible as a result of all kinds of institutions which we, as a society, have evolved.

After developing this theme further, he concluded that if architects as physical form-givers '... are going to fulfil our needs ... for societies which are breaking out of this prison of limited abilities and a low degree of choice, we must not be harping back to the kind of visual prototypes which were produced in societies of great consensus, and societies in which the physical form was clearly that of a backward ... social situation'.

Dealing with Mr. Shunn's paper on the housing shortage in South Africa, Professor Beinart felt that there was very little he could add to it. 'The important problem which architects would like to be able to discuss was the relationship of national policy to the apparently conflicting forces producing the housing shortage. What was also significant was the relationship which architects and physical designers have towards technology; and the need for involvement with large-scale organisations: Why should architects not be organising themselves in such a way that they could use technology in a very much more significant way than at present?'

At this stage, Professor Beinart commented on Mr. Simpson's paper on the Carlton Centre. What struck him was the enormous resources which had been made available for a project like this; and yet, in the end, they seemed to have produced nothing more than a rather conventional solution. A further point he made about the Carlton Centre related to the problem of concentration, and the apparent desire for such extreme concentration in one place in the central business district of Johannesburg, in the face of apparent decentralisation forces: 'This is an interesting question in relation to Johannesburg, where I think we have an extremely high office area on a per capita ratio ... my calculations made a number of years ago would put it as high as something like two or three times that of any other South African city'. Johannesburg was growing rapidly in the central business district, in contrast to the emerging pattern overseas. Why should one have this kind of concentration maintained in a city such as Johannesburg?

Mr. Tollman, in reply to the question raised by Professor Beinart as to why higher density was inevitable, pointed out that he thought high density was not so much inevitable as desirable. In his view, the low density obtained in Durban in the Indian township of Chatsworth, the African township of Kwa Mashu, as well as the White residential area of the Berea, did not furnish any amenity for family life. He considered that it was necessary to relate the need for a certain amount of space by the family to the spatial relationships between the family and other facilities and amenities. He referred to the fact that the London Town Council insists that within a certain radius from the centre of London density should be 200, and in the Hook experiment residential density was 100 persons per acre. This is the type of density he would regard as 'high' density. Low density could not in his opinion allow for a satisfactory spatial relationship between the family and necessary facilities and amenities.

Dr. Biermann spoke at some length on his paper. A basic point he made was that he did not know whether 'good' buildings made 'good' people - while he did not believe that that was the case, he was convinced that the physical environment was nonetheless tremendously important.

Questions about the Carlton Centre and its impact on the area around it, and on traffic movements, were put to Mr. Simpson by Messrs. G. Margo, B. Slavin and F. Mondal, of the University of the Witwatersrand, and Mr. H.R.M. Cloete of Johannesburg. Mr. Simpson stated the planning for the Centre had been very detailed, and had considered these and other problems.

Mr. R. C. Calburn (Editor of 'Municipal Affairs', Johannesburg) raised the question of the future of low cost mass-produced stereotyped houses of the type built in the African townships in Soweto, once the African living standards had risen to a level where more elaborate and varied types of dwellings became appropriate. Mr. Shunn replied that the architects should be able to plan in such a way that it was possible for extensions and alterations to be made at a later date to the existing buildings. The discussion then shifted on to the question of the type of township planned. Professor D. M. Calderwood, of the University of the Witwatersrand, traced the early history of housing surveys in South Africa. He pointed out that in 1949 the National Building Research Institute had appointed a sociological team to investigate the basic problems involved. This led to a study involving many of the sociologists in South Africa¹⁾. The results showed that suburban sprawl gave certain advantages. This finding did not please the physical planners. In the nineteen 'fifties it was more economic to use the land for development at reasonably low density, and thereby being able to give the Africans what they asked for - namely a small house with its own garden. It was decided to follow this pattern in developing the post-war townships. Professor Calderwood pointed out that sociologists were aware of social change - they realised that tastes would alter. The detached houses allowed for individual improvement and change. What had not been envisaged by the early planners was the present reduction in plot size and the selection of one type of house only to be built for all types of families. Going further into the question of changes, he emphasised the fact that the land in the urban African townships was not owned by the inhabitants. This was a key point when considering the need for change, because it made change of density and structure much simpler than if the land had been owned by the people themselves. Once it became appropriate, it would be possible to bulldoze the low-cost single-storey houses, and start all over again.

The amortisation period for these township houses was 30 years, and already many houses had existed for 17, 18 and 19 years. Therefore it was necessary to start now to plan for their replacement at the end of the period. The existing townships had not been prepared as visual scenes, but as socio-economic solutions for people who were extremely poor at the time when the housing was required. This position was changing. A final point made by Professor Calderwood was that the Africans paid for the houses by their rentals, and the money building-up in maintenance funds held by local authorities was not the money of White taxpayers, but the African's money.

Mr. Toerien, of the City of Port Elizabeth, also took up the inadequacy of existing low standard housing for non-Whites.

Mr. Duncan, of the Housing Section of the Johannesburg City Council, raised the problem of what had been called the 'flat neurosis'. He considered this was becoming more prominent as a problem overseas in multi-storey high density development. He felt this problem should not be lost sight of by local planners and social scientists.

1) The study was published by the Committee on Socio-Economic Surveys for Bantu Housing (1960): *A Survey of Rent-Paying Capacity of Urban Natives in South Africa*: South African Council for Scientific and Industrial Research, Pretoria.

Mr. M.T.D. Savage of the University of the Witwatersrand was also concerned about high density living. Virtually every study he knew of, whether it dealt with new towns or old towns, contained statements from people themselves that they did not like high density living, and that what they wanted above all else was space to live what they considered to be an adequate life. He commented: 'I think that it is an enormous assumption that high density living is the best'. He ended by reinforcing the plea made by Miss B. Wright of the University of Natal, for closer co-operation between planners and sociologists in preparing future dwelling places. (Miss Wright had referred to a study by H.L. Watts, investigating housing for Coloureds¹). The report had shown that the plans used did not fit in with the living patterns or preferences of the people themselves.

1) 'Coloureds' are White-Asiatic, and/or White-Black crosses (often called half-castes, or mulattos in other parts of the world). They are biologically hybrid; and culturally can be regarded as a sub-culture of Western (White) culture in South Africa. (Ed.).

ECONOMIC AND PLANNING CONSIDERATION

SOME ECONOMIC ASPECTS OF CITY SIZE

L. P. McCrystal

Industrial Development Corporation

I. INTRODUCTION:

Early in 1967 the London 'Economist' remarked:

'It has become commonplace to describe New York City as unmanageable and the mayor's job as impossible. What is actually meant is that the city is so vast and its problems so complex that solutions are beyond anyone's reach. Unfortunately, in this instance these vague generalisations are probably quite correct. Certainly, the problems that confront New York - and other major urban centres - are awesome. Few cities are equipped to deal with the demands of existing urban dwellers, let alone the increased demands of those of the nineteen-seventies¹).

This describes the kind of situation which has arisen in the advanced countries and is growing steadily more acute. In the less developed parts of the world, similar situations are arising, although for different reasons. Here people are streaming into the cities in advance of the availability of work opportunities. The following is an example of the kind of comment which has been made in respect of these countries:

'Latin America's population is increasingly clustered in a small number of cities. Up to now, rapid population growth and the migration of people from rural to urban areas have outpaced the region's ability to provide the expanding urban population with adequate housing, essential services and sufficient jobs. Although shanty-towns and slums are the most visible problems facing Latin America's cities, the less obvious social disorders that accompany urban growth can have serious consequences for the future²).

The problems raised by the increasing urbanisation of the world's population occur in numerous fields. Those which may be said to lie largely in the economic field certainly appear to be as intractable as any. Moreover, the fact that these specifically economic matters have not received close attention until comparatively recently, has not made the task of devising answers to the various problems any easier.

For purposes of subsequent discussion, it is essential that a clear distinction be drawn between the problems which occur at the *public level* and those which occur at the *private level*. This is because the nature of the problems at these two levels differs. In fact there appears, in many respects, to be a conflict between the two. This further complicates the difficulty of finding generally acceptable directions in which the urban system may be moved towards the alleviation of the economic problems.

2. THE SOCIAL ASPECTS:

In the business world, instances are often encountered of entrepreneurs starting firms which they are subsequently unable to run properly when, as a result of favourable business conditions, the firms rapidly grow larger. It is quite feasible that, under the conditions of rapid urbanisation which have been experienced in recent years, the same is happening to cities - the cities in effect out-

1) *The Economist*, 4th February, 1967, p. 420.

2) 'Urbanisation in Latin America', *World Business No. 5*, March, 1967, Chase Manhattan Bank.

grow the capacity of the managers who run them.

In discussing the limits to the growth of the firm, Dr. Nicholas Kaldor¹⁾ split the entrepreneurial function into three components - co-ordination, supervisory and risk-taking. He then argued that it is the co-ordination aspect of the entrepreneurial function, more than the risk-taking and supervisory functions, which determines the shape of the firm's long-run cost curve, and therefore the stage at which increasing size can only be achieved under conditions of rising marginal costs. This analysis stands up to close examination and has not, to my knowledge, been seriously challenged. The main point of interest to the present discussion is that the size of the firm beyond which growth can only be achieved at rising costs, has nothing to do with the essentially business function of risk-taking. It is, according to Kaldor's analysis, tied to the essentially managerial function of co-ordination which is a function common to all forms of human organisation, from the running of a service club to the operations of a church.

Thus, if Dr. Kaldor's proposition be accepted, then it can be argued that this co-ordination aspect most probably produces a rising marginal cost curve with population growth in the management of cities as well.

Now despite the existence of the rising marginal cost condition produced by a lack on the part of the co-ordination function to keep pace with the growth of the firm, there appears to be little sign that there is any limit to the size to which firms can grow. Moreover, the condition of rising marginal costs postulated by Kaldor does not seem to have affected the competitive position of the very large firms either. Clearly these firms must have found a means of circumventing the problem. In part it has been done by improvements in the techniques of co-ordination. More important for present purposes, however, is that a major part of the solution has been to decentralise the co-ordinating function in the sense of delegating a part thereof to boards of directors and/or managements operating divisions, branches, or subsidiary companies.

The equivalent in the field of urbanisation would be to split up the total 'amount' of urbanisation in a country into smaller units where rising marginal costs do not yet apply - i.e. to have more and smaller cities instead of just a few very large ones and numerous little towns.

As in the case of firms, so it is with cities, that the calibre of the co-ordinating managements will vary fairly widely. Thus the city size at which rising marginal costs begin to apply will also tend to vary. Moreover, analogous to the price paid for poor management in the case of business firms, there is, in the case of cities, the penalty for poor management of being voted out of power. Thus in the democratic process of trial and error, an approximation to the best available city 'management team' can be obtained.

A further point worth considering is that the larger the city, the greater the likelihood that it will produce a management team capable of handling its affairs. That this could well be so is suggested by the work of Ogburn and Duncan who showed that the incidence of innovating contributions, and of persons with abilities deviating widely from the average, tends to increase with increasing size of city²⁾.

Nevertheless, there must be some limit to the size of city which even the best of managerial teams can cope without the development of serious difficulties which give rise to increasing marginal costs. However, in view of the varying

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- 1) Kaldor, N. (1934): 'The Equilibrium of the Firm': *Economic Journal*, Vol. XLIV, March.
 - 2) Ogburn, W.F., and O.D. Duncan (1964): 'City Size as a Sociological Variable' in E. W. Burgess and D.J. Bogue (eds.): *Contributions to Urban Sociology*: University of Chicago Press, Chicago, pp. 141-142.

co-ordinating abilities of city managements, and the consequent variations in the sizes of cities at which marginal costs start rising, it is only possible to determine the size of city at which this condition begins to operate, in general and 'on the average' terms.

Whatever the difficulties in quantifying this aspect may be, the concept does provide a general economic base from which to view urbanisation policy. The point at issue then becomes not the restriction of urbanisation, but the number and sizes of cities within which the 'volume' of urbanisation is to be accommodated.

Various attempts have been made to assess the range of city sizes at which rising costs may begin to operate. In a study in Britain¹⁾ it was found that the size of city whose operating costs per caput were lowest, fell consistently, over a seven-year period, in the 100,000 - 150,000 population group, whilst average costs per head rose sharply once the cities' populations passed 300,000. The data also showed that towns and cities of up to 100,000 population had lower costs per head than did cities with populations of 150,000 and more.

My own research in South Africa²⁾ has shown that over the five-year period 1960-1964 there was little difference between the cost of operating cities in the 75,000 - 100,000 size range and those in the 100,000 - 150,000 size range. After 300,000 average costs per head were found to rise rapidly - a finding which corresponds with the British study.

Admittedly rising costs may be due to the better and wider range of services provided by the larger cities; the fact that facilities have to be provided for greater numbers of people living outside the city the higher is its position in the urban hierarchy; and the fact that the larger cities have to provide for people who work in the city but live, and are therefore enumerated, outside the city. Hence the larger cities in fact cater for populations in excess of those which live in them.

Two useful studies in the United States of America both came to the conclusion that economic efficiency, from an administrative point of view, was highest in communities with populations ranging from 50,000 - 100,000. The one study, by Werner Hirsch³⁾, questions the existence of economies of scale where the governmental unit exceeds 100,000 population. This study introduced an index of quality of service as one of the explanatory variables. The other study⁴⁾ was based upon indicators of local authority efficiency such as property rates and per caput indebtedness of the local authority. The author concluded from the data that it is the smallest communities - less than 5,000 inhabitants - and the largest - over 250,000 inhabitants - whose local authorities experienced most difficulties.

The final study which will be mentioned here is a recent Italian one⁵⁾ dealing with capital rather than operating costs. This showed that the capital costs of setting up a full range of services was lowest for cities in the size range 100,000 - 250,000.

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- 1) Lomax, K.S. (1943): 'The Relationship Between Expenditure per Head and Size of population of County Boroughs in England and Wales': *Journal of the Royal Statistical Society*: Vol. 106.
 - 2) McCrystal, L. (1967): *An Investigation into the Concentration and Dispersal of Economic Activity with Particular Reference to South Africa*; Ph.D. dissertation, University of Natal, published as: McCrystal, L. (1969): *The Concentration and Dispersal of Economic Activity*: A.A. Balkema, Cape Town.
 - 3) Hirsch, W.Z. (1959): 'Expenditure Implications of Metropolitan Growth and Consolidation': *Review of Economics and Statistics*: Vol. 41.
 - 4) Shapiro, H. (1963): 'Economies of Scale and Local Government Finance': *Land Economics*: Vol. 39.
 - 5) Associazione per lo Sviluppo dell' Industria nel Mezzogiorno: (1967): *Ricerca sui costi D'Innesamento*: Roma.

This composite picture adds up to one fairly clear conclusion - that costs per head of population in the city size range 100,000 - 300,000 are likely to be significantly lower than costs in larger cities. Moreover, efficiency of operation is also likely to be impaired when cities pass 300,000, compared with smaller cities.

Apart from the administration or management of cities, a further social economic problem is the question of alleviating traffic congestion. Marginal social costs must eventually begin rising with increasing traffic volume so long as the street system remains more or less fixed. The rising costs are social because they are borne by road users in general. The additional user, such as a business firm, by adding to the congestion on the roads, raises the marginal costs of all road users. He bears only the average cost however, which, although higher than it was without him, is nevertheless lower than marginal social cost. Hence a calculation of the costs of traffic congestion, based only upon private costs, would understate the social marginal costs of increasing congestion. Since the individual, whether the head of a family or of a firm, considers only his own costs, it follows that location decisions by families and firms do not take account of the full social marginal costs resulting from the traffic congestion which their decisions may occasion.

The basis of this argument may appear to be an essentially short-run one. Increasing costs would only apply so long as the available road space remained fixed. Once congested roads were widened or new roads provided, a new set of cost functions would come into operation. Could it not be then that by maintaining a steady rate of road development, traffic congestion, and therefore rising costs, could be avoided? This is unfortunately not found in the real world. The expansion of the car population in most cities is taking place extremely rapidly, and given the long planning periods involved in redesigning the road system, the time taken in construction, and the need to find large sums of capital to finance the projects, it is inevitable that the car population will tend to outstrip the rate of increase in the capacity of the road system.

All of this would only be an argument against the large city and in favour of the small one if it could be shown that the expansion of roads is cheaper in the small than in the large city. This is in fact so since land prices vary directly with city size. Consequently, the larger the city the more expensive will the land, which has to be expropriated, tend to be. It follows then that the cost of alleviating traffic congestion will tend to rise with increasing city size.

The last socio-economic aspect which I shall mention is the question of the adjustment of the space economy to changes in underlying economic conditions. The tendency is for urbanisation to be a cumulative process, growth in a particular urban area tending to breed more growth. Once a city achieves a position of importance, vested interests become entrenched and resistance to change grows in strength. Thus, although underlying economic conditions may, for efficient functioning of the economy, require a shift in the spatial distribution of economic activities and population, the existence of large population centres will tend to make the response sluggish. In fact it is not unreasonable to expect this change to take place over many decades - Professor Colin Clark recently suggested a century or more. It is postulated that the larger the cities, the stronger will be the vested interests, and therefore the more sluggish will the response to changed economic conditions tend to be. It should be one of the aims of economic policy to ensure that shifts in underlying economic conditions produce a response in the economy as rapidly as possible. In the space economy, this is most likely to be achieved if the growth of massive conurbations could be avoided. It is clearly neither practical nor desirable economics to try and change an entire urban hierarchy. But it should be possible to limit the number of centres whose populations rise above say 300,000 in order to have a system with a fair degree of responsiveness built into it.

3. THE PRIVATE ASPECTS:

i) Firms:

There is an increasing tendency for only the initial processing stages of resource-based industries to be located at the sources of raw materials, and for subsequent stages to be located at the large industrial complexes-cum-markets. Not only does this apply to consumer-orientated industries but, with increasing 'roundaboutness' in the production process, industrial areas are increasingly both the markets and the sources of materials for other industries.

A consequence of all this is that both as markets and as sources of material inputs, the larger cities have substantial advantages over the smaller. This means that a location at a major industrial centre tends to be a low cost location with respect to the transportation of materials through their various stages until they can be provided to the final user. The advantage which accrues to larger cities as a result of these factors tends to be 'open-ended' in the sense that there does not appear, *a priori*, to be any 'cut-off' point beyond which further growth of the city produces a reduction in these benefits.

It is worth pointing out, however, that industries which are attracted by industrial markets and the availability of semi-processed material inputs, are less affected by the population size of the centre in which they locate than are consumer-orientated industries. It is indeed possible to envisage a complex of interlinked producer-orientated industries being established at particular locations irrespective of the population of the place concerned, provided that adequate labour could be attracted there.

A further aspect of importance concerns the external economies available in a particular centre. Standard theory has it that these are of such importance to industrial concerns that, in order to remain competitive, they are compelled to locate in a large centre to appropriate the benefits flowing from such economies. It is suggested that the value of these economies tends to decline with increasing size of firm; that they are highly important to small firms but that as firms grow larger the economies previously obtained externally are increasingly obtained within the firm. This may well be part of the explanation for the phenomenon of firms moving away from the established metropolitan areas as they grow larger. Their ties to these centres weaken and other locational factors become more important.

The availability of skills in the labour force is also related to the city size. With a given probability of the occurrence of a particular type of skill in a randomly selected labour force, it follows that the larger the labour force is, the more frequently, in absolute terms, that particular skill will appear. The advantages accruing to the larger urban centres compared with those which are smaller do not stop at this. It has been suggested that people with *exceptional* abilities and skills in fact occur more frequently in cities than could be predicted merely on the basis of probabilities¹).

Business services grow in variety with increasing city size, since most of them require a substantial market upon which to grow. Once they have established themselves upon the basis of their local market, most of them can 'export' their services to other parts of the country.

In sum then it appears that increasing city size benefits most the *consumer-orientated, small and new* firm as well as *business service* activities. With the growth in the sizes of manufacturing firms and a tendency towards a declining relative share of total output accounted for by consumer goods, however, it is concluded that increasing city size is likely to become steadily less important as a factor in the location of *manufacturing* activities. This is reinforced by the tendency for modern factories to use more land than was the case in previous years, combined with the rising trend in land prices which accompanies the growth of cities.

1) Ogburn and Duncan, (1964): *op. cit.*, p. 141.

ii) Individuals:

As workers, individuals tend to benefit from increasing city size, since this widens the range of opportunities available to them in their place of residence. In addition, the chances of their being out of work altogether are reduced.

The available evidence on the White population in South Africa indicates that, within the range of the nine largest cities, average family incomes rise in a close direct relationship with increasing size of city¹⁾. In order to assess whether or not this represents higher real income is no easy task. However, an indication may be obtained by looking at the proportion of total expenditure accounted for by the necessities, food and housing. This proportion declines with increasing city size, which is what would be expected from Engels' Law since average incomes rise with increasing city size. Since the lower proportions in the larger cities relate to higher absolute incomes, the inhabitants of these cities not only have, on average, a higher *proportion* of their incomes to spend on non-essentials but also larger amounts in *absolute* terms, than do the inhabitants of the smaller cities. It can be concluded therefore that within the range of the city sizes considered, living standards of White families in South Africa tend to improve, on average, with increasing size of city.

Shopping habits of consumers appear to undergo a change as cities grow in size. Despite the large cities having a wider range of shops than smaller centres, it is frequently found that suburban dwellers avoid going into the centre of the city to shop because of the increasing traffic congestion and scarcity of parking places which tend to accompany city growth. It seems reasonable, indeed, to postulate that the marginal benefit from improved shopping facilities may well begin to decline beyond a certain size of city. Professor Colin Clark's studies in Australia indicated that a city in the region of 100,000 - 200,000 persons could give its population an adequate range of services²⁾. A study in the U.S.A.³⁾ indicated that no more than three of the 65 kinds of retail outlets listed in the census of retail trade appeared to require a population base of over 50,000. Duncan also quotes another study which indicates that, for certain types of speciality goods, stores in the largest cities have no more 'drawing power' for non-resident trade than those in cities of 100,000. He concludes that even for specialised trades, a city of 50,000 - 100,000 was sufficient to support an adequate range of retail outlets under American conditions.

Average distance to work clearly varies directly with city size. Moreover, the private motor car's effectiveness as a means of transport also tends to decline with increasing city size, both because of congestion, and the cost of and difficulty of parking. Thus as far as distance, time, convenience and cost of getting to and from work are concerned, the advantage lies with the smaller centres.

Apart from specialised educational centres, there do appear to be advantages accruing to the larger centres from the range of educational facilities which they can support. Once a city is sufficiently large to support the 'full' range of educational institutions up to university level, (estimated by Clark to be a city the size of 175,000 - 200,000 under Australian conditions⁴⁾), little increase in benefits accrue as a result of increasing size. Duncan's estimate of the 'population base' for a university in America was 100,000⁵⁾. Beyond these levels,

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- 1) Based on data given in McCrystal (1969): *op. cit.*, pp. 113-115.
 - 2) Colin Clark (1945): 'The Economic Functions of a City in Relation to its Size', *Econometrica*, Vol. 13, April.
 - 3) Duncan, O.D. (1957): 'Optimum size of Cities', in P.K. Hatt and A. J. Reiss: *Cities and Society*, The Free Press, New York.
 - 4) Clark (1945); *op. cit.*, p. 113.
 - 5) Duncan (1957): *op. cit.*, pp. 767-768.

greater size would appear to add relatively little to improving educational facilities except in respect of very highly specialised institutions. Many of the services provided by such institutions can be 'exported' to the inhabitants of smaller cities, by attracting those who are interested to go where the institutions are located. A Harvard Business School does not have to be sited in New York to survive, since it can attract students from all over the world, let alone the region in which it is located.

4. SOCIOLOGICAL FACTORS:

It is difficult, if not impossible, in an exercise such as this, to attempt to draw the threads together without making some mention, however brief, of factors which may be said to lie outside the broad 'economic' field. I shall confine myself to a short reference to some of these.

Certain specialised forms of recreational activities, such as opera houses and symphony orchestras, can be supported only by larger centres. The larger the city grows, the greater the variety of entertainment which it can support.

There is no apparent reason why the health of the people in a city with 100,000 - 200,000 inhabitants should differ significantly from those in cities with more than 500,000 inhabitants, under modern Western conditions. Indeed, rather than the smaller cities being at a disadvantage, it may well be that the environment of the largest cities produces psychosomatic disorders which impair health.

The incidence of serious crime appears, on the available evidence, to increase with increasing city size. Strategic considerations favour the dispersal of industries in more, and therefore smaller, towns.

Family life tends to deteriorate with increasing city size if such factors as the incidence of home ownership, marriage, and illegitimate births can serve as indices.

5. CONCLUSIONS:

It appears from the foregoing that increasing city size produces a conflict between various sections of society. At the public level, a city size of 100,000 - 300,000 is more favourable, both in terms of management and costs of operation, as well as in respect of the costs of alleviating traffic congestion, than are cities which are larger than this. *Consumer-oriented, small and new* industries favour increasing city size with no apparent limit, as do also specialised business services and people as workers and income earners. For people as consumers, a city of 100,000 - 300,000 would offer a range of services and recreational facilities to satisfy the bulk of the population. Cities above 300,000 offer additional facilities which probably only a small proportion of the population uses. For people as social beings, the advantage appears to lie on the side of the smaller - under 300,000 - cities. However, since the human being is a gregarious creature and likes to be 'in the swing of things', there is also a strong social urge to gravitate to the big city with its vibrant atmosphere.

Policy-making is the art of reconciling conflicting interests such as these. To weigh them all up and decide on an objective solution is beyond the capacity of an individual. Policy decisions would have to depend upon the importance attached to each of the various factors. This importance will tend to vary from time to time and between one country and another.

It is postulated that the bulk of the population's needs in respect of social, recreational, educational and shopping facilities, as well as their need for a good range of work opportunities, could be reasonably well met by cities in the 200,000 - 300,000 size range. Such cities would also meet the needs at the level of city management. If new centres were started with this objective in view, and the number of centres with populations in excess of this level controlled as far as possible, a measure of mobility could also be introduced into the economic system.

It is suggested therefore, that this is the general direction in which a reconciliation could most readily be found. The policy could also be used to reduce the growth rate of those centres which are already larger than the indicated size.

Man is no longer a creature of his economic circumstance. We must be prepared continually to re-think our positions. For young countries such as South Africa, the challenge is not to fall into the same errors that the more advanced countries have made. The uncontrolled sprawls of the huge metropolitan areas of the world are neither socially attractive nor economically essential. It is time for us in South Africa, I believe, to reconsider the directions in which our cities are moving and to take appropriate steps to change them if we do not want to face the same problems which the megalopolis brings in its wake.

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SOME LOCATIONAL ASPECTS OF PROPERTY

Peter Penny

Cape Town

This paper does not attempt a cohesive statement on the question of the location of land usages. It sets out to comment upon certain practical considerations relating to offices, shops and factories and makes no pretensions to being a contribution to locational theory.

I. OFFICES:

1. Office Trends:

A study of the economic development of 'industrially mature' countries, such as the United States and Britain, reveals that the growth of the office function has been closely associated with profound structural changes in their development. It is apparent that there has been a marked tendency for the proportion of workers employed in primary and secondary industries to decline while the proportion employed in tertiary activities (distribution, transportation, finance, insurance, professional services, etc.), has shown a sustained upward trend. This has been largely due to the increase in productivity of farms and factories. These shifts in the composition of the working force have, in particular, led to a large increase in the number of 'white collar' workers.

In 1880 over 50% of the United States labour force worked on farms; and only 9% were employed in tertiary activities. By 1950 less than 12% of the nation's labour force was employed in agriculture and the percentage employed in the various service or office-using categories had increased to 26%. Between 1900 and 1950, while the economically active population of the United States increased by 103%, the number of white collar workers increased by 322%¹⁾. The increase in the percentage of the labour force employed in office work has led to an increased per caput demand for office floor area.

Occupational shifts in the labour force in South Africa are not clearly shown by official statistics because of the continuing absorption of non-Whites into primary and secondary industries. Employment in primary and secondary industries is increasing at a rate which is only slightly below that for tertiary industries, but an analysis of the composition of the White labour force (see table below) shows that Whites are shifting from the primary and secondary sectors to tertiary employment.

TABLE I

MAJOR OCCUPATIONAL GROUPS: CAPE PROVINCE (WHITES ONLY):*

OCCUPATIONAL GROUP	No. of Workers		% Change 1951-1960
	1951	1960	
Clerical workers	69,900	92,500	+ 32%
Farmers, fishermen	63,800	50,900	- 20%
Craftsmen, factory workers	84,500	72,200	- 15%

* Republic of South Africa, Bureau of Statistics (1962):
Population Census 1960: Sample Tabulation No. 3:
Government Printer, Pretoria.

1) United States of America, Bureau of Census: *Occupational Trends in the United States 1900-1950*: Bureau of Census - working paper No. 5; quoted in 'Plan for Central Business District of Baltimore', p. 40.

The ratio of Central Business District (C.B.D.) office space to metropolitan population varies greatly according to the magnitude of the 'influence' zones for which the C.B.D. performs office functions. Whilst C.B.D. retail changes are generally indicative of internal metropolitan shifts in marketing, changes in C.B.D. office space primarily reflect regional trends. In estimating C.B.D. office space potential, projections of both national and regional growth have to be made. Cities such as Johannesburg and Cape Town which serve as regional provincial and national centres, have a relatively high demand for office space in comparison with a city such as Durban which is almost entirely a regional metropolis. Changes in the level of economic activity have an important effect on the demand for office accommodation, which has been found to be markedly elastic.

The demand for office space reflects not only the regional demand but also the 'replacement' demand - i.e. the demand created by the demolition of offices, by their conversion to non-office use, and by the upgrading of taste and dissatisfaction with conditions. In Johannesburg and Cape Town a very noticeable rise in the standard of office accommodation demanded by the public has taken place in recent years and an increasing willingness to pay higher rents for better accommodation is evident. In the United States there is a continuing trend towards greater space per employee¹⁾, and although no statistical evidence exists in South Africa, from observation it is apparent that a similar trend is prevalent.

Statistics compiled in the United States for the years 1946 and 1956 show that the ratio of office space to metropolitan population is higher on average in larger cities than it is in smaller. Between 1946 and 1956 there was an average absolute increase in C.B.D. office accommodation in the United States but an average decline per caput of metropolitan population²⁾. As it is probable that the total amount of office space within the United States increased at a more than per caput rate during this period, the decrease per caput in office accommodation in Central Business Districts must be attributed to decentralisation. In particular, the insurance business decentralised 41% from the C.B.D. core and 26% from the entire C.B.D. between 1946 and 1958³⁾.

2. Office Location and the Central Business District:

The optimum location of a commercial building depends on its accessibility⁴⁾. There are two types of accessibility - general accessibility and special accessibility. The first applies to all users and reflects the desire of an occupier of a building to be accessible for both employees and visitors, and nearness, in terms of travel time (rather than distance per se) to all other buildings and facilities in a town. Special accessibility reflects the desire of a particular occupier to be near particular other occupiers. For example, a stockbroker must be near the stock exchange. The value placed on accessibility by a stock broker governs how much he is prepared to pay for it. Thus, all offices around the stock exchange are likely to be filled by brokers since, although these offices may have good general accessibility, the stockbroker puts a high value on his special accessibility and will pay more to occupy offices in proximity to the exchange than anyone else. If special accessibility is ignored, it can be assumed that most office users want to be in the position of best general accessibility. Since this is impossible, this best position will be occupied by the person who places the highest price on general accessibility, and others will surround this position in the order that each is prepared to pay for accessibility. This perfect circle is modified in practice by special accessibility and by the age and use of existing buildings.

The factors affecting the distance (expressed in time) which the average pedestrian is prepared to walk are:

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- 1) Horwood and Boyce: *Studies of the C.B.D. and Urban Freeway Development*, p. 65.
 - 2) Horwood and Boyce, pp. 53 & 57.
 - 3) Horwood and Boyce, p. 123.
 - 4) See Turvey, *The Economics of Real Property*, p. 48.

- (i) Physiography (gradients, surfaced conditions);
- (ii) Pedestrian traffic barriers (heavy vehicular traffic, open spaces); and
- (iii) Climatic conditions (wind, rain, shade).

The key role of the Central Business District is as a concentrated place for the exchange of goods, services and ideas. The C.B.D. can be roughly subdivided into the 'core' and the 'frame'. The core is the area of most intensive business activity, where the predominant uses are the offices and shops; while the frame is the surrounding area where the uses are mixed and of lower intensity, such as motor service and sales, warehousing, car parking, light industry and possibly flats. The 'hard core' is the innermost part of the core, and is the area in which competing demands for land usage create the highest land values within the metropolitan complex.

Large metropolitan office centres have developed in consequence of the superior opportunity for pedestrian linkages in a concentrated core. The vertical growth provided by the elevator has been responsible for the development of highly specialised business functions in close association for mutual benefit. From a social and an economic point of view a region will function best if office activities are concentrated in a single tightly knit location¹). For most administrative and office activities, the C.B.D. possesses a number of important locational advantages which are not duplicated elsewhere in the region:

- (i) The C.B.D. forms a place of convergence of public transport systems and highway routes and, thus, is the most accessible location to the whole metropolitan labour pool.
- (ii) The C.B.D. has the fullest range of facilities serving employees and businesses, such as shops, eating places, banks, clubs, entertainment facilities, etc.
- (iii) The C.B.D. is by far the largest market concentration in the metropolitan area for such key business activities as banking, insurance, property, legal and accounting services.

It is significant to the present study that in the United States, C.B.D. retail cores generally have shifted only very slowly, the movement being as little as one block in a period of as long as 50 years²). Hoyt's study of Chicago showed that the average vertical dimension of the core of the C.B.D. more than doubled between 1893 and 1933, but the horizontal dimension remained unchanged. The C.B.D. core had not extended beyond its approximate area of one square mile in 100 years³). Studies which have been made in Cape Town and Johannesburg indicate a similar pattern in these two cities with regard to the retail core, the horizontal scale of which has increased far less than proportionately to metropolitan population growth. In an early study of the Central Business District, Park and Burgess described the frame as a zone of transition into which the core would slowly encroach⁴). It is now apparent that they erred in not anticipating the limited lateral growth of the C.B.D. core. It is fundamental to the definition of the C.B.D. core that it has limited horizontal area, geared to the pedestrian scale, and limited horizontal change⁵).

Offices are normally a core rather than a frame activity. Rental values will be higher where blocks of offices are congregated together, because concentration is important to tenants who require to be in proximity to those with whom

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- 1) See *Plan for Central Business District of Baltimore*, p. 50.
 - 2) Nelson, *The Selection of Retail Locations*, p. 93.
 - 3) Hoyt, *One Hundred Years of Land Values in Chicago*, p. 5; Weiss, *Central Business District in Transition*, p. 10; Horwood & Boyce, *op. cit.*, p. 10.
 - 4) *The City*, published in 1925.
 - 5) See Horwood & Boyce, *op. cit.*, p. 16.

they must do business, and because attendant amenities such as restaurants, hotels, clubs, financial facilities and transport are likely to be more accessible. However, the degree of concentration desirable in the case of offices is by no means as great as that demanded by shops.

Although there must always be an element of hazard in erecting offices in a pioneering location, a really large office building can sometimes successfully migrate to a position at some distance from the hardcore in order to obtain the advantage of better vehicular access and parking. The following factors can be offered by way of explanation for the decentralisation of the offices of certain organisations such as insurance societies and oil companies:

- (i) A central city location has been of declining usefulness as the vast amount of transactions are performed by mail or telephone. Operation is mainly 'paper work' without too much contact with the public.
- (ii) There has been a growing dissatisfaction with the unattractiveness and inefficiency (in terms of traffic accessibility and parking facilities) of existing C.B.D. districts.
- (iii) Outlying areas can, of course, offer lower rental costs.

3. Prediction of Demand:

- (i) Employment method: Estimates of increases in the number of people employed in different occupational categories, (such as the professions, finance, insurance, real estate, etc.), provide the best method of predicting the future increase in C.B.D. office floor space. A detailed analysis of trends in the areas of 'operation' or 'influence', (national, regional or metropolitan), of the various occupational categories would be necessary to forecast employment patterns. For example, the expansion of an insurance head office situated in Cape Town would be a function of the growth of that firm's business in South Africa as a whole. On the other hand, the growth in the demand for the services of medical specialists would probably be a function of the growth in that demand in the region surrounding the metropolitan area.

The method would be applied by multiplying the forecast of employees by a floor space/employee ratio per occupational category.

The difficulty in applying this method is that data on C.B.D. employment by occupational category are not available in South Africa. If the Census of Population included questions on place of work, it would be possible to make wider use of this approach.

- (ii) As the data necessary for the application of the employment method have not been compiled, a method based upon the rate at which new office space has been absorbed has to be developed. From field work, the number of square feet of office accommodation that has come onto the market in each year during a given period is established, and the trends thus indicated, (with such adjustments as seem necessary), are used as a basis for the prediction of future demand.

II. SHOPS:

1. Relevance of United States Experience:

The statistical data collated in the U.S.A. on employment, retail turnover and other subjects relevant to urban land usage, are more comprehensive than those available elsewhere (at least in the English-speaking world); and a greater volume of research is being undertaken in the various disciplines concerned with land usage. The United States has reached a structurally more advanced stage of economic growth than South Africa, and trends there may well be illustrative of what is to come here.

2. Retail Trends:

Until the 1920's the value of retail locations in the C.B.D. in the United States increased on average more than proportionately to the increase in population. This rise in land values was checked to a marked extent by the growth of intercepting retail districts in the suburbs. These suburban shopping centres developed for two principal reasons: the motor car, which reduced dependence upon centrally-orientated public transportation systems, and the creation of a multitude of 'standard brands' which led to purchases being made at the point of greatest convenience. In an examination of retail trends in the coastal towns of South Africa, it may be significant to note that this type of development was first experienced in the United States in waterfront cities, because here the Central Business District was located at the edge of the city, and population, being confined to only two quadrants, grew away from the C.B.D. at a more rapid rate than would normally have been the case with an inland town¹⁾.

Findings in the United States have demonstrated that as a city becomes larger a greater percentage of retail sales occurs in outlying shopping areas²⁾. It has been found that the percentage of retail business in the Central Business District tends to vary inversely with the population of the city - i.e. as the metropolitan area grows larger, the C.B.D. accounts for a relatively smaller share of total retail sales. In the 45 largest metropolitan areas in the United States retail sales rose 32.3% from 1948 to 1954. Sales in the related C.B.D.s increased only 1.6%. There was a wide variation around the average increase of 1.6%, but in no case was the percentage increase in C.B.D. sales as great as in the associated metropolitan area³⁾. In the same period the consumer price index rose 11%, and in real terms there was thus an average absolute decline in C.B.D. sales. This decrease was greater in the case of larger cities⁴⁾. In the period 1948-1958 in only one out of 97 metropolitan areas in the United States did the per caput volume of business done by the C.B.D. increase⁵⁾. The Bureau of Statistics in South Africa has not compiled statistical information showing retail turnover in Central Business Districts compared with their associated metropolitan areas, and the precise extent to which retail decentralisation is taking place is consequently not known. Taking account of American experience, it seems unlikely that there will be any significant increase in demand for retail space in our C.B.D.s.

It has been found in the United States that C.B.D.s are visited frequently for almost all shopping needs in smaller towns, but except for the central labour force and nearby resident population, only occasionally and for major shopping purposes in the larger cities: normal shopping is done in the suburbs; shopping for special occasions or for special goods is done in the C.B.D. A rough distinction can be made between 'convenience' goods and 'comparison' or 'selection' goods.

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- 1) Nelson, *The Selection of Retail Locations*, p. 12.
 - 2) Horwood and Boyce, *op. cit.*, p. 30.
 - 3) Weiss, *op. cit.*, p. 8.
 - 4) Horwood and Boyce, *op. cit.*, p. 44.
 - 5) Wolff, 'Central Business District in Transition', *Appraisal Journal*, July 1963, p. 365.

The former are items of daily consumption and relatively frequent purchase; the latter are items requiring comparison for selection and are usually items of relatively infrequent purchase. The principal attraction of the C.B.D. is that it has a better selection of 'comparison' goods in terms of variety and price ranges. Thus the shopper who comes to the C.B.D. desires to find the greatest selection of goods in the closest proximity in order to facilitate comparison.

It follows from what has been said above that the shops in the C.B.D. most affected by decentralisation have been those handling branded items, and that stores dealing in specialised goods have been least affected. In the larger metropolitan areas of the United States the Central Business Districts are becoming predominantly 'comparison' goods centres. The department stores in the C.B.D. have been gradually losing their share of the market. Prior to 1920 it is probable that over 90% of the total department store volume was done in the Central Business Districts. By 1948, it had fallen to 69.3% and by 1954 to 59.7%¹⁾. In the period 1929 - 1958 only about ten major new departmental stores were built in the prime retail areas of the larger cities in the United States; and in the period 1947 - 1957 only four completely new department stores were built, although many were remodelled²⁾.

Department store space in the Central Business Districts is decreasing and is being replaced by 'fractional' stores which specialise in one type of product. C.B.D. shopping is becoming increasingly orientated towards the C.B.D. working population, which has been found to account for between 25% and 30% of turnover³⁾. Although there are no data available in South Africa on trends in C.B.D. department stores space-usage, taking account of American experience it seems unlikely that there will be any marked increase in demand for department store space in our Central Business Districts. It is certainly the case that C.B.D. retail space requirements as a percentage of total metropolitan requirements are declining, and will continue to do so.

A high incidence of car ownership occurred earlier in the United States than in South Africa, but freeway development in America did not commence until after the war and therefore hardly earlier than it began in at least one South African city, namely Cape Town. It is possible that such relatively early freeway development may materially counteract decentralisation trends in Cape Town. In the United States it now tends to be the older, outlying centres rather than the C.B.D.s which are adversely affected by new shopping centres. This, however, is probably not the case in less developed countries such as South Africa, which are now experiencing decentralisation of a similar, although more controlled, pattern to that which took place in the U.S.A. in the twenties.

There are two further facts that are relevant to a consideration of decentralisation:

- (i) Shopping hours.
- (ii) Car/population ratio.

The peak shopping hours in the outlying shopping centres in the United States occur when most C.B.D. shopping has shut; in terms of South African shopping hour regulations, opening hours are restricted for almost all shops. With regard to car/population ratios, the lower incidence of car ownership in South Africa, (even among the White racial group), as compared with the United States reduces the mobility of the shopper and increases his dependence on transport systems orientated towards the C.B.D.

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- 1) Hoyt, 'Characteristics of Shopping Centres', *Appraisal Journal*, April 1958, p. 220.
 - 2) Nelson, *op. cit.*, p. 89.
 - 3) Weiss, *op. cit.*, p. 14; Morris and Zisman, 'The Pedestrian, Downtown and Planner', p. 153.

3. Retail Location Within the C.B.D.:

In the case of shops, more than in any other type of property, the element of value due to situation is paramount. It is also highly localised. The fact of congregation is important to merchants, because a given number of shops will do more business in proximity than scattered because of the cumulative attraction of a group of shops. An expensively constructed and well-designed shop in a poor situation may have little value, but in a good situation even a poorly planned and aged building may have a very high rental value. In the C.B.D. retail core, the most highly valued location is almost invariably in a direct walk between the two largest department stores. Interruptions in the flow of pedestrian traffic are harmful to retail turnover and cause breaks in rental values. Shops on one side of the interruption will almost always have a higher rental than those on the other. Such breaks are caused by cross-streets and driveways; by public, religious, educational and cultural buildings; by parks and squares; by steep grades; by vacant shops; by bars; by post offices; banks and cinemas, (although certain types of shops may benefit from the crowds which are drawn in the evening); and ground floor offices. The effect of lack of protection from sun, wind and rain is similar. Streets with shops on one side only usually reduce pedestrian traffic. A wide thoroughfare has the same effect. Narrow streets are usually better for trade because there is less traffic danger in crossing, and shop windows on the other side of the street can be seen. It is possible for one side of a street to have a substantially higher value than the other in consequence of pedestrian magnets, or interruptions, or because of excessive street width.

In nearly every case it is quite wrong to adopt a uniform basis for valuing the whole length of a street. The position of the shop in the street must be studied. The corner site offers maximum visibility, lighting and display area. Sites opposite a 'T' junction also provide good visibility. In a curved street the best advertising position will be on the concave part of the curve. Because corners are passed by two streams of pedestrian traffic, they often have an additional value which is a function of the relative value of the side street to the value of the main street. The effect of a pedestrian crossing is similar. Nevertheless, it is probable that the highest values are found in the centre of an unbroken parade in the middle of a general shopping area.

The front portion of a shop attracts most of its business and therefore has the highest value per square foot. Total value increases with depth but less than proportionately. In the case of supermarkets and department stores this is a less important consideration than in the case of 'conventional' shops. The fewer the types of trade needing the additional space produced by increasing depth, the less valuable the site. As a general rule, the depth should not be more than two-and-a-half times the frontage. The shape of a site is important as this will influence the ratio of sales space to total floor space. A rear entrance for loading goods is an asset.

The main factors affecting turnover will be the number of persons passing the premises during shop hours, the types of goods they are likely to buy and their potential purchasing power. Absolute figures derived from pedestrian traffic counts must be used with caution because they indicate only number, not intent nor affluence. Heavy pedestrian traffic composed of commuters does not generate retail trade, because with few exceptions they are in a hurry to get to office or catch a train. However, within a given shopping area pedestrian counts are useful indicators of the relative value of sites.

Where there is some distance between the retail core and a heavy office concentration, a cluster of service shops may develop. The difference between such a cluster and the hardcore is very clearly emphasised. The shops in the office area cluster are small and carry standardised items rather than 'comparison goods'. The stores and other facilities that are likely to be found are pharmacists, hairdressers, banks, stationers, dry cleaners, bars and restaurants. The best location for such shops is in an intercepting position on the easiest and normal route between the office concentration and the retail core.

4. Analysis of Retail Demand and Location:

It is the writer's opinion that of the several approaches that have been developed in the United States for estimating retail space requirements, only one has merit¹⁾. This is the 'Purchasing Power' method. It should be pointed out that accurate estimates of demand depend upon the availability of adequate base statistics, which have to be obtained principally from government sources. The method is outlined and its applicability in South Africa is discussed below.

The purchasing power method is based on the relationship between family income, family expenditure and shopping space requirements. Projections are made for population growth, retail sales per caput and the relationship between retail sales and shop floor space. The total shopping space requirements for the metropolitan area are determined and allocated between the C.B.D. and the suburbs. Estimates of the shopping space potential of a site within the C.B.D. are in general likely to be less accurate than similar measurements made in respect of a suburban or small town location, because of the greater complexity of the factors bearing upon the C.B.D. Nevertheless, the same techniques for assessing shopping needs are applicable to both the C.B.D. and the outlying shopping area.

The essential purpose of a shopping centre analysis is to assure the retailer that his venture will be successful, and the developer and the provider of finance that the return upon the investment will be adequate. Percentage rentals are the normal practice in America; the basic purpose of the retail demand analysis would be to establish whether the percentage rent will produce a return on the investment commensurate with risk. It should be noted (a) that the minimum rent that is normally guaranteed, after deduction of all outgoings, (not including mortgage charges and income tax), should provide the investor with the minimum yield thought adequate in the circumstances, and (b) that the percentage rent should provide a stake in the prosperity of the centre over and above this minimum yield, together with a hedge against inflation. The investor therefore not only wishes to be assured that the tenant is sufficiently strong to meet the guaranteed rent, but is also concerned to know the probable future level of turnover.

The same basic procedure is employed whether the problem to be assessed is the probable turnover of an individual store at a particular location, the selection of the optimum location for a shop, or the assessment of the feasibility of establishing a shopping complex. The following are the steps in the analysis²⁾.

- (i) Definition of the trade area.
 - (ii) Prediction of future population.
 - (iii) Estimate of the expenditure which the population will be willing and able to make in particular types of stores.
 - (iv) Assessment of existing and prospective competition.
 - (v) Examination of site factors.
- (i) Definition of Trade Area: Different types of shop or shopping complexes situated in the identical location can have trade areas of quite different extent. A department store will obviously draw its custom from much further away than a grocer. The extent of the trade area will depend upon the type of shop or shopping complex, on the convenience of access by public transport and motor car, and on the location of competitive shops, and on such natural and man-made barriers as rivers and railway lines.
 - (ii) Population: When the boundaries of the trade area for the particular purpose have been demarcated, the characteristics of the population within the trade area and the trends for the future must be established. The expenditure pattern of the population will be significantly affected by its racial composition, income levels, age levels, and the number of families. The trend in population

1) See Weiss, *op. cit.*, p. 33, for an outline of the several methods that have been developed.

2) This discussion is only intended as an outline of the essential considerations.

growth revealed by censuses taken in the past will not necessarily be indicative of the future because the economy of the town may be either accelerating or declining, and there may not be room for further population growth either laterally in single dwellings or vertically in apartments. The latter point turns in part upon zoning in terms of town planning schemes.

(iii) Buying Power: The total disposable income of the population within the trade area must be estimated together with the expenditure pattern broken down on a basis of retail store type. As has been said above, this pattern will vary according to the characteristics of population within the trade area. For example, the poor will spend a higher percentage of their income upon food than the rich. The population characteristics require to be examined in detail; average figures may be misleading. For example, an area composed of both rich and poor may have the same total disposable income as a uniformly middle class area, but have a quite different food expenditure pattern. Allowance must also be made for the rise in standard of living consequent upon more efficient employment of natural and human resources. When the future population at a particular date has been predicted and its expenditure pattern per caput at that date has also been estimated, the volume of business available for each type of shop can be found quite simply by multiplying the per caput expenditure for that category of shop by the predicted population.

(iv) Competition: If the trade area as demarcated should contain both a Central Business District and a suburban area, an estimate must be made of the percentage of business that will be done in the C.B.D. and the suburbs respectively. All retail activity which may be competitive must be recorded by size and impact. The floor area measurements are then converted to an annual potential turnover by applying a turnover factor per sq. ft. to the total floor area. This turnover figure represents the business that the competitive store is likely to do when the supermarket potential, for example, is fully exploited. It may in fact be more or less than the actual current turnover.

However, this 'residual' analysis may provide an inadequate answer, because a particularly effective operation might succeed in capturing a share of the market in excess of the apparent unsatisfied residue. On the other hand, if there were, for example, an especially strongly entrenched department store, new competition might well achieve less than the predicted share of the market. It should be noted that it may not be possible for a single store to capture all of the 'unsatisfied residue'. The analysis of competitive stores should not only embrace turnover estimates, but should also take account of rent levels paid by these and other shops, and of the number of empty shops in the trade area.

(v) Examination of Site Factors: The site factors, such as shape, level, frontage and access, must be taken into account. In the examination of any particular site all the surrounding properties must also be examined in some detail. Frequently the most desirable location will be an intercepting position between the residential district and the C.B.D. The most successful shopping centre locations have usually been those served by an established public transport system. It should be noted that for supermarkets, exact location is not so important as number of people and distance of competition.

5. The Importance of Data:

The accuracy of estimates of retail turnover will be dependent upon the adequacy of the data available. Where the requisite data are not compiled by public authorities, their collection may be found to be either prohibitively

expensive, (if field surveys have to be taken), or actually impossible, (if private organisations are not willing to disclose information in their possession). However, where, as in South Africa, official statistics are inadequate, it will usually be possible for the property economist to develop a method based upon the experience of his clients.

In the United States official statistics are more useful for the purposes of estimating retail turnover than in other countries¹⁾. The turnover for particular types of store is reported as such and not in terms of the categories of goods sold in the store. The official statistics indicate the percentage of retail turnover in both the C.B.D. and in the suburban areas upon a city-by-city basis. The income of families is reported on a localised basis so that the income groups within the various sectors of a city can be established.

6. The Element of Judgement:

The extent to which the conclusions of the shopping centre analysis can be mathematically deduced from the data, or are dependent upon judgement, must be considered. The 'Law of Retail Gravitation' formulated by Reilly is based upon the fact that the larger a city is, the more trade it will draw, and upon the fact that a city draws more trade from nearby towns than it does from more distant ones. Reilly's study demonstrated that distance has a greater relative influence than size, and his law is based upon the assumption that there is a definite mathematical relationship between these two factors. i. its original form his law read:

'Two cities attract retail trade from any intermediate city or town in the vicinity of the breaking point, approximately in direct proportion to the population of the two cities, and in inverse proportion to the square of the distances from these two cities to the intermediate town'²⁾.

The law has been adapted in an attempt to apply it to shopping centre analysis, for example:

'The principal retail districts within a metropolitan trading area attract trade from the residential section of the area approximately in direct proportion to the size of the retail district and in inverse proportion to the driving-time distance from each residential section to the retail district'³⁾.

It is a fact that the two most important variables are the number of items of a kind that the consumer desires to purchase, and the time taken to travel from the shopper's home to an alternative shopping centre. It is further true that the greater the number of items carried by the centre, (which is approximately indicated by the square footage of selling space devoted to the sale of the items), the greater is the prospect that the consumer's shopping expedition will be successful⁴⁾. However, although Reilly's concept may represent a sound expression of the relative influence of size and distance, despite its mathematical flavour it is as much an empirical observation as any other statement about the relationship of time and distance would be. There is no magic in saying that x is proportional to x and inversely proportional to the square of y . Whilst Reilly's conclusion may or may not have been sound in the light of the facts which he found, the wholesale application of his law in altogether other circumstances is arbitrary and absurd. It is hardly surprising that in practice it has been found to be unreliable. The fact of the matter is that a shopping centre analysis must in the end depend upon the judgement of the property economist who is responsible for its conduct. Nevertheless, the more sophisticated tools that have been developed on the basis of Reilly's original analysis, (notably by Huff), may be of utility to the property economist in the formation of his judgement.

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- 1) See Smith's discussion in 'Assessment of Shopping Needs': *Estates Gazette*: December 1963, p. 962 et. seq.
 - 2) Quoted at p. 27, Kelly, *op. cit.*
 - 3) *Appraisal Journal*: October 1954, p. 583.
 - 4) See Huff: 'A Probabilistic Analysis of Shopping Centre Trade Areas': *Land Economics*: February 1963.

7. The Tenant as a Factor:

The impact of a major tenant can be one of the most difficult judgement factors in a shopping centre analysis. One tenant can have a much wider effective trade area than another in the same store category, and an analysis may well stipulate that the entire success of the centre will be dependent upon the conclusion of a lease with a particular tenant. Where an analysis has to be made without the identity of the major tenant being known, the report will have to be qualified by some assumption as to the strength of the tenant. It is frequently beneficial to the investor to grant the major tenant a lease at a less than economic rent in order to have a magnet to pull other shops on whose rent a profit can be made.

8. The Quality of Design as a Factor:

The success of the shopping centre is dependent upon its ability to attract customers to itself and away from its competitors. This will depend upon the convenience and general amenity of the centre in terms of distance, range of goods, parking provision and the general pleasurable nature of the shopping expedition to the customer. The functional and aesthetic aspects of the design can therefore be seen to be of the greatest practical importance in making the centre competitive with its rivals.

III. INDUSTRIAL PREMISES:

1. Trends in Industrial Location:

The location of industries is dependent upon the economic principle of comparative advantage: industry of type *A* may possess a distinct advantage in terms of profitability over industry of type *B* in both town *C* and town *D*; but if industry *A* will operate more profitably in *C* than in *D*, then the resources of *C* should be diverted to industry *A*, and those of *D* to industry *B*. Observation of this principle creates the optimum utilisation of all national resources. The objective of an industrialist will be to locate his plant in that area which will provide the optimum circumstances for the maximisation of profits. If an industry is located in an area other than that in which it has the greatest comparative advantage, (i.e. if it is located other than at the point of least cost), costs will be higher and the resultant misallocation of national resources will be detrimental to the whole community. Should the State attempt to stimulate industrial development in an area which does not possess the greatest comparative advantage, the growth of the whole economy is adversely affected.

When industry has become established in an area in consequence of its natural advantages, the tendency towards localisation persists because of the development of specialised markets, labour, subsidiary industries, transport and ancillary services such as banking, technical colleges and research organisations.

Moreover, the growth of large industrial centres enhances the mobility of labour and avoids excessive dependence in a district on too few industries¹⁾.

- 1) Mayer, with reference to the United States, writes: 'The ... principle of economy of scale ... is ... operative in industry's choice of a general area in which to locate. All of the recent trends indicate the prospects of continued concentration in and near the major market areas, which means the metropolitan areas. It is true that industry is decentralising, but only in the sense of deconcentrating away from the more congested older cores of the metropolitan areas. The maximum growth of industry has been, and most likely will continue to be, in the major metropolitan areas but outside the older, crowded concentrations. New plants are locating for the most part in the fringes of the metropolitan areas. But there are definite limits to the extent to which industry can deconcentrate. This is clearly evidenced by the failure of the various governmental policies within recent years, the object of which was to encourage dispersion of industry for defence against atomic attack. The mere fact that it takes a concentration of people to carry on most industrial operations results in the creation of new concentrations if the economies of large-scale industry are to be realised'. See 'Some Current Trends Affecting the Value of Industrial Property': *Appraisal Journal*: January 1958, p. 94.

In deciding upon the location of his industry the industrialist must take account of both processing costs, (those incurred in transforming raw material into finished goods), and transport costs, (those incurred in moving raw material to the factory or finished goods to the market). In this discussion we will consider factors relating to the region and then factors relating to the neighbourhood.

The problems that the industrialist will encounter in production and distribution can be broadly divided into primary and secondary considerations. The primary factors are those upon which the selection of a region is based. The secondary factors are taken into account in the search for a site within this region. In practice the problem is unlikely to be so simple and the industrialist will probably have to accept some compromise solution. Nevertheless, in the great majority of factory locations the primary factors involved are markets, materials and labour. Secondary factors will probably include transportation, climate, services, relation to other industries, living conditions in the town, local rates, and the sites and buildings actually available for sale.

(i) Primary Factors:

(a) Markets: Accessibility to markets will be the deciding factor in location in the following circumstances:

(i) Where it is more economic to transport the raw materials than the finished product: this will usually occur where the finished product is bulky and the loss of weight in production is negligible. The last stages of manufacture of motor cars takes place near markets, because the final product is costlier to transport than the parts. It should be noted that a change in freight costs may determine whether it will be advantageous to produce near a market.

(ii) Where services to consumers on delivery or repair is important.

(iii) Where the finished product is perishable.

(iv) Where the raw materials are available everywhere, for example, brickmaking.

(b) Raw Materials, including Power, Fuel and Water: These will be decisive elements in a selection of a location in the following circumstances:

(i) Where the mass of the raw material is substantially reduced in the process of manufacture: for example, grape pressing, processing oil from coal or smelting ore. Again the level of the freight rates may be vital to the decision; in South Africa the tariff policies of the S.A.R. & H.¹⁾ are of particular consequence.

(ii) Where the raw material is perishable, for example, milk.

(iii) Where the industry uses large quantities of power, fuel or water. Because electricity can be transported cheaply over long distances, it has tended to reduce the importance of proximity to the source of power.

(c) Labour will be a vital factor where:

(i) The concern is labour intensive: i.e. where a large labour force is required.

(ii) Special skills are required.

1) South African Railways and Harbours (Administration).

(iii) Wage costs are a high percentage of total costs.

(ii) Secondary Factors:

(a) Transportation: The great significance of freight rates has already been emphasised. Note must be taken of the facilities for road, rail and air transport. It may also be necessary to consider sea transport and the facilities available at the nearest harbour.

(b) Climate: This will sometimes be important. For example, spinning and cotton mills are best situated in a humid atmosphere, and colour printing is easier where it is dry. Moreover, labour efficiency tends to increase in a cooler climate.

(c) Services: Electricity, water, gas, drainage and fire brigade services must be carefully noted. It sometimes occurs that an industry is not able to be situated in a particular town because its effluent cannot be emptied into the sewerage system.

(d) Living Conditions: The social amenities available to industrial employees must be taken into account.

(e) Rates: Municipal rates can be so high as to discourage industries. Because of the high rates prevailing in some of the older towns in the United States, they have lost much industry to parts of the country where rates are lower¹⁾.

(f) Sites and Buildings Available: The possibility of purchasing a particular suitable site or building may influence an industry to come to a particular town.

(g) Neighbourhood: Having chosen a general area, the following factors are important in the selection of a neighbourhood within that area:

(i) Proximity to railways, and, in particular delivery services from the railhead.

(ii) Access to main roads.

(iii) Transport facilities for employees.

(iv) Accessibility of housing for employees; and

(v) Accessibility to banking and other business facilities.

2. A Comment on South African Government Policy:

The Report of the Tomlinson Commission in 1955 set the basis of the policy of separate development and established the principle that the flow of Bantu labour into the White cities of South Africa should be reversed. The proposal in this Report that the Bantu areas should be developed by White entrepreneurship was, however, not accepted by the Government and the policy of border area development was adopted. Initially, only positive measures to stimulate the development of industry in border areas were taken and no restrictive measures were placed upon the established industrial complexes. Industrialists who located factories in border areas were given tax-reductions, cheap finance (whether by way of loan or rent), lower wage rates for Bantu workers than existed under industrial wage legislation in the White industrial areas, and other concessions. Not insignificant success was achieved through this policy. The Report for March 1965 of the Permanent Committee for the Location of Industry and Border Area Development stated

1) Armstrong: 'Valuation of Industrial Property', *Appraisal Journal*: January 1953, p. 44.

that over R65 million had been invested in border areas during the previous four-and-a-half years, that 60 new enterprises had been established and 33 existing concerns extended. The Permanent Committee's Report for March 1966 stated that in the five years since the inception of the border area development scheme, 91 new projects had been established and 52 companies had extended their activities. In 1965 alone a capital in excess of R60 million was invested. However, to an important extent the areas which were developed in this period were extensions of the existing White industrial complexes. Rosslyn is only 12 miles from Pretoria and in closer proximity to the industrial area of Pretoria West; Hammersdale lies midway between Durban and Pietermaritzburg; and the large textile mill established in the Eastern Province adjoins the White town of East London.

A change in Government policy from the mere application of stimulants in border areas to the control of industrial development in the present metropolitan areas has occurred and is evidenced by the Physical Planning and Utilisation of Resources Act of 1967. In terms of Secs. 2 and 3 of this Act the permission of the Minister of Planning has to be obtained for the establishment of new industrial townships and the establishment or expansion of plants. Fear has arisen that industrial expansion in the existing metropolitan areas will be stopped; it is submitted that this is based upon a misconception of government policy. It may be useful to state what types of industry it is practicable to move to border areas and what the writer understands to be the policy of the Government. In the discussion above of trends in the location of industry, we have indicated the benefits of industrial concentration or agglomeration in outlining the factors in selecting an industrial location and, more specifically, in discussing the reasons for the tendency towards localisation once industry is established in an area. It is evident that the locational requirements of many industries would not be met if they were prevented from becoming established in a major metropolitan centre. The industries which can move to border areas are those which have a standardised product and are unskilled or semi-skilled labour intensive (as opposed to skilled labour intensive), and those which process raw material which is available in a border area. If industries dependent upon the economies of agglomeration were forced to move to border areas, this would be detrimental to the economy of the country and would frequently lead to the liquidation of the industry concerned. In the light of the excessive dependence of the Republic upon gold as an export, (in 1966 - the most recent year for which statistics are available - gold production was 39% of the sum of gold production and other exports), it is especially desirable that industries with an export potential be developed and vital that the export potential of the Witwatersrand area should not be frustrated. The great comparative cost advantage in international trade of the Southern Transvaal lies principally in the availability of cheap iron ore and cheap coal leading to cheap steel, and this area has an export potential which is unduplicated elsewhere in the Republic.

The question arises whether, in view of the clear intention of the Government to restrict the entry of Bantu labour into the White areas, industrial development will be curbed. It is suggested that, regardless of Government policy, a fundamental change in the industrial structure through greater mechanisation and automation is to be expected and that in many industries, and in particular in the important metal and chemical industries, there will be a decline in unskilled labour requirements. In the United States, and in other industrially advanced countries, very dramatic increases in productivity have taken place in recent times through the introduction of automation, a corollary being that unskilled labour requirements have fallen. An aspect of mechanisation has been a great increase in the land area required per employee, and it therefore follows that even if the number of Bantu workers in the established industrial areas declines there will be need for a substantial increase in the volume of industrially-zoned land.

The Government has indicated consciousness of industrial trends and is flexible in its attitude towards the granting of industrial zoning. In June 1966 the Deputy Minister of Bantu Administration and Education stated: 'I have had to deal with many applications from industrialists applying to extend their industries on land not proclaimed for industrial use. I agreed in most cases because they convinced me that they need the land for mechanisation and when in operation they would use less Bantu labour than at present'. In August of the same year the

Deputy Minister said: 'There is unquestionably tremendous scope for development in these areas, and particularly on the Reef, for highly capitalised mechanised industries using the very minimum of unskilled labour. For such industries, I repeat, there will be no shortage of industrial sites nor other facilities ... It is imperative that we should guide the future industrial development of the metropolitan areas along lines through which they will make the greatest contribution to the national economy... We can only do this by building up industries which have a competitive advantage in foreign markets. The Witwatersrand complex would, with its surrounding iron, steel and engineering industries, seem to enjoy particular advantages for the development of exports enjoying comparative cost advantages. These industries - the iron, steel, engineering and chemical industries - are all of a highly technical character, requiring heavy capital investment and very possibly a low non-skilled labour complement ratio to capital investment. My Minister and I will, with the Government's blessing, do everything in our power to make available the necessary locational and other facilities to make possible the attraction and development of such industries in the Witwatersrand and other metropolitan areas'.

It is apparent that it is no part of the policy of the Government to hamper the development of industry which must of necessity be situated in the existing metropolitan complexes and that no special problems will face such industry in securing its optimum location.

Herbert Penny (Pty) Ltd.,
Cape Town.

FACTORS DETERMINING THE NATURE AND SIZE OF
A SUBURBAN SHOPPING CENTRE

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Although the need for adequate and conveniently situated business premises is fully taken into account in modern city and suburban planning, the development of such facilities and thus the nature and size of the services made available to the community, is the function of the business entrepreneur. It is true that the investor in a shopping centre is interested mainly in the long-term profit possibilities of the investment. However, maximum profit can only be achieved if in the planning stage due consideration is given to, inter alia, the present and future needs and purchasing power of the population.

In this paper the many factors which play a role in the determination of the nature and size of a planned suburban shopping centre on a particular site will be discussed from the point of view of the entrepreneur. Realistic and proven mathematical models for shopping centre development do not as yet exist, nor are the empirical data and the comprehensive generalisations and analogues on which such models can be built available at present. In the absence of a generally accepted frame of reference, in which the multitude of factors can be handled in hierarchical fashion and their interrelationships and varying influence fully revealed, the treatment here will rather be in the nature of enumeration and description of the factors as they enter, at various stages, into the decision-making process of the developer. Selection of factors reflects both the present state of our knowledge about them and current practice in business centre planning. Unfortunately much of the latter is still based on inadequate and incomplete empirical data, subjective judgement and irrelevant experience.

After selecting a 'suitable' site for the proposed shopping centre, the developer considers the various factors entering into his decisions at each step of the market analysis. This analysis usually involves the following steps: First, the *probable trade area* must be delineated on the basis of certain assumptions in connection with the quality and availability of probable tenants, and taking into account distance and driving time, natural and artificial barriers, competitive complexes in the central business district and surrounding suburban areas, etc. Secondly, the *potential demand* for various retail categories and services within the demarcated trade area must be estimated on the basis of the size, characteristics and purchasing power, expenditure patterns and buying behaviour of the present and future population. Next, estimates must be prepared of the proportion of the total expected sales volume in the trade area that could be captured by the facilities in and around the trade area - i.e. what will the *suburban share* be vis-a-vis the C.B.D. provided that adequate local retailing facilities were available? In estimating the proposed centre's share of retail expenditures available to the trade area facilities, the mass and quality of competition within and around the trade area must be taken into account. On the basis of the centre's share and the characteristics of the trade area, the *overall size and the internal space allocation* to various retail categories is then determined.

It is clear from the above that some important aspects of shopping centre development fall outside the scope of this paper. One such aspect is the application of the developer's skill in the provisional selection of a 'suitable' site for shopping centre development, which precedes the analysis described here but involves similar judgements and consideration of the same type of factors. Another aspect not considered is the detailed methodology of market analysis for shopping centre planning. The steps in the analysis are merely used as a framework to explain the interplay of various important factors in the situation.

1. WHAT IS A SHOPPING CENTRE?

The Urban Land Institute in the United States provides the following commonly accepted definition of a shopping centre:

'A group of commercial establishments planned, developed, owned and managed as a unit, with off-street parking provided on the property and related in its location, size and type of shops to the trade area which the unit serves'.

Shopping centres are planned to provide shopping facilities of a wide variety at a more convenient point than the down-town shopping district. The developer makes sure of including at least one large department store and plans other facilities around it. Shopping centres may include retail facilities of all sorts as well as banking, professional, recreational, entertainment and other services. Individual stores are grouped for the greater convenience of shoppers and maximum benefit of retailers. Since the one or two department stores are the main attractions, the other stores are planned in such a way as to feed off the pedestrian traffic generated by the department stores. The stores are tailor-made to suit the requirements of different retailing operations - e.g. impulse stores such as gift shops require a relatively large frontage, while furniture stores, restaurants, etc. require a lot of back-space. The retail area of each store in a successful centre is related in size to the number of customers at peak periods.

Ideally, in planning the size, nature and extent of the retail facilities to be provided, the developer sets certain standards for the selection of suitable tenants. The quality and consumer acceptability of tenants are of the utmost importance to the success of a shopping centre.

The above definition of a shopping centre refers to the off-street parking normally provided on the property. This is one of the most important characteristics and advantages of shopping centres. The location of the parking area is selected at a point of maximum accessibility and the parking lots are scientifically planned for the convenience of the driver and the prevention of accidents.

Shopping centres are usually classified in three distinct categories according to their size, scope and location, namely, the *neighbourhood* shopping centre, *community* centre and *regional* centre. The *neighbourhood* centre caters for the daily shopping needs of the population in its immediate vicinity, (a few street blocks or part of a suburb), and has an overall floor area of at least 20,000 square feet. In addition to at least one food store or supermarket and a number of convenience goods stores, it may accommodate a chemist, filling station, barber shop, beauty parlour, etc.

The *community* or intermediate centre serves a bigger area extending over at least one large suburb. It usually has as its principal tenants a large supermarket and a variety store or smaller (junior) department store; and in most cases caters to the weekly shopping needs of its customers.

The *regional* shopping centre attracts customers living as far as 10 to 15 miles from the site, and is normally centrally situated between several suburban areas or even cities, giving it a trade area population of at least 150,000. Approximately 40% to 50% of its rentable area is occupied by one or more full fledged department store, and the rest is designed to create complete comparison shopping facilities; business, professional and personal services; entertainment; and sometimes even office accommodation and residential units. The regional shopping centre caters to the complete ordinary shopping needs of the residents of the trade area. Most shopping centres in South Africa today are of the neighbourhood and to a lesser extent of the community or intermediate type. At present there is limited opportunity for the larger regional shopping centre development as a result of several factors. Some of these factors were mentioned by H. Hoyt in 1963, after having made a study of the prospects for planned shopping centres in this country¹). Firstly, the development of bigger and further situated shopping centres is hampered by the smallness of the market in terms of

1) Hoyt, H. (1963): 'The Prospects for Planned Shopping Centres in South Africa': *South African Journal of Economics*: 31, 153 - 158.

purchasing power. Secondly, the down-town traffic situation has not yet reached the stage where shopping by motorcar becomes virtually impossible. Thirdly, a lower percentage of housewives, as compared to America, have cars at their disposal for shopping trips. A considerable amount of shopping in South Africa is still done by telephone and goods are delivered at home. In America, where this is not true to nearly the same extent, shoppers have to convey most of the items bought themselves. The average American family has two cars, and the housewife uses one for shopping purposes. These factors necessitated the development of shopping centres with ample parking facilities. With the construction of more highways, the growth of suburbs, the increase in purchasing power and per caput ownership of cars, and the growing traffic problems in the city centres, etc., the demand and opportunities for the development of conveniently situated centres in South Africa are increasing rapidly.

2. THE TRADE AREA OF A SHOPPING CENTRE:

The trade area of a shopping centre is by no means an exact concept. Literally it refers to the entire area from which customers are, or may possibly be, attracted. Such an area cannot be delineated precisely since unusual circumstances or pure chance may be responsible for bringing a small proportion of customers from practically any point to a particular shopping centre. In order to be meaningful and usable as a scientific instrument for planning purposes, the trade area of a shopping centre is usually defined as that area from which a major proportion (say 80% to 90%) of the total sales delineated will tend to have a more or less elliptical shape with its principal axis coinciding to some extent with a straight-line running through the C.B.D., and the subject shopping centre. The elliptical shape will however be distorted by factors such as competitive retail facilities located near and not directly inboard to the shopping centre, man-made and natural barriers, road patterns and other transport facilities, and a multitude of other factors such as the buying habits, attitudes and customs of the population¹).

During a limited period of time the smallest area from which a given major proportion of the total sales volume originates - i.e. the trade area - is relatively constant in size and shape, and must be considered a partial function of the nature and size of the shopping centre. Therefore, when we study the factors determining the size and nature of a shopping centre, those factors having a direct influence on the shape and size of the trade area are of the utmost importance and should receive detailed study and analysis. In fact, the trade area and the needs of the people contained therein is the *raison d'être* for the existence of the shopping centre, and is in turn greatly influenced by the size and nature of the proposed shopping centre. In planning a shopping centre on a particular site, the first step would thus be to determine the probable size and shape of the area from which the major portion of the total sales volume will be attracted. For this purpose the trade area of a shopping centre may be defined as: the smallest area from which the centre, *on certain assumptions*, expects to derive on a regular basis about 80% of its total sales volume.

3. HOW CAN THE SIZE AND SHAPE OF THE TRADE AREA FOR A PROPOSED SHOPPING CENTRE BE ESTIMATED?

As stated before, current methods employed to estimate the probable trade area that a given shopping centre will have, depend partly on established generalisations based on empirical measurement and partly on subjective judgement. As far as possible, and where applicable, the most up-to-date empirical information and proven principles should be applied before sound judgement and experience come into play.

(i) Preliminary Considerations and Assumptions:

Since the locality, nature and size of a centre is one of the most important factors determining the trade area, an assumption must at the outset be made concerning the nature of the development likely to be justified by the

1) See Brummer and Mason ('The influence of driving time upon shopping centre preference' in *Journal of Marketing*: April 1968, p. 57), for comments on the shape of shopping centre trade areas in Toledo, Ohio.

potential - i.e. in practical terms: is a regional centre indicated by the circumstances, or does the locality of the site and other factors point to a community or neighbourhood centre? This procedure may sound illogical at first sight, but it is necessitated by the interaction between the nature and size of the shopping centre and the shape and size of the trade area. This makes a provisional and rough assumption as to the size and nature of the shopping centre unavoidable - e.g. that it is to be a community centre with at least one department store. At this stage experience and judgement on the basis of available empirical evidence and reasoning by analogy is of the utmost importance. Once the major preliminary assumption as to the sort of centre envisaged has been made, additional assumptions regarding the availability and quality of possible tenants; the efficiency of the architectural and development plan; changes in the competitive situation; the physical characteristics of the site, including its size, topography, accessibility and location in relation to the rest of the area, etc.; are also necessary before attempting a final estimate of the probable trade area.

(ii) Application of Established Generalisations
Concerning the Probable Trade Area:

As a result of trade area studies using survey techniques, a number of important empirical regularities have been shown to exist¹). For instance:

- (a) The proportion of consumers and consumer expenditure attracted by a shopping centre varies with the distance from the shopping centre.
- (b) The proportion of consumers patronising various shopping centres varies with the range and depth of merchandise offered by each centre.
- (c) The distances that consumers travel to various shopping centres vary for different product types.
- (d) The proportions of consumers and consumer expenditure on a given product type attracted by competing centres also varies with the retail floor area allocated to the merchandising of that product type.
- (e) Some other generalisations about the size and shape of the trade area have already been referred to, and some others will be discussed presently.

Although most of the above regularities are not quantified or formalised, they can serve as a basis for analysis and the formulation of hypotheses which can be put to the test in a specific area. A few analysts have, however, attempted to express their theories in terms of mathematical propositions which could be tested empirically. Perhaps the best known efforts in this connection were made by the so-called 'retail gravitationalists'. The original law of retail gravitation based on a three-year study by William Reilly (University of Texas) of trade patterns between cities, stated that two cities attract trade from an intermediate town in the vicinity of the breaking point approximately in direct proportion to the populations of the two cities, and in inverse proportion to the squares of the distances from these two cities to the intermediate town. P. D. Converse (University of Illinois) is credited with the modification to the mathematical expression of the original law by means of which the breaking point between cities can be calculated. (The breaking point between two cities can be defined as that point where the respective influences of the two cities are equal). The latter formula is:

$$\text{Breaking point (expressed as miles from B)} = \frac{\text{Miles between A and B}}{1 + \sqrt{\frac{\text{population A}}{\text{population B}}}}$$

This formula has been modified further for determining the breaking points between shopping centres. Basically it amounts to the substitution of *the retail floor area in square feet* for the population numbers in the above formula.

1) Huff, D.L. (1964): 'Defining and Estimating a Trading Area' *Journal of Marketing*: July, p. 34.

This formula can be applied to determine the breaking points between the subject shopping centre and the C.B.D. as well as other nearby shopping complexes and shopping centres. By adjoining these points some indication could be obtained as to the probable effect of competition on the trade area boundaries.

It must be emphasised that the area arrived at by this method is not a trade area in the sense defined earlier. Within this area the subject shopping centre could be expected to have a larger share of the market than any other competing centre, whereas a trade area (according to our definition) is that area from which the subject centre could expect to attract a major proportion of its total sales volume.

(iii) Consideration of other Factors:

The application of gravitational methods produce a trade area based only on the assumptions made in connection with the nature and size of the proposed shopping centre, measurement of time-distance between points and the extent of competitive retailing facilities. As we have pointed out earlier, other factors may also be present which may influence the trade area boundaries to a greater or lesser extent. Awareness of these factors, knowledge based on empirical evidence of their relative importance, and experience in making sufficient allowances accordingly, are necessary to validate, evaluate and adjust any trade area delineated by means of existing generalisations. It is not our intention to discuss in detail specific methods which can be applied to determine the probable influence of all factors on trade area boundaries, but merely to draw attention to some of the more important ones which should enter into the delineation of the trade area of a particular centre.

(a) Distance and driving time: Substantial evidence exists to support the hypothesis that distance per se is an important factor determining the trade area of a shopping centre. In the application of the original gravitational laws, the attractive pull of a shopping centre is expressed as a function of retail floor area and distance - i.e. the distance is not treated as an independent factor. Surveys in America has led to generalisations pertaining to the influence of distance on trade area boundaries - e.g. that it is quite likely that 80% of the business for even a large regional centre will originate within a distance of seven to eight miles of the location, regardless of other factors such as driving time, the quality of tenants, etc. The effort to reach a shopping centre is not necessarily correlated with the distance involved. For this and other reasons driving time is a more cogent factor than distance. 'When we have questioned shoppers in completed and profitable regional shopping centres we have rarely found that travel time exceeds 20 to 25 minutes', says one shopping centre analyst. Considering the fact that a large proportion of customers are women, it may be more realistic to work in terms of housewives' driving rates when estimating the boundaries of a trade area on the basis of driving time.

The object of a recent study in the City of Toledo, Ohio, was to investigate the influence of driving time upon the preferences of consumers for the five local regional shopping centres. The results of the study led among others, to the following conclusions:

i) The driving time required to reach a particular centre is highly influential in determining consumer shopping centre preferences.

ii) The most consistent and significant driving time dimensions in delineating shopping centre trade areas are the 15 minute driving points, as 75% of the customers reside within this area.

As the writers themselves point out, further research seems warranted to determine the degree to which these findings are true for other shopping centres, especially in cities where expressways exist.

An interesting result of this survey is the fact that the respective trade areas of the five centres delineated by plotting the points of domicile of a sample of shoppers on a map have amoeba-like shapes, the number of points varying with the number of thoroughfares. (A sample of licence numbers were selected from shopping centres' parking lots and traced to their residential addresses).

(b) Natural and Artificial Barriers: Natural barriers, (such as hills, rivers, coastlines, open land, etc.), and man-made barriers, (such as high-speed arterial roads, railway tracks, industrial districts, slum areas, open parks, etc.), may influence the shape and size of a trade area, partly on account of their influence on distance, driving time and density of population. In addition these barriers may also have various psychological effects on shoppers regardless of distance and the driving time involved. In this connection serious attention should also be given, particularly in a rapidly developing community, to proposed or planned structural developments, (such as roads and other transport systems, industrial and residential schemes and urban renewal projects).

(c) Tenants: The Quality of Tenants Relative to the Quality of Competition: One of the most important factors determining the extent and shape of a trade area is the quality of tenants, and especially the quality and image of the department store tenant. One department store or supermarket may attract business from a considerably greater distance than another. Similarity between principal tenants of the centre, (e.g. branches of the same retailing firm or chain), and those of other shopping centres and the C.B.D., may limit or otherwise influence the trade area. This factor, perhaps more than any other, complicates the planning of shopping centres on a given site. The names of probable tenants are not always known with certainty at this stage. Planners therefore have to rely on judgement and experience in allowing for the extent to which the tenants could possibly influence the dimensions of a particular trade area. Consultant planners usually present their findings and recommendations subject to certain conditions in connection with the availability and quality of principal tenants. Moreover the public image and customer acceptance of the same chain may vary from one region to another. This is a limiting factor in evaluating the probable influence of a particular tenant on the trade area, and makes prior attitude surveys on these topics desirable. Quantified experience of this nature, which could aid developers and entrepreneurs in their planning, is still largely lacking in South Africa.

Time does not allow touching on all the factors that should be considered in estimating the probable trade area - e.g. pedestrian traffic; reaction of competition in the C.B.D. and elsewhere to shopping centre development; changes in shopping regulations and bye-laws, in home deliveries, in domestic servant shopping, in credit systems and in the demand for personal service, etc. The relative importance of the multitude of factors influencing the trade area has not been dealt with here, largely because the empirical measurements on which multiple correlation and factor analysis of determining factors may be based, are not available as yet. Rapid progress in this direction is being made, and in the foreseeable future trade area demarcation will certainly be less a matter of judgement and much more scientific in its approach.

4. TOTAL SALES POTENTIAL WITHIN THE TRADE AREA:

Having demarcated the trade area for a particular centre, taking into account the factors and principles described above, the planner can now get down to a detailed analysis of the market situation and market characteristics within the trade area, with a view to establishing:

- (i) The total sales potential of the trade area;
- (ii) the proportion captured by existing retail facilities in and around the trade area;
- (iii) the probable share of the subject shopping centre, and
- (iv) the floor space required to serve this demand.

The above estimates should be made separately for different retail categories and store types, (e.g. department stores; convenience goods - i.e. food, hardware, chemist; clothing and footwear; furniture and appliances; and other speciality goods.

Major factors determining total sales potential are the population income levels and retail expenditure patterns in the trade area.

(i) Population:

The present and probable future numbers of the people in the trade area represent the total market catered for, and their characteristics should be studied in order to establish the future demand for the different types of goods and services. Relevant characteristics are ethnic origin, age, income and occupation and expenditure patterns, customs, habits, attitudes, tastes - in fact, their way of life generally. The depth to which population characteristics need to be analysed will depend on the preliminary assumptions regarding the type of project, and particularly on the type of goods and services to be offered. In a large population, a 'normal' distribution of population characteristics can usually be assumed - e.g. current proportions of age groups, married couples, working women, domestic servants, car ownership, size of households, immigrant families, etc. Corrections to the statistics available on a metropolitan basis can be made by means of special sample surveys, available secondary sources and even skilled observation. The main problem, however, remains current estimates of population numbers, rates of growth and realistic projections of the population of the trade area, the boundaries of which are bound to overlap suburbs, administrative and census districts. Censuses are held only every ten years and the growth rates as well as densities in our cities vary tremendously. There are nevertheless a number of useful indicators which the demographer can use as a base - e.g. building plans passed and buildings completed, zoning of land for residential use and municipal planning schemes, water and electricity accounts, etc. On this basis estimates of the present and future population of the trade area can be prepared with a fair degree of accuracy.

(ii) Income Distribution and Retail Expenditure Patterns:

After population numbers, the disposable income (and specifically the particular expenditure patterns) of the population are major determinants of the total sales potential of the trade area. Knowledge not only of the total volume of money available, but also of actual expenditure by goods category, type of store and price line, is essential. Very little information on these topics is as yet available in South Africa and can only be gained by means of thorough sample surveys. The danger of applying rule-of-thumb methods, or ratios obtaining in other countries, or relationships derived from national statistics in a particular area, cannot be over-emphasised. The uncritical application of a generalisation, (such as that the proportion of income spent on food purchases declines as income rises, (Engel's Law), thus leaving varying amounts for expenditure on other items (such as clothing, furniture, luxuries etc.)) can lead to grossly erroneous estimates. Similarly with the wide variations which may occur in income distribution in communities with identical average disposable incomes, a fairly homogeneous middle class suburb or area may have the same median per caput income as a heterogeneous area consisting of a small number of high income and large component of very low income groups. At the same time the composition of the business complex in the two areas should differ widely. On the basis of a consumer survey in the trade area, those factors such as income, ethnic origin, age, etc., having the highest discriminatory power as far as expenditure patterns are concerned, can be

used to segment the trade area population. Alternatively, the relationships between income level and expenditure patterns can be studied on a detailed area basis within the trade area, which can then be divided into different zones or subdivisions according to the proportion of expenditure on different categories of goods and types of stores. By multiplying the various population groups at each point of time by the annual per caput expenditure for each class of merchandise, the volume of disposable income available for each store type may then be estimated now and at various points in the future.

5. PROBABLE TRADE AREA SHARE OF TOTAL SALES POTENTIAL:

After estimating the total sales potential in the trade area, broken down by the potential for different categories of goods and services and types of stores catering for these needs, consideration must be given to factors determining the share that facilities within and around the trade area will capture, provided that adequate retail facilities are available. These factors include among others (i) the distance and driving time of the trade area from the C.B.D. and other shopping centres and districts whose trade areas might overlap with the subject trade area; (ii) the number, size, nature and quality of retailing facilities within the trade area boundaries; (iii) traffic conditions, including parking facilities in the down-town shopping area; and (iv) shopping habits and store preferences. There is no established formula or method available by means of which the future shopping behaviour and store preferences of customers can be accurately predicted. Empirical studies of the shopping behaviour and store preferences of suburban shoppers provide a number of generalisations as to the proportions of total expenditures on the basic retail categories normally captured by suburban facilities. For example, in most cases local suburban food stores and supermarkets attract more than 80% of the total expenditures on food items, while suburban furniture stores seldom obtain more than a 65% share of the local furniture market. The main reason for this difference lies in the 'convenience' character of most food items as opposed to the 'comparison' character of shopping goods such as furniture (where consumers usually take care in comparing values). Food items are purchased almost daily, and very few housewives undertake daily shopping trips to the C.B.D. or shopping centres more than five minutes driving-time away from home. On the other hand, furniture items are not so frequently purchased, and special down-town shopping trips for this purpose are more common. Furthermore, although most food and other convenience goods may be considered necessities, they are relatively unimportant to the consumer, and depth of assortments available does not carry the same weight as in the case of furniture and other shopping goods where the variety offered by the C.B.D. may be of major importance.

Generalisations (based on empirical data) pertaining to the percentages of total expenditures on different retail categories normally attracted by local suburban facilities are often applied by consultant researchers. Slight adjustments are made to these percentages on the basis of experience and subjective judgement to allow for deviant local circumstances.

In view of the numerous factors influencing the portion of suburban retail expenditures attracted by facilities in the C.B.D., a local consumer survey should be conducted to ascertain to what extent suburban residents shop down-town. The result thus obtained may serve as a reliable background against which estimates may be made for the probable position regarding the C.B.D.'s share of expenditures on the different retail categories, after completion of the proposed shopping centre.

6. SHOPPING CENTRE'S SHARE OF TRADE AREA POTENTIAL:

Up till now we have mainly considered those factors determining the potential market for a suburban shopping centre - factors influencing the trade area and the expenditure on different retail categories for which local facilities are likely to compete. The existence of a sizable trade area containing a substantial potential market is, however, by no means the only factor determining the mass of a particular shopping centre. Not only is competition an important factor influencing the shape and size of the trade area, (as we have seen), but it is also a potent determining factor in that share of the potential market within the trade area which the new centre will be able to achieve. It should be borne in mind

that our definition of the trade area - i.e. one in which 80% of the shopping centre's sales originate - tells us nothing about the share of the market in the trade area, nor the share of the total expenditures of trade-area residents attracted to the particular shopping centre. There can be very little justification for a new shopping centre in a suburban area where the sales potential available to local retailers is fully satisfied by existing facilities. On the other hand, it is recognised that certain stores, as a result of aggressive merchandising methods and strong customer appeal, are capable of obtaining a substantial share in almost any market or trade area regardless of the extent and nature of competition. The problem of the probable (new) shopping centre share is thus a complicated one which involves careful study of the present, as well as the future (i.e. hypothetical), competitive situation.

The starting point in evaluating the shopping centre's share is therefore the assessment of its probable effective competition from alternative retail facilities in and around the trade area. As a first step, a survey should be undertaken of competitive retail areas within and surrounding the trade area; including floor space devoted to different retail categories, effective operating levels and customer acceptability. In fact, a full-scale trade-area analysis for each of the competing complexes is desirable. The resulting configuration of overlapping trade areas, will help to estimate the share of the total sales potential available to the proposed shopping centre.

In the final estimate of the share of the available spending for which the proposed shopping centre could compete, one of two basic methods is usually employed. The first is known as the 'residual' approach, which assumes that the new facilities will compete for their volume from that part of the trade area potential not satisfied by existing facilities inside and outside the trade area. The second approach is based on the 'share of the market' which might be attracted by the proposed (new) shopping centre. It rests on the assumption that effective facilities, at a strong location with aggressive merchandising under efficient management, can capture and retain a proportion of the available potential spending more or less in the face of existing competitive facilities, rather than having to compete only for expenditures unsatisfied by these facilities. Generally speaking, use of the 'share of the market' approach is more realistic than the 'residual' approach, particularly when the management qualities and public image of the prospective tenants are known.

The next step is to express the centre's share of the market in terms of annual sales, and subsequently in floor space according to type of shop or service. For this purpose conversion weights are applied separately to the estimated expected annual turnovers for different retail goods categories in order to obtain the required size and type of floor space. Deciding on the final allocation of space in the area schedule (i.e. the nature and size) for the centre is, however, no mere arithmetical exercise. A certain balance must be maintained, amongst others, in the interests of prospective tenants and in agreement with architectural limitations. Other factors taken into account in converting available purchasing power into store space are the characteristics of the prospective customers, and tenants' policies in satisfying their needs. For example, the turnover per square foot per annum would be quite different in a low income area with small per caput sales (and where people are apt to use the food and other stores as regular communal meeting places), from in a high income area.

7. THE USE OF MODELS IN SHOPPING CENTRE PLANNING:

At the present stage of our knowledge concerning the factors determining shopping centre size and space allocation, we considered it unwise to discuss these factors in a rigid framework or too tight a conceptual scheme. The meagreness of empirical data and the absence of recorded controlled experiment and exact measurement in shopping centre development are such that the building stones for efficient mathematical models are not yet available in South Africa. In the United States, progress is being made towards developing useful models, on the results of which accurate estimates of the size and nature of new shopping centres will no doubt be prepared in the foreseeable future.

Professor Bucklin of the University of California (Berkeley), recently investigated the variables contained in a general model for trade area determination devised by D. L. Huff of the same university. The model is composed of three factors: the 'shopping utility' of the retail facility to a potential patron; the cost of reaching the facility by that person; and the strength of competing retail centres. The following equation mathematically describes the functional relationship between these elements.

$$P\left(\frac{Ha}{X_1}\right) = \frac{Ua}{Ca} \div \sum_{i=1}^n \frac{Ui}{Ci}$$

This formula states that the probability of the hypothesis that shopper X will choose facility a is equal to the rates of a 's drawing power (i.e. U_a/C_a , or shopping utility divided by cost), and the sum of the drawing power of all n centres under consideration. Trading ranges are determined by evaluating the patronage probabilities of consumers located at varying distances from the various centres. Shopping utility and cost each represent a rather complex set of factors. The shopping utility of a centre derives from two sources: one is a mass component which defines the range of goods and services available in the centre, and which provides utility by reducing the time and effort required for individual comparison and multiple purpose shopping; the second source is an image component depending on consumer perception of the centre's price level, social class of patronage, and other attributes. The cost element in this model is a function of consumer expenditure in time, money, energy, etc., necessary to reach the centre.

By means of discriminant analysis techniques applied to survey data, Bucklin was able to assign relative weights to four groups of factors, determining shopping patterns in Oakland, which can be used as inputs in the above model. These were: *distance*, *shopping plan* (i.e. transport used, number of stops, time of day, accompanied by children), *motivational* and *demographic* variables.

Further progress along these lines will increasingly take the risk out of shopping centre planning and development, and will make a real contribution to the efficient catering for shopping needs in suburban areas.

Before this ideal situation can be reached, the models constructed elsewhere must be tested and verified here in South Africa, and empirical studies must be undertaken under varying circumstances to measure the necessary factors included in the model.

Finally, we want to stress the fact that surveys undertaken to this end are much more than theoretical or academic exercises to satisfy scientific curiosity - they can take a great deal of risk out of shopping centre development, and save the developer literally millions of rands.

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TENANT AND LANDLORD -
THE JUSTIFICATION FOR BULK CONTROL ON FLATS

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Natal Town and Regional Planning Commission

Non-urban communities are incapable of providing elaborate social services. Since they normally do not need them, or are unconscious of the need for them, they suffer no sense of loss. Indeed, in the diluted environment of the non-urban context it usually matters little whether 'proper' provision is made or not. Unfortunately, what is innocuous in a hamlet is deadly in a city. To carry over the rural attitude into city thinking and action produces a paradox - rising money incomes coupled with deepening social misery. Man forgets, or ignores, that man is so constructed as to require not only money, but light, air, water and such completely uneconomic commodities as amenity, comfort, tranquility, space and beauty.

In a capitalist free-enterprise society there must obviously be a considerable emphasis on a materialist philosophy - but man has an intelligence, a conscience and a set of ideals which have given him a desire, albeit often poorly expressed, for what are known as 'the better things in life'.

Immovable property has material and emotional value; material value for the profit it can bring and emotional value for the sense of security it brings in an uncertain life. For these reasons, or for whatever other reasons make people act and think the way they do, there grew up a belief in a landowner's unfettered right to develop property in any way he saw fit. Until fairly late in the nineteenth century there might have been economic validity for such a view, though it is doubtful if it has ever been socially supportable. Under twentieth century conditions such a right is an economic fiction, since the right to develop property proves profitable only if somebody else is taxed to pay the cost of public improvements needed to support urban services.

It is so obvious as frequently to be overlooked that it is only when people come together in quantity, as they do in cities, that problems caused by population density arise. Most of what we know as controls or regulations aim at good neighbourliness or decency in behaviour - as do the ten commandments and most law. We are accustomed to, and hardly ever question, rules or by-laws affecting things, our actions and our persons. For example, directives on the materials and thickness of walls, fire escapes, water purity, driving on the correct side of the road and compulsory vaccination are samples of infringements in personal liberty applied and accepted in the belief that if we are going to get on together, the rules of the game are essential and must be obeyed.

It is typical of humanity that although people accept direction on what they do with their own bodies and rather more reluctantly on how they do things with their property, there is an enormous resistance to being told how much can be done with a property. Any control on building size, content, volume, capacity, (the whole gamut generically termed 'bulk control') raises opposition. Why human nature is the way it is, is a fact of life - it is beyond my ability and the scope of this forum to deal with this aspect of the 'why' of human nature - I shall endeavour to deal with why human needs make it necessary to have this control, and some economic aspects of devising and applying a logical system.

It is obvious that for many people there is a change in habit and method of housing; a change from individually-owned special residential properties, (that is, single family houses), to tenancies in bigger blocks. The Americans call them 'apartments' and we call them 'flats'. That this tendency is apparent you will have noticed from the frequent newspaper references to 'concrete jungles'. The very use of the term concrete jungle is indicative of disquiet in people's minds, and evidence of a fear that somehow extremely unpleasant situations are

being created, and somebody ought to do something about it.

The problem here is that we enter a field of conflict because we have to deal with relatively fewer property owners, as distinct from residents, whose aim is profit, instead of with relatively more owners whose aim is shelter and amenity and where profit is not the decisive urge. I believe the point to be that, within limits, one cannot rely on the flat-block owner to worry overmuch about social considerations or residential amenities when his main concern must be to maximise, or believe he is maximising, his profit. The conflict is between his urge to do what he wants with his property and the community's claim to protect itself from unsavoury conditions.

It is a natural tendency for a site developer and building owner to want to get as much as possible built into any single project. This means that he will usually want to cram as many letting units, as many individual flats, as he can into one building. Since the flats will contain people, this means fitting as many people as possible onto one piece of ground. In technical terms this is described as creating a high population-density. There is quite clearly a rough and ready relation between building size and people; population density can be governed, within acceptable limits, by governing building size or bulk.

High population-density, as a pure or absolute concept, is not automatically and of itself objectionable. What causes concern is the effect of the population on the social and mechanical services, and the effects on people of the unsalubrious site conditions created by dense building.

The considerations on which the findings in this paper are based have not been recently thought out, but have emerged as the result of nearly twenty years of experience, experiment, research and observations in Natal. I believe that they show promise, in an imperfect world, of being very close to a balance between private rights to reasonable profit and society's rights to protection.

So long as flat buildings are relatively scattered, the bad effects of too high a density are masked. It is only when more buildings of this type are erected in the zone allotted to them that the cumulative effects become apparent. This is exactly what happened in the mid nineteen-fifties on Durban's Berea when the building up, with new blocks, of spaces between relatively scattered flat blocks created a public outcry, culminating in a reduced density scale.

In many city districts where flats are permitted there is an admitted shortage of open space and of schools. This shortage already exists with their present populations. As the population increases the problems can only get worse. Too high a density must lead to an increasingly deteriorating position.

As far as the site of a building itself is concerned, the effects of over-building are in many cases obvious: crowded conditions; little openness and side space; limited parking and vehicle manoeuvring room; hardly any play space for children; hardly any open space for adults.

The cause of the problem is not entirely one of excessive building content; it is also caused by too high a site coverage and too little side, rear and front space. It is the combination of these adverse factors which causes the trouble.

It is often said, as though it were an answer, that only people without children will live in flats. This is not borne out by experience, nor is it borne out by the number of bedrooms being built in flats. I venture to suggest that an analysis in any city of the total zone provision for flats will show that the total provision for flats is far in excess of the childless fraction of the population. Two Natal surveys which examined, inter alia, the kind of inhabitants in flats found that only in rare cases are flat blocks to be found without children, and in many cases the proportion of children is appreciable or significant, in one survey averaging 20%. This should dispose of any theory that flat dwellers are confined to elderly or childless people. It is believed too that present trends indicate a noticeable increase in the number of families, containing children, who desire to live in flats.

It is not enough to establish the desirability, and indeed the necessity, of exercising some form of control. Whatever method is used must be shown to work business-wise. The aim of a developer is to make profits. To this end he wants a building which will give him the best return from the cost of producing the building. In our free enterprise society it is accepted that the profit motive is a legitimate and laudable urge and is the reason for developers risking development at all. It is, however, essential to distinguish between economic need for a reasonable return on investment, and greed which looks for additional profits regardless of the cost to the community.

The purpose of the kind of economic study I shall deal with is to establish bulk values which would, if applied to the development of flats on all sizes of sites likely to be encountered in any place, assure developers of an economic return on their investment under normal conditions.

At this stage it is essential to introduce and define one town planning technical term - apart from this very necessary excursion I promise to eschew jargon. The term is 'Floor Area Ratio', commonly abbreviated as F.A.R. This is defined as the ratio, expressed as a decimal, of the total floor area of all the floors of a building erected on a building site to the land area of that site. For example, a double storey building in which each floor has an area of 7,500 square feet erected on a site of 30,000 square feet would have an F.A.R. of 0.5. In the same way, a single storey building of 15,000 square feet floor area on the same size site would also have an F.A.R. of 0.5. Thus F.A.R., being related to the total floor area of a building in proportion to its site, is different from site coverage, or that proportion of a site actually covered by building. The first building in our example would cover one-quarter of the site and be said to have a coverage of 25%, while the second building would cover one-half for a coverage of 50%. To regulate F.A.R. is to regulate the size or population accommodating potential of a building, while to regulate coverage is to regulate the open space about a building.

The initial information upon which a study is to be based must be derived from a variety of recent property developments and land transactions of the general residential or flat-block class. The method employed is to compare total development costs with the rents to be expected from various types of flat. To make the figures comparable, the development costs must be converted to the percentage gross annual return required to produce a given profit margin. Comparison is then made over a range of F.A.R. values for different plot sizes. Critical F.A.R. values at which the required return is achieved are deduced for each plot size, and an F.A.R. scale may then be framed in order to incorporate these values. Sufficient latitude can be incorporated in this scale to encourage the development of large plots rather than small ones, experience having shown that a better result with higher design standards is achieved on larger pieces of ground.

The first step is to examine examples of land cost for sites in general residential use. These cost figures can represent either recent sale prices or expert assessments of current market value. In the study on which this paper is based, an examination of land cost trends for each district of a city suggested that these land values have a much stronger connection with plot size than with district. The given market land values are plotted against site area, (see Figure 2), and within the limits of the envelope containing the plotted points, a curve giving estimated average land values is constructed using trend lines as a basis. Interpolation is carried out where necessary, but it is not considered advisable to extrapolate beyond the discernible limits of the envelope. In this study no adjustment was considered necessary to take into account the effects of shape of plot, frontage width or precise location within a given district - all factors which are known to influence land prices to some extent. For example, the length of frontage affects the designer's ability to produce a good layout, and if the frontage is much less than 100 feet the land price tends to drop.

The second step is to establish a range of current building price rates within which all flat construction can be expected to fall. At the time the study from which this paper is derived was made, an average figure of R5 per gross square foot of floor area was decided upon, with upper and lower limits of R6 and R4.6 per square foot respectively. It should be noted that building costs depend a great

deal on quality and finish, on the type and size of flat involved and on the height of the building. Bachelor flats tend to be relatively expensive because of the high incidence per unit floor area of sanitary and kitchen fittings, and the need for lifts in high blocks will also increase building costs.

(At this juncture it is recorded that after the study was completed it was checked using the higher building costs which later became current, in conjunction with a more sophisticated method of costing building projects used overseas and which takes into account variations of the compound interest formula, the element of time, the depreciation of money and the sinking fund. The result was a reinforcement of the validity of the original conclusions, which were shown to be based on conservatism in the estimation of returns or profits. For this reason it appeared that a competent developer will make more profit than would appear from the original calculation method. It is the original method which is being followed in this paper).

In the third step, by using land costs from Figure 2 and the building costs established in step 2, it is possible to derive total development costs for given F.A.R. values on given plot sizes. Loss of interest on capital during the construction period is added as an extra charge. This is calculated assuming a 75% building society loan and a construction period of one year. The loss of interest is on combined building and land costs.

The fourth step deals with the annual gross return on development costs needed to achieve an economic return on investment. The study need not be concerned with net returns, although it is well to know what fraction of total development costs should reasonably be allowed for maintenance. A required gross return of 10% was used in the original study. The current figure, because of increased borrowing rates, is in the region of 12½%. A figure of 12½% was used in the check calculations referred to earlier.

In this fourth step, the total development costs derived in step three are reduced to 10% and the results plotted against F.A.R. values for specific plot sizes. Thus graphs for each plot size are produced which show the required annual return for any given F.A.R. value at maximum, average and minimum development costs. These can now be compared with expected rent income curves, in order to find out what F.A.R. scale is necessary to ensure an economic return. For simplicity only the average cost curves will be used here in making such comparisons.

Figure 3 shows the required return for the smallest plot size for which information is available, namely 14,000 square feet. For larger plots the graph bears the same characteristics, but has increased slope and greater divergence. It is not normally considered good practice to build flats on plots of less than 20,000 square feet, but the study was done in a situation where smaller plots are permitted and so they are included in the analysis.

Fifth step: here the estimating of rent incomes for the purpose of comparison with required return involves the use of typical current flat sizes and realistic rent figures. Typical net floor areas of flats, giving various scales of accommodation, have been worked out from sketch plans. These are converted to gross floor areas in order to simplify further conversion to F.A.R. values. The plan area of walls and non-lettable space, (such as certain circulation areas and servants' quarters), have been taken into account. Rent levels were based on then current practice, but as the property market was then in a state of flux in which considerable rent increases appeared imminent, a general rent increase of 10% was allowed for as a conservative estimate.

Figure 1 shows the derivation of gross floor area and expected rent per gross unit floor area, for each main type of flat encountered in the study.

It should be noted that the rent figures shown in Figure 1 do not include the provision of service or garages. These items would normally add about R2 and R3 respectively to the quoted rates. It is also appreciated that rents tend to be influenced just as much by quality of finish as by size of flat, but the figures quoted appeared to be typical average rents in the study area.

The resulting rates of rent can now be plotted against F.A.R. values for different plot sizes in a similar manner to required return in the fourth step. Figure 4 shows the graph as it appears for a plot size of 14,000 square feet. For larger plot sizes the graph exhibits the same form with increased slope. It will be noted from Figures 1 and 4 that the maximum rate of rent is given by bachelor flats, which have a clear lead over 2-bedroom flats. Apart from the apparently anomalous position of 1-bedroom flats, rent income per square foot seems to vary inversely to the size of the flat. This seems reasonable if only because of the probability that small flats are, per square foot, more expensive to build than large ones. The apparent clear lead enjoyed by bachelor flats may also partly be explained by the fact that demand for this type tends to be seasonal, and consequently rents are raised to overcome low occupancy levels.

The position of 1-bedroom flats is inexplicable and one can only conclude that the natural operation of economic forces will eventually overcome the anomaly, so that 1-bedroom flats will in time produce the second highest income rate instead of the lowest. Based on this assumption, the remaining parts of the analysis have been evolved taking 3-bedroomed flats as the minimum rent earners per unit area.

In the sixth step, Figures 3 and 4 are combined to form Figure 5. Here the full ranges of both cost and rent income are superimposed for a 14,000 square foot plot. Points of intersection between the two sets of graphs give F.A.R. values at which rent income matches the 10% return requirement for given levels of development cost and given types of flat. As indicated in the fourth and fifth steps, the present analysis is confined to comparison of return required on average development cost with minimum rent income as represented by 3-bedroom flats. For this condition a minimum F.A.R. value of 0.34 is required on this size of plot to ensure an economic return.

In the seventh step, in which Figure 6 is constructed, the required return on average costs is compared in the same way with minimum rent income for six different plot sizes ranging from 14,000 square feet to 40,000 square feet. The variation in the F.A.R. value at the points of intersection can be seen. The minimum F.A.R. values thus obtained are plotted in Figure 7. The resulting curve represents the bulk factors required to ensure adequate economic return over the known range of plot sizes. The influence of the land cost curve from Figure 2 will be noted, both curves being similar in form. The difficulties of extrapolation have already been mentioned in the first step. The nature of the F.A.R. curve shows that the absence of information covering the smaller plots might possibly be quite critical. On the other hand, current practice appears to suggest that few such sites are in fact developed for flats. It is known for instance that small, oddly shaped and poorly located sites are not good for investment and that in the long run good design on an ample site will pay. Furthermore, at this end of the scale an F.A.R. much greater than the nearest figure plotted (0.34 for a 14,000 square foot plot), would result in an excessive residential density. For example, on a 10,000 square foot plot with a permissible F.A.R. of 0.34, a floor space of 3,400 square feet would be allowed. This could produce say ten bachelor flats or three 2-bedroom flats on a site commonly used to house one family. No further significant increase of density could reasonably be entertained. There is nothing to prevent the inclusion in a development project of some more remunerative types of flat than 3-bedroom ones in order to improve the economics of that project.

It is now possible, as a final step, to construct an F.A.R. scale which, for practical purposes, permits the economic development of flats on a fairly wide range of site sizes. Such a scale is shown for two planning situations.

Figure 8 shows a scale appropriate to a more urban, as opposed to suburban, environment. It is devised to cover the most difficult economic conditions and at the same time to encourage the consolidation of small sites by giving progressively higher bulk factors to larger sites up to 50,000 square feet, after which the F.A.R. value becomes constant at 0.75.

Figure 9 shows a scale appropriate to an area of suburban character. It is a variation of the previous scale which satisfies the same economic conditions, while offering a more limited range of F.A.R. values to a maximum of 0.5 at 40,000 square feet plot size.

Thus far, this paper has been concerned with developing a basis for calculating the economic effects of desirable bulk controls. It is a fact that bulk controls on their own constitute a device of insufficient completeness to achieve a good result. They need to be combined with appropriate site coverage, side and rear space controls to make a complete system. It goes beyond the scope of this paper to derive these further controls. However, for the sake of completeness the controls which have been arrived at and been found to work in conjunction with the sliding scale of F.A.R. will be quoted.

Site coverage was referred to earlier in this paper. A maximum of 20% has been found to be suitable, any major increase resulting in rapid deterioration of on-site conditions. Provision needs to be made, and this is a complicated matter, for small increases only for the purpose of providing motor car garaging, as distinct from open parking, where the number of cars to be parked exceeds the space available under the building. This condition only tends to occur on topographically difficult sites, or in projects where there is a high proportion of smaller size flat units and where the high proportion of units in relation to building bulk generates a scale of car parking demand in excess of the norm.

The object of side and rear space provisions is to control conditions of lighting and ventilation, and to preserve amenity around buildings. They are also a useful tool in helping to minimise the effects of noise and overlooking upon adjoining properties. It is assumed that the set-back from the street boundary will always be at least the standard 25 feet building line.

The basis of the side space scale is the maintenance of a 45° angle of light between adjacent blocks of flats of similar height. It requires a side space of 15 feet for any flat block up to three storeys in height with an additional five feet for every storey above three.

Rear space is subject to the same principles, but since the rear boundary of a general residential site is frequently the common boundary between general and special residential zones, more space is called for, leading to a rear space of 30 feet with an additional 10 feet for each storey above three.

It will be noticed that the problem of the small dwelling house sandwiched between large blocks of flats on either side has not been dealt with. This problem arises mainly in a zone whose character is in transition from special to general residential. The solution seems to be in the careful and thoughtful subdivision or consolidation of land; but it is difficult to see how a solution may always be obtained in conditions of purely private enterprise development. It appears that harmonious development might only be achieved in the last resort by the readiness of the local authority to intervene with compulsory purchase or consolidation measures.

It should never be forgotten that the most important thing about a city is the people. But neither should it be forgotten that one of the aims of a sound planning scheme is to preserve property and investment values; without control, or with poorly designed control, conditions deteriorate with a consequent bad effect on property value. If bulk control is too loose, the long term effects of overcrowding, loss of amenity, traffic congestion, shortage of schools and the like tend to depress property values and investment returns.

Building bulk control is necessary both for the general welfare and for the long term protection of many individual developers and investors. That bulk control will affect the book-keeping of a project is true, but it is important to know that its effect can be calculated in advance and allowed for. Although it is socially desirable to limit the bulk of buildings, care must be taken to ensure that the investing developer will not be adversely affected to the point where it is no longer profitable to build.

To summarise the opening passages of this paper, may I remind you that for a developer in isolation there would be no need to consider any building controls. In an urban environment there are many developers and many facets of Society which interact on each other. It is the cumulative effects of buildings, people, traffic, services and the like which make it necessary for a planning authority to guide and control development. Just as it has been accepted that considerations of structural safety, bodily health and so on require laws, by-laws and regulations, so it is accepted that considerations of physical convenience, amenity, municipal economy and decent town development call for town planning controls.

I conclude by quoting Sir Donald Gibson:

'Towns should be built for enjoyment as well as merely earning a living. Most of the pleasant things we have inherited were given to us by past generations of town dwellers; we owe to our children our own fair share in ideas and beauty'.

Natal Town and Regional Planning Commission,
Pietermaritzburg.

(Formerly of Thorrington-Smith, Rosenberg and McCrystal,
Town and Regional Planning Consultants,
Durban).

Types of flat: Estimated floor area and rent

Type of Flat	Net Floor Area	Non-lettable Area*	Gross Floor Area	Current rent per month	Allowance for immediate rent increase	Estimated realistic rent per month	Estimated realistic rent per annum per gross square ft.
	Square feet	%	Square feet	R · c	%	R · c	c/Square ft.
Bachelor	250	30	325	28·00	10	30·80	112·8
1-Bedroom	600	23	738	36·00	10	39·60	63·3
2-Bedroom	800	22	976	56·00	10	61·60	75·6
3-Bedroom	1,000	22	1,220	64·00	10	70·40	68·4

* External access passages, lift wells, external staircases and parking spaces are not allowed for since no account is taken of these in making permissible bulk factor calculations.

ESTIMATED COST OF LAND PLOTTED AGAINST SITE AREA

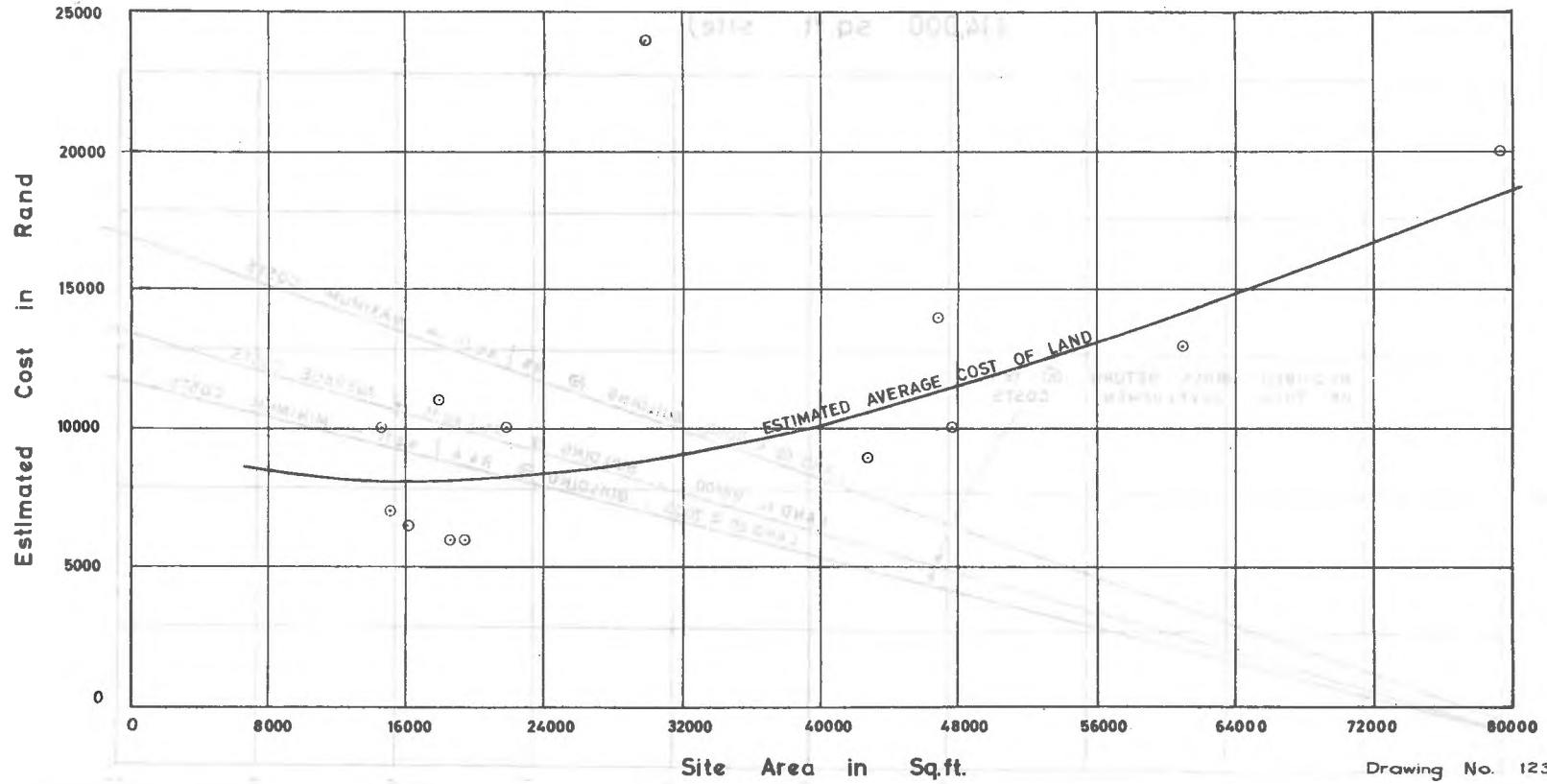
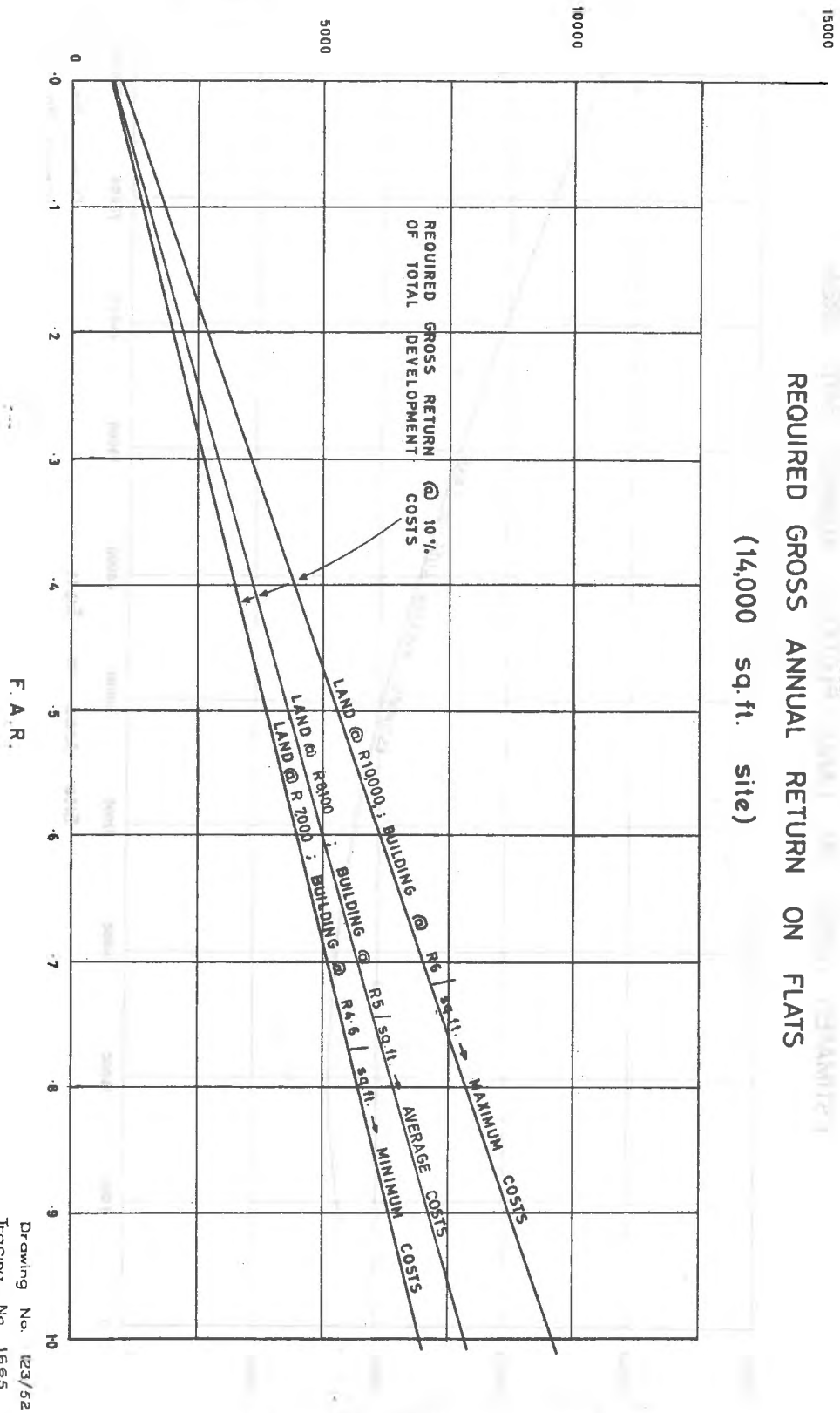


FIG. 2

Drawing No. 123/51
Tracing No. 1664

Required Return (Rand)

FIG. 3



ESTIMATED ANNUAL RENT INCOME FROM FLATS (14,000 sq.ft. Site)

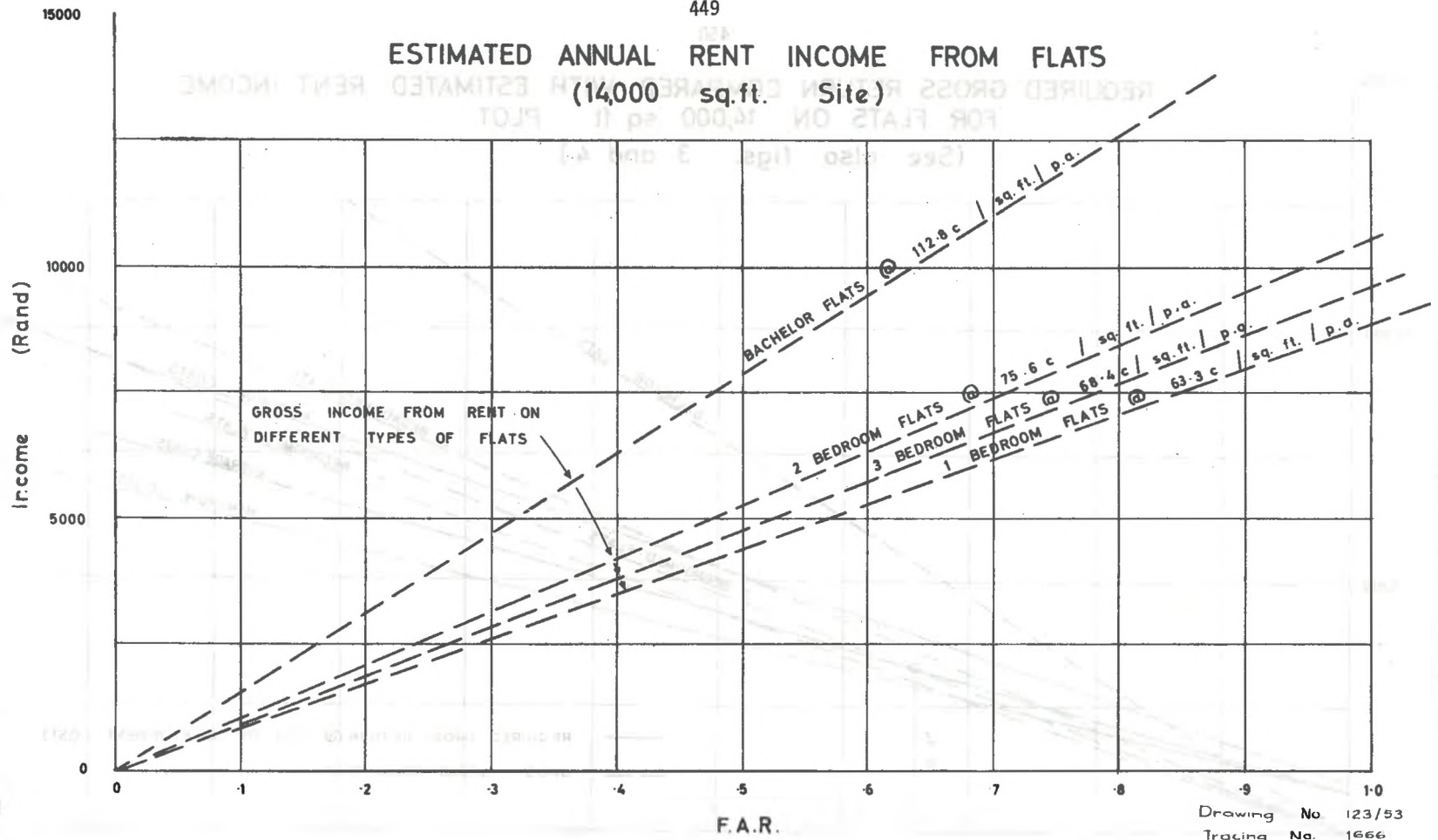


FIG. 4

REQUIRED GROSS RETURN COMPARED WITH ESTIMATED RENT INCOME
FOR FLATS ON 14,000 sq. ft. PLOT
(See also figs. 3 and 4)

FIG. 5

Required Return & Income (Rand)

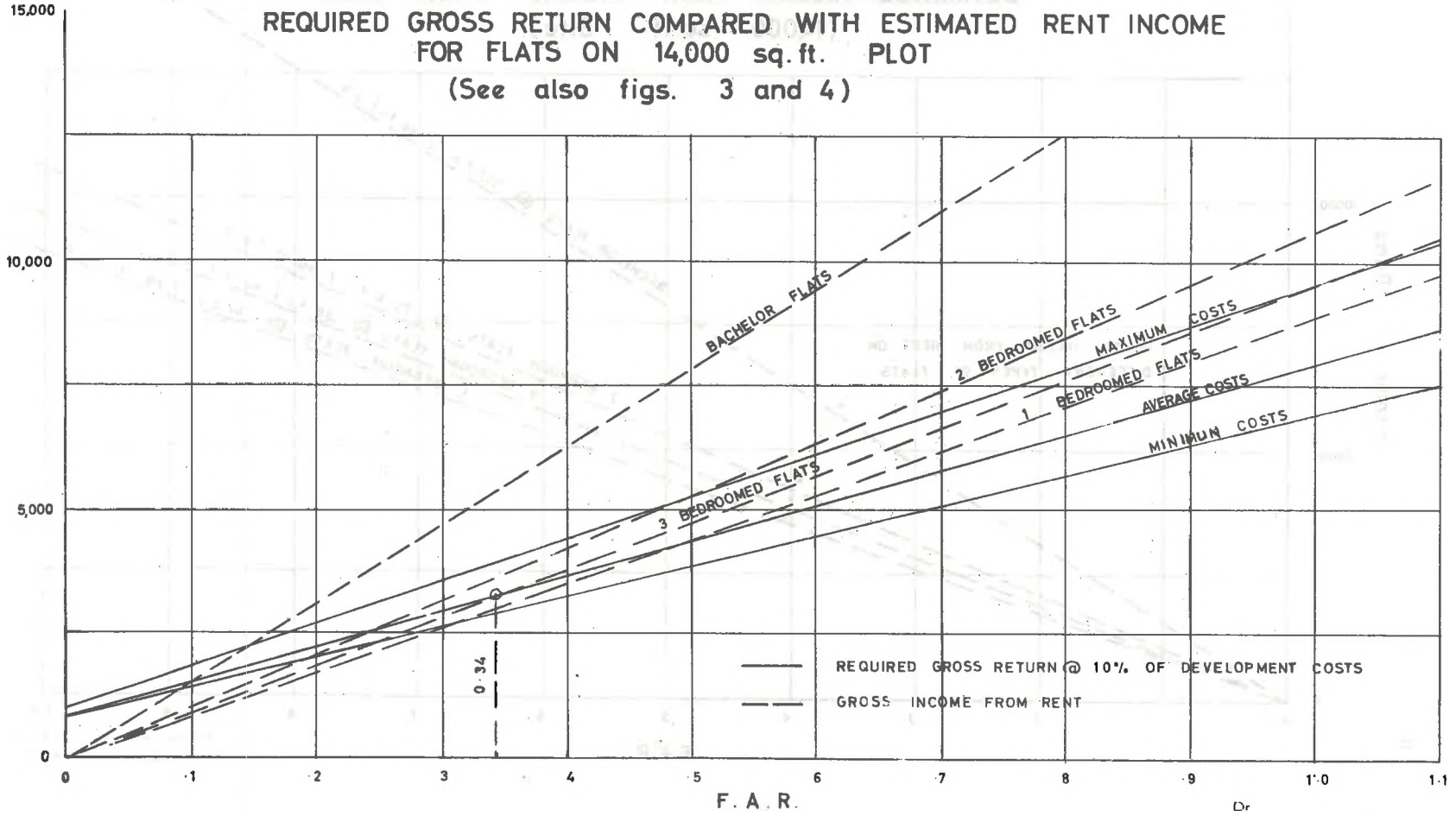
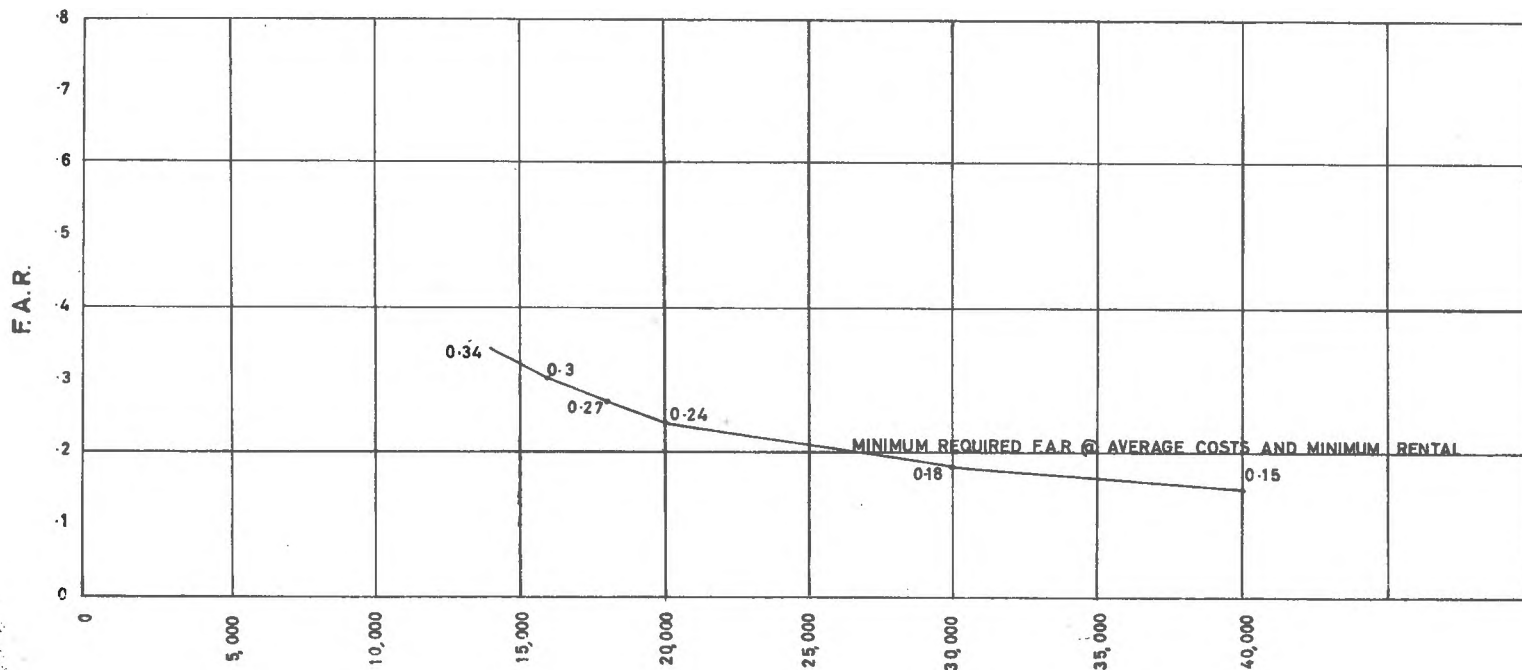


FIG. 7

CRITICAL F.A.R. VALUES



MINIMUM REQUIRED F.A.R. @ AVERAGE COSTS AND MINIMUM RENTAL

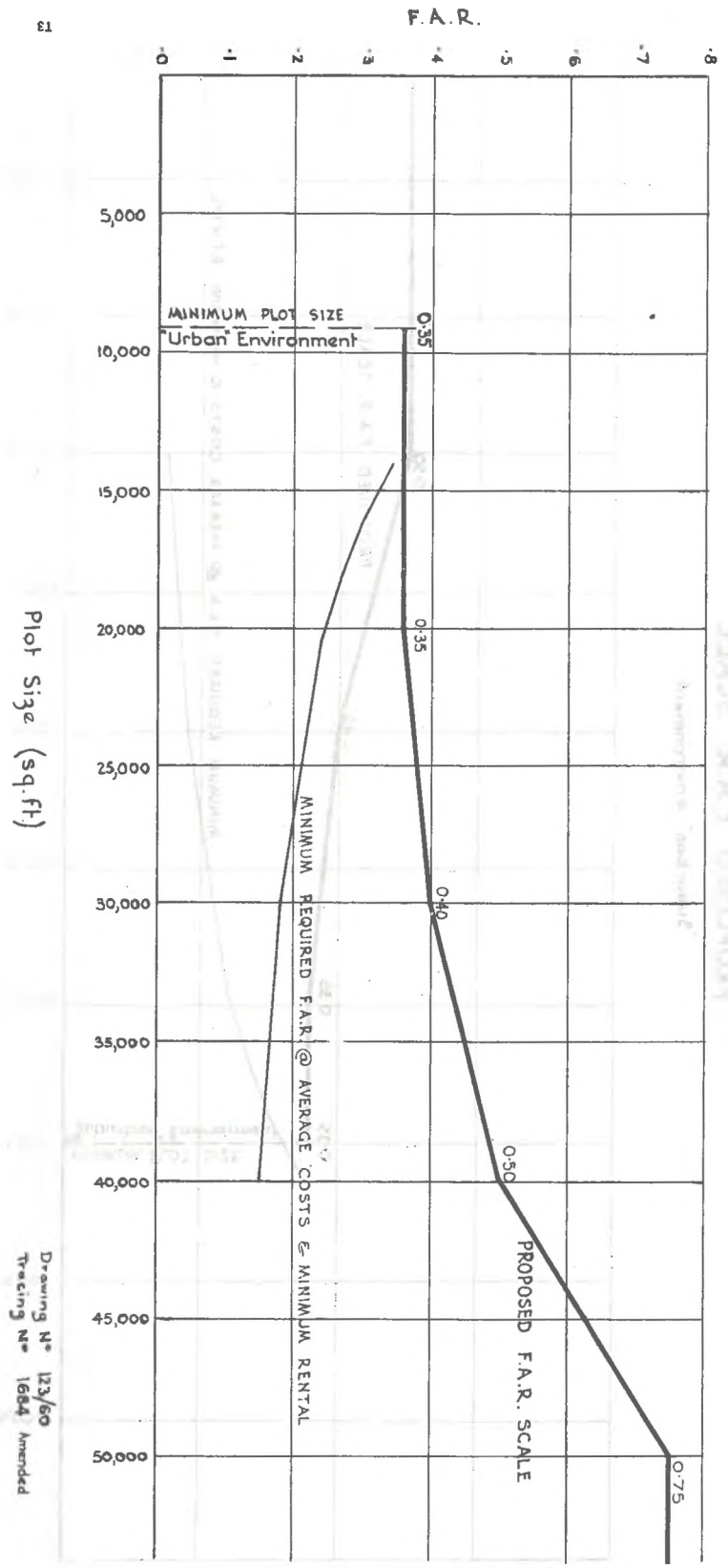
Plot size (sq.ft.)

Drawing No. 123/55

Tracing No. 1668

PROPOSED F.A.R. SCALE

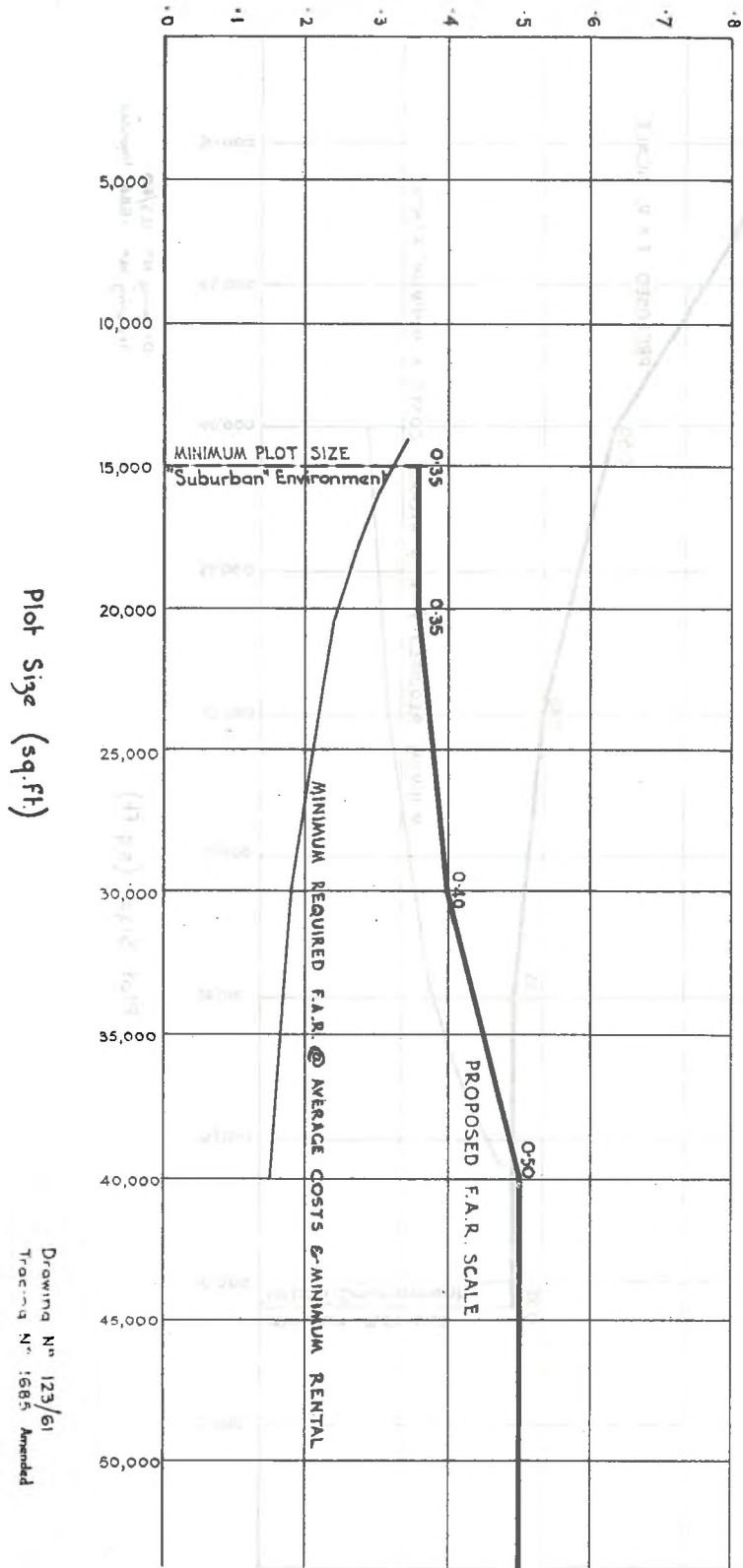
"Urban" environment



Drawing No 123/60
Tracing No 1684 Amended

FIG. 8

FIG. 9



PROPOSED F.A.R. SCALE
"Suburban" environment

Drawing No 123/61
Trace No No 1685 Amended

THE CITY-CENTRED REGION: A PROPOSED BASE FOR
REGIONAL PLANNING AND REGIONAL GOVERNMENT IN ONTARIO

Hans Carol

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1. INTRODUCTION:

The city's central-place functions constitute the main unifying bond between the people of the city and the people of the hinterland. The city forms a socio-economic hub for the whole population - farmers and non-farmers, workers, housewives and children - of a city-centred region. The commuter relations between the city as a centre of employment and the rural areas as a residence of employees is another link between city and *unland*. A third form of interrelation between the city and its *unland* is provided by outdoor recreation. With growing mobility, the whole *urban field* becomes increasingly important. This interdependence may establish a *community of interest* among the people of a city-region. It is postulated that regional consciousness and interest will mobilise the local initiative for economic development and regional government. The local initiative should be supplemented or directed by governments above the city-centred region.

The study of central functions and the pattern of central places can be made for purely academic interest; the promotion of the understanding of the cultural landscape (e.g. Christaller, 1933; Carol, 1952). In addition, central-place studies can be basic research for regional planning. The studies in the state of Zurich may well have been the first consistent application of central-place theory to planning (Carol and Werner, 1949; Carol, 1951; *Direktion ...*, 1960).

In Ontario, geographers have carried out several studies on central functions and revealed complex hierarchical patterns in parts of the province (Spelt, 1955; Goheen, 1964; Thoman and Yeates, 1966; Ray, 1967; Marshall, 1969). However, an overall and up-to-date study of all levels of the hierarchy is still wanting. The present pilot study (Carol, 1966), carried out during the summer of 1966, is considered as preliminary pending a thorough investigation of the hierarchy of central places in Ontario. It proposes that the city's central functions should be the basic criterion for the delimitation of meaningful regions for planning and government.

2. THE LAKE ONTARIO ECONOMIC REGION: A CASE STUDY:

The nature of contemporary city-centred regions was explored in the area of the 'Lake Ontario Economic Region', as delimited by Camu, Weeks, and Sametz (1964), which was adopted as one of Ontario's ten economic regions. An answer was sought to the question: in which respect does this 'economic region' satisfy the criterion of functional unity, postulated by the writers? How, in reality, is this area functionally structured? Through fieldwork 194 persons located in 68 small rural and urban settlements were interviewed. The interviewees were asked to report the number of trips they had made in 1965 to the neighbouring cities (Oshawa, Peterborough, Belleville, and Kingston) and to the metropolitan centres of Ottawa and Toronto for the purpose of retail, recreation, and the use of professional services.

With a high degree of private mobility one would expect a rather diffuse trip pattern between neighbouring cities. Surprisingly enough the core of the tributary areas (defined as the area in which over 75 per cent of the trips are destined to one city) is very large and the transition zone between two core areas is, in a typical case, a matter of a few miles, as shown in Figures 1 and 2.

Two other aspects of the city-centred region were investigated: the decrease of trip-frequency with distance from the city and the difference in trip behaviour by different socio-economic groups. For the city region of Peterborough the

average number of trips in 1965 was 65 within the 10 mile zone, 24 within the 10 to 20 mile zone, 19 in the 20 to 30 mile zone and below 14 in the zone beyond 30 miles. Interviewees of the class 'below average income' made an average of 49 trips to cities of middle order, a value which diminished to 34 trips for the 'average income' group and to 19 for the 'above average income' group. These socio-economic groups had average numbers of trips to Toronto and Ottawa of 2, 5 and 8 respectively. The average number of trips of all interviewees to Toronto was 4.12 while for Ottawa it was only 0.14.

The Lake Ontario Economic Region is composed of two complete functional regions of middle order: the very large but thinly populated Peterborough region (146,000 people) and the smaller Belleville region (121,000 people). The southwestern part of the economic region belongs to the Oshawa region (127,000 people) and the southeastern part to the Kingston region (161,000 people). Thus the Lake Ontario Economic Region falls into the orbits of four centres of middle order; consequently, it does not possess the quality of a functional unit as proposed by the originators of the system of economic regions of Canada.

Similarly, this economic region does not possess any form of structural unity as postulated by its authors. According to the ARDA soil capability maps¹) the northern region on the Shield is considered almost exclusively as class 7 land, followed by the region of the limestone plains of class 6 land, followed on the till soils of the better agricultural lands in classes 1, 2 and 3. Related to the soil capability zones is the agricultural productivity of farms and the distribution of the rural population: very thin on class 7 and 6 land, with highest densities occurring on class 1, 2 and 3 land. A recreational capability evaluation would reveal a reversed ranking: highest in the lake-studded parts of the Shield and lowest in the fertile lands. The structural-resource-based regions, of a formal or uniform nature, stretch in an approximately east-west direction and of course do not end at the north-south boundaries of the economic region. In contrast, the city-based regions of a nodal or functional nature are closed units of an entirely different shape. Theoretically, and practically, structural-formal and functional-nodal regions cannot match (Carol, 1964). The conclusion of the survey shows no evidence that the economic regions are uniform in terms of structure (S), function (F), production (P), and marketing (M), as postulated. What then is the nature of the economic regions? They are, I believe, a more or less arbitrary grouping of several neighbouring counties. The number of economic regions is arbitrarily limited to a maximum of ten per province. These regions may have served their original function as devices for collecting analytical data, but there is little to indicate their suitability as development regions.

3. THE CITY-CENTRED FUNCTIONAL REGIONS OF SOUTHERN ONTARIO:

Of the whole hierarchy of central places, only the middle and high order centres appear suitable as nodes of possible planning regions. As a first step, the central place hierarchy was identified. The best available statistical data was that on total retail sales for cities and metropolitan areas. Highest (6th) order centres had retail sales of over one billion dollars (Toronto, Montreal, Buffalo, Detroit); high (5th) order centres had values between one billion and 100 million (Ottawa, Hamilton, London, Windsor); middle (4th) order centres had values between 100 and 20 million dollars. Into the latter category fall 24 cities of southern Ontario. Of these, 14 were assumed to qualify as centres of middle order planning regions. The others were omitted from consideration because they were situated close to other more suitable centres for development regions.

The second step consisted of delimiting the tributary areas of the 19 qualifying cities in southern Ontario. The city and its hinterland are interrelated through (1) the journey to work, (2) mass media, (3) governmental services, and (4) professional and medical services, shopping, and urban recreation. Attention

1) ARDA, Canada Land Inventory, *Soil Capability for Agriculture*, sheets Lake Simcoe 31D and Kingston 31C.

was directed to the last of these four groups, for, in contrast to the mass media, shopping and professional services create human contacts, socio-economic ties, and possibly a community of interest.

The best results in the identification of city-centred regions might be obtained through extensive interviews about the number and purposes of trips. This method was applied in a preliminary case study of the Oshawa-Kingston area. In the main study a less time-consuming questionnaire was used. Three hundred and forty-nine replies were received from mayors, reeves, town clerks and industrial spokesmen of 191 communities throughout southern Ontario. A test of the case study of the Oshawa-Kingston area showed that for the purpose of this pilot study the degree of accuracy was adequate. The results of the survey are shown in Figures 3 and 4 for the middle order level and in Figure 5 for the high order level. Toronto's highest order service area covers all of southern Ontario except the eastern, western and southern border areas, where Montreal, Detroit and Buffalo respectively are competing with Toronto. In its political jurisdiction, Toronto's service area is, of course, identical with the whole province of Ontario.

Road traffic is another indication of the functional interrelation between the city centre and its hinterland. This variable is shown in Figures 4 and 5 in the form of 'Annual Average Daily Traffic' (AADT) recorded for major roads by the Ontario Department of Highways. Figure 4 shows the 'middle traffic', leaving 'major traffic' flow above 5,000 AADT undifferentiated and omitting super highways. Figure 5 presents the 'major traffic', omitting highways below 1,500 AADT. When interpreting these flow maps, it must be remembered that the total is composed of such diverse constituents as (1) long distance traffic, (2) tourist traffic, (3) commuter traffic, and (4) 'central place' traffic. Central place traffic includes personal trips for shopping, professional services, urban recreation, etc. Since it is not feasible (although conceptually desirable) to separate the various categories of traffic, one should think in terms of the *regional component*, comprising central place and commuter traffic (rather than long distance and tourist traffic), when comparing traffic flow patterns within urban tributary areas.

Figures 4 and 5 reveal a striking relationship between two variables arrived at independently: traffic flow and the tributary areas of cities. As shown in Figure 4, the number of roads which lead to the middle order centres as well as the increase in traffic volume towards these cities emphasises their nodal character. The shape of the urban tributary areas is, in many instances, supported by the traffic pattern. The lowest traffic volumes between two cities frequently occur in the transitional zone between two functional core areas. Similar observations can be made from Figure 5. The metropolitan centres appear as the hub of radiating spokes and only one major traffic node (Kitchener) is not classified as a high order centre. Toronto's position as Ontario's highest order centre comes clearly to light as the hub of all major roads in southern Ontario. The close relationship between cities and their service areas, as evidenced by traffic patterns, reveals truly functional regions.

4. PROPOSALS FOR PLANNING REGIONS:

The city-centred regions with curvilinear boundaries were modified in order to fit an approximately congruous set of sharply delimited administrative regions. In the interest of continuity, these boundaries follow existing county and township boundaries. The result is presented in Figure 6. This functional regionalisation is proposed as a model for the delimitation of planning regions and administrative regions.

Two alternatives are suggested for discussion: either a triple hierarchy or a dual hierarchy of planning regions. The triple hierarchy would be composed of (1) the whole province of Ontario, (2) four high order regions, and (3) 19 middle order regions, as outlined in Figure 6. (Population statistics for the high and middle order regions are given in Table I, in the Appendix to this paper). This alternative is closely geared to the highly differentiated functional pattern which has evolved during the past two centuries. Within each middle order planning region a number of cities and towns, in addition to the main centres,

could be identified as potential growth poles. Apart from their significance for economic development, functional regions of the middle order might well qualify as the new framework for Ontario's proposed regional government. The community of interest of the city-centred region could overcome the century-old dichotomy in local administration of urban versus rural communities.

The second alternative would be much broader, assuming that the high order regions with metropolitan centres would form an adequate framework for planning. In southern Ontario four such regions have been delimited in Figure 6: an Eastern Region with Ottawa as its centre, a Central Region with Toronto as its core, a Western Region with London and the Niagara Region with Hamilton as major focal points. Northern Ontario would probably have two regions, focusing on Sudbury and Fort William-Port Arthur respectively. Within each of the planning regions a number of growth poles could be identified: those which already serve as middle order centres as well as other towns and cities with growth potential.

5. CONCLUSIONS:

Regional planning and regional government should be regarded as converging attempts to reshape Ontario's organisational pattern to the socio-economic needs and technological possibilities of the latter part of the twentieth century. Some have argued that in the future the spatial organisation of the cultural landscape may not follow the hierarchical principle of centrality. Consequently they argue, future-oriented planning regions ought not to tie in with the existing functional pattern as advocated in this paper. However, the cultural landscape is the result of a cumulative development process and therefore planning for the future can only bring about partial change. This is not to say that certain new forms of development, such as satellite cities, new lines of communications and new recreational developments should not be incorporated into the historically developed landscape. Various models of alternative futures should be studied in terms of their advantages and disadvantages: for example, the model of the *linear corridor*; the model of strong *metropolitan concentration*; the model of *dispersion*; and the model of *functional concentration* (as advocated in the present study). In any case, planning for the future must build on the existing cultural landscape as it has evolved over the generations.

ANALYTICAL DATA DERIVED
FROM PERSONAL INTERVIEWS
IN THE
CENTRAL LAKE
ONTARIO ECONOMIC REGION

FIGURES REPRESENT PERCENTAGE OF TRIPS
TO NEIGHBOURING CITIES (DERIVED FROM
AVERAGE NUMBERS OF TRIPS IN 1965,
AS REPORTED BY
3-5 INTERVIEWEES
IN EACH PLACE)

- ROUTES TAKEN AND
PLACES OF INTERVIEWS
- 56/44 56% OF THE TRIPS TO THE ONE AND
44% TO THE OTHER CITY
- 87/11/22 67% TO PETERBOROUGH, 11% TO
OSHAWA, 22% TO BELLEVILLE
- CORE OF TRIBUTARY AREA
(OVER 75% OF THE TRIPS
TO NEARBY CITY)
- 50% DIVIDING
LINE BETWEEN
NEIGHBOURING CITIES

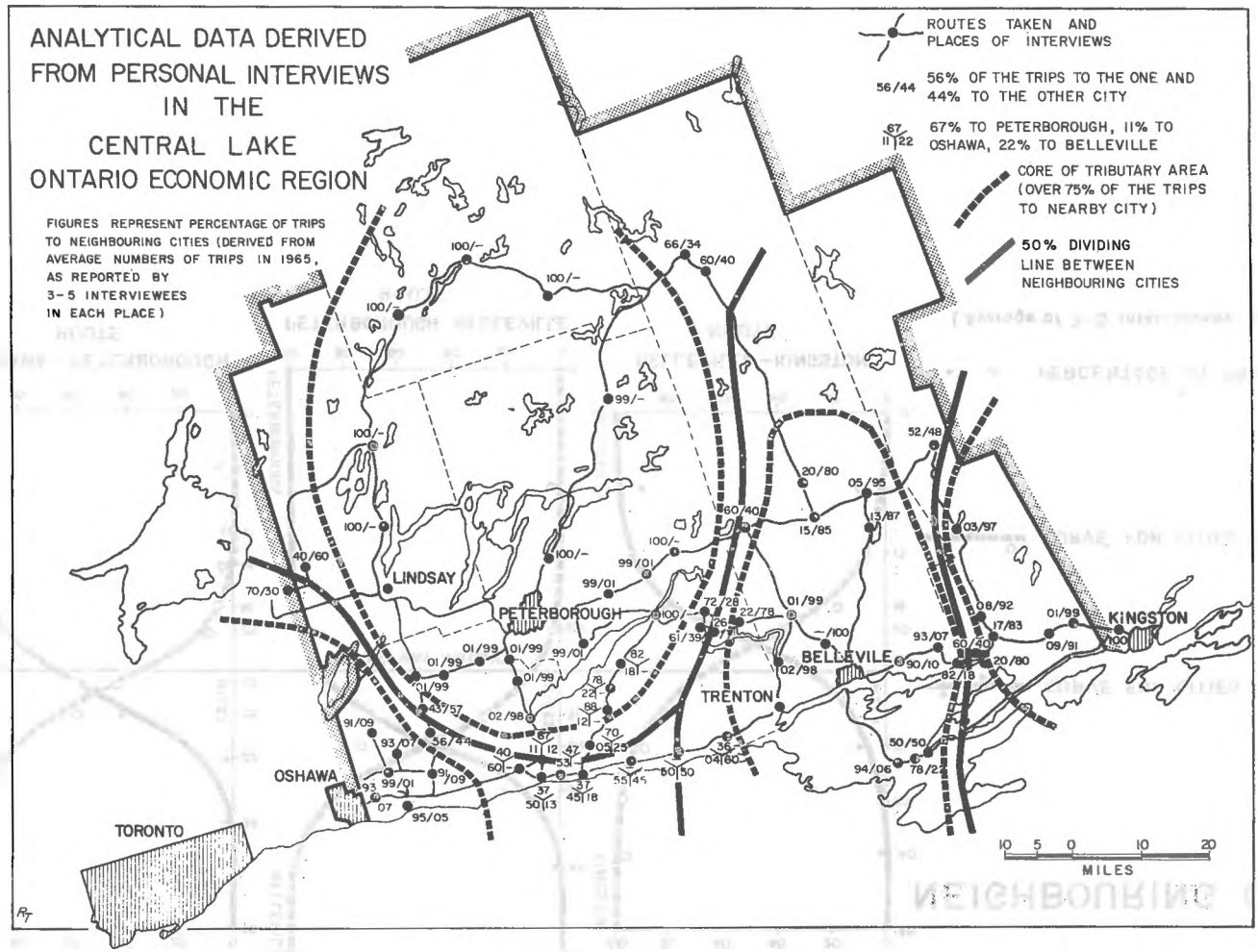
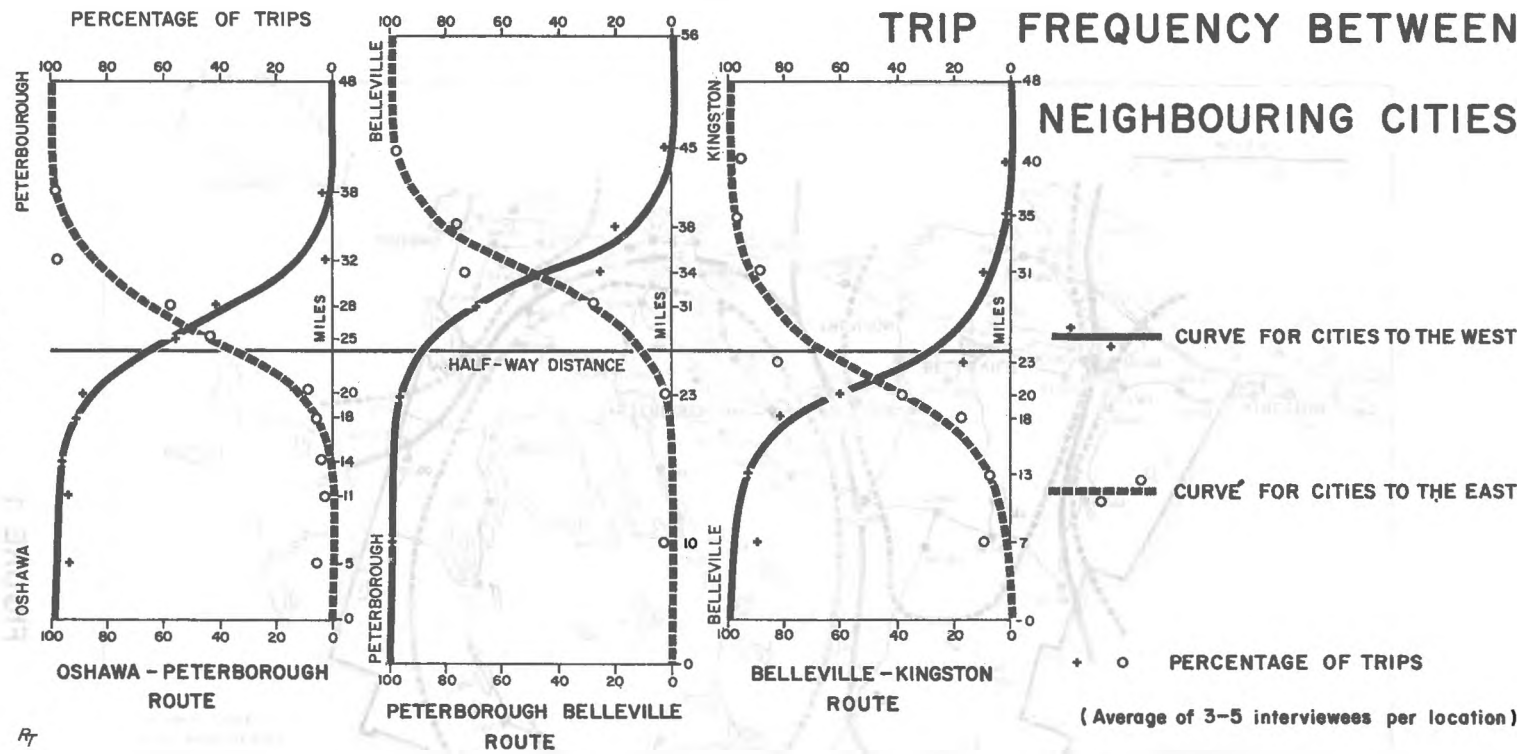


FIGURE 1




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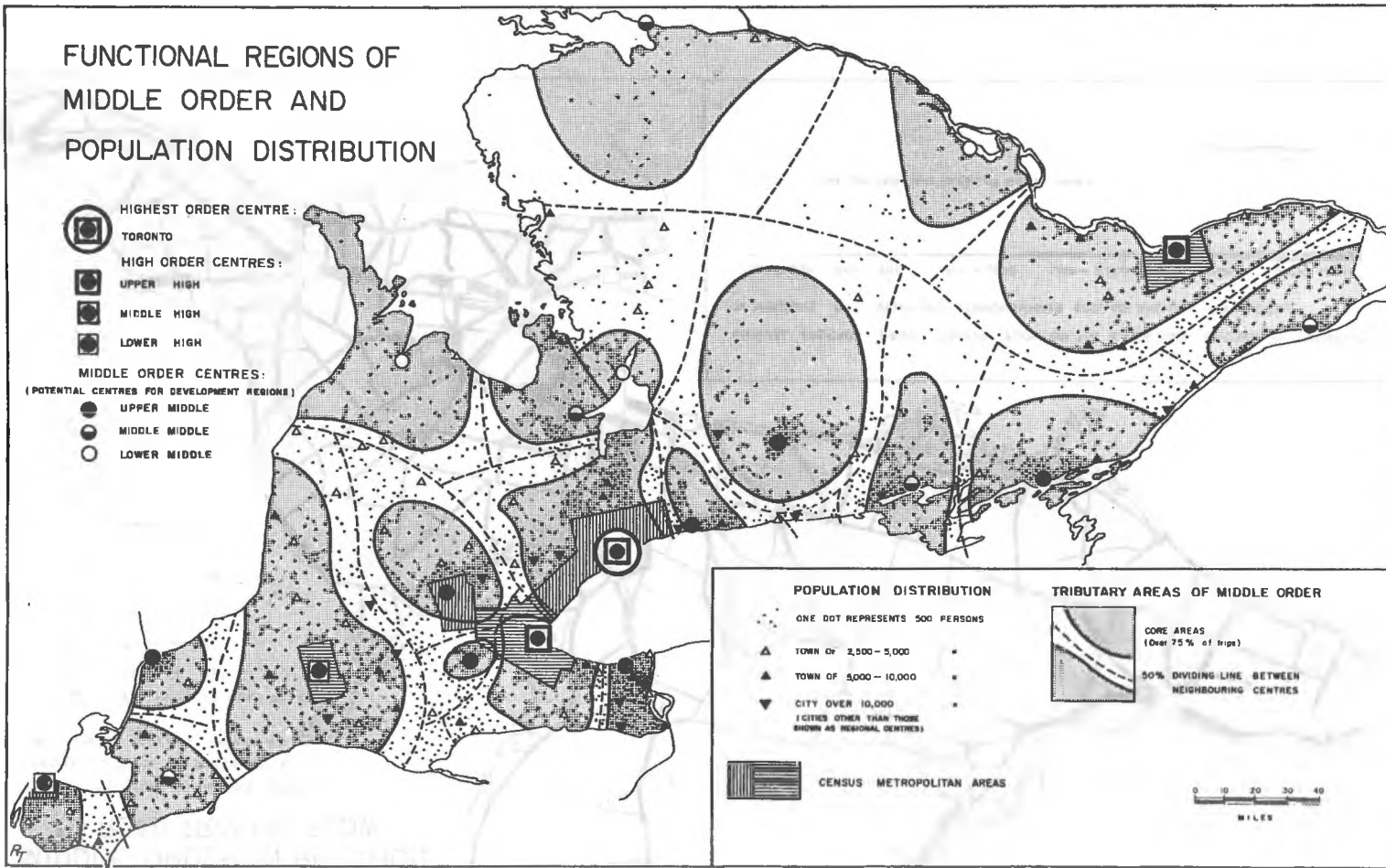
76

FIGURE 2







FUNCTIONAL REGIONS OF MIDDLE ORDER AND POPULATION DISTRIBUTION



-  HIGHEST ORDER CENTRE:
TORONTO
-  HIGH ORDER CENTRES:
UPPER HIGH
MIDDLE HIGH
LOWER HIGH
-  MIDDLE ORDER CENTRES:
(POTENTIAL CENTRES FOR DEVELOPMENT REGIONS)
UPPER MIDDLE
MIDDLE MIDDLE
LOWER MIDDLE




POPULATION DISTRIBUTION

-  ONE DOT REPRESENTS 500 PERSONS
-  TOWN OF 2,500 - 5,000
-  TOWN OF 5,000 - 10,000
-  CITY OVER 10,000
(CITIES OTHER THAN THOSE SHOWN AS REGIONAL CENTRES)

TRIBUTARY AREAS OF MIDDLE ORDER

-  CORE AREAS
(Over 75% of trips)
-  50% DIVIDING LINE BETWEEN NEIGHBOURING CENTRES

 CENSUS METROPOLITAN AREAS



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FIGURE 3

TRIBUTARY AREAS OF MIDDLE ORDER IN RELATION TO ROAD TRAFFIC FLOW

CITIES SERVING AS MIDDLE ORDER CENTRES; TOTAL RETAIL SALE IN MILLION OF DOLLARS SHOWN AS

Symbol	Total Retail Sale (Million of Dollars)
Small square	20
Medium-small square	38
Medium square	51
Medium-large square	101
Large square	201
Very large square	TORONTO 2,114

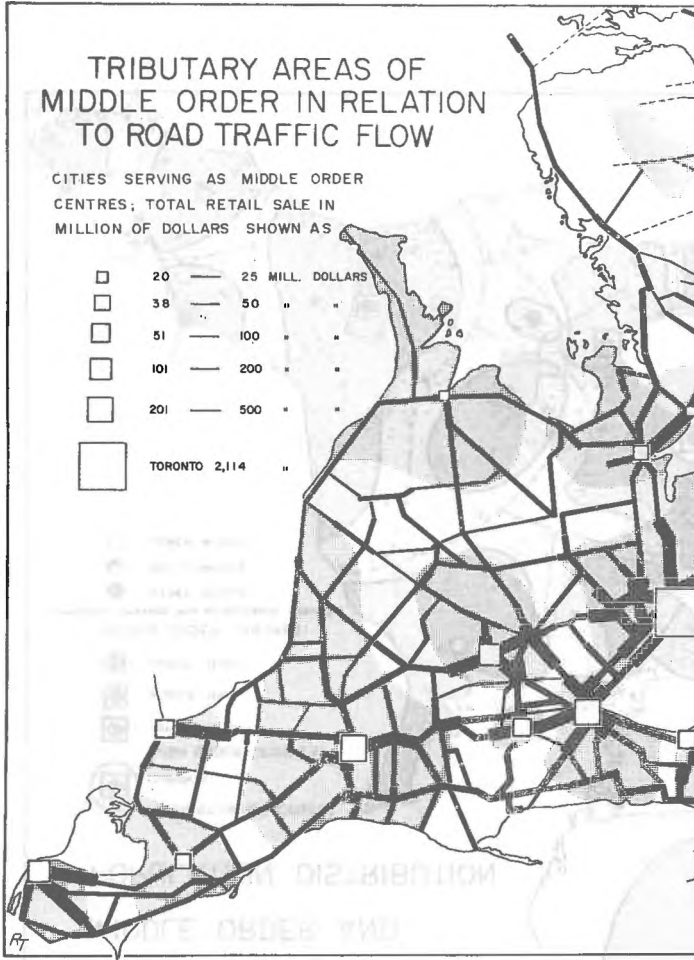


FIGURE 4
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ANNUAL AVERAGE DAILY TRAFFIC FLOW ON THE KINGS AND SECONDARY HIGHWAYS,
 IN NUMBERS OF VEHICLES (THROUGHWAYS 400, 401 AND Q.E. EXCLUDED)



 CORE OF TRIBUTARY AREAS OF MIDDLE ORDER



TRIBUTARY AREAS OF
HIGH ORDER IN RELATION TO
ROAD TRAFFIC FLOW

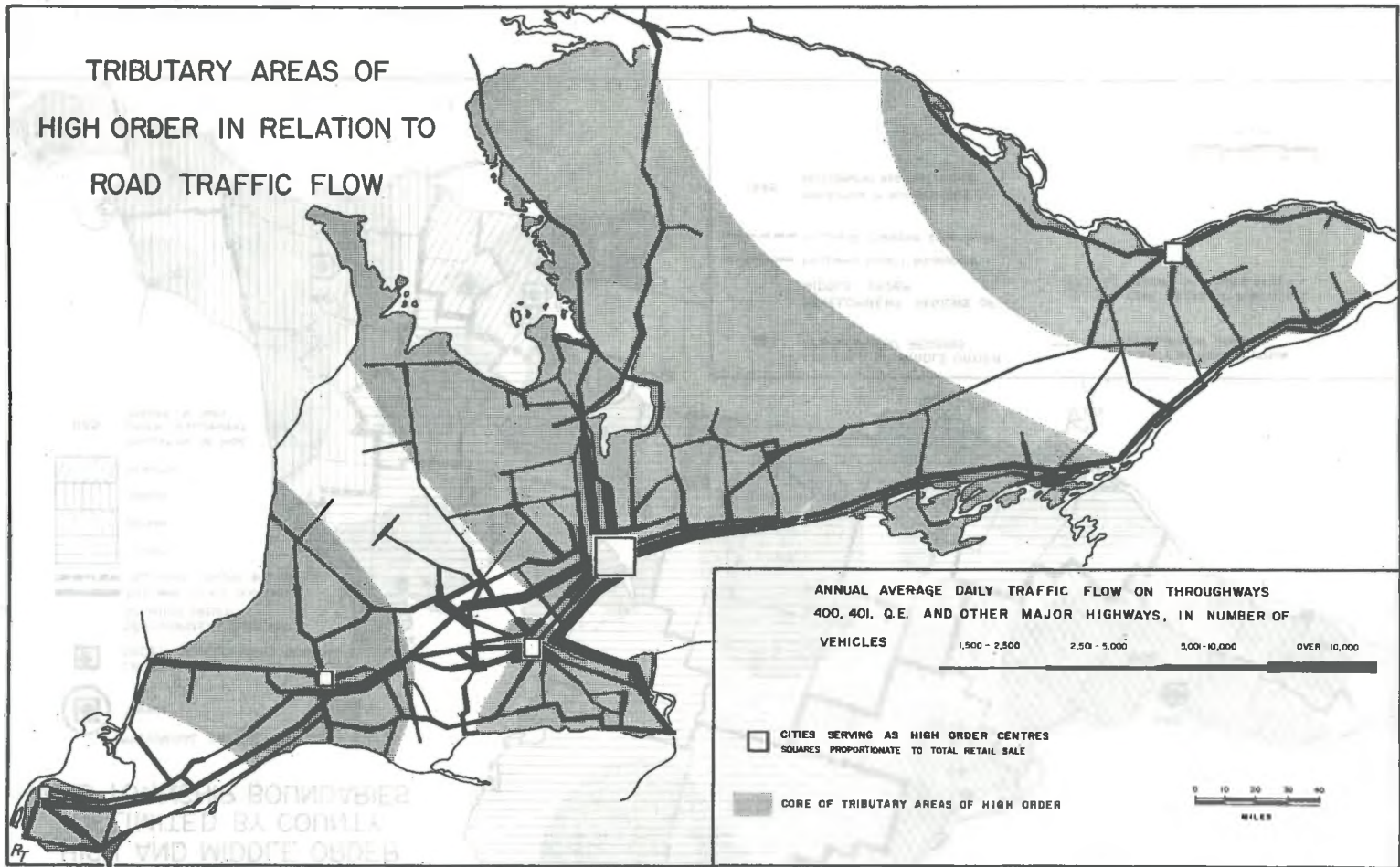
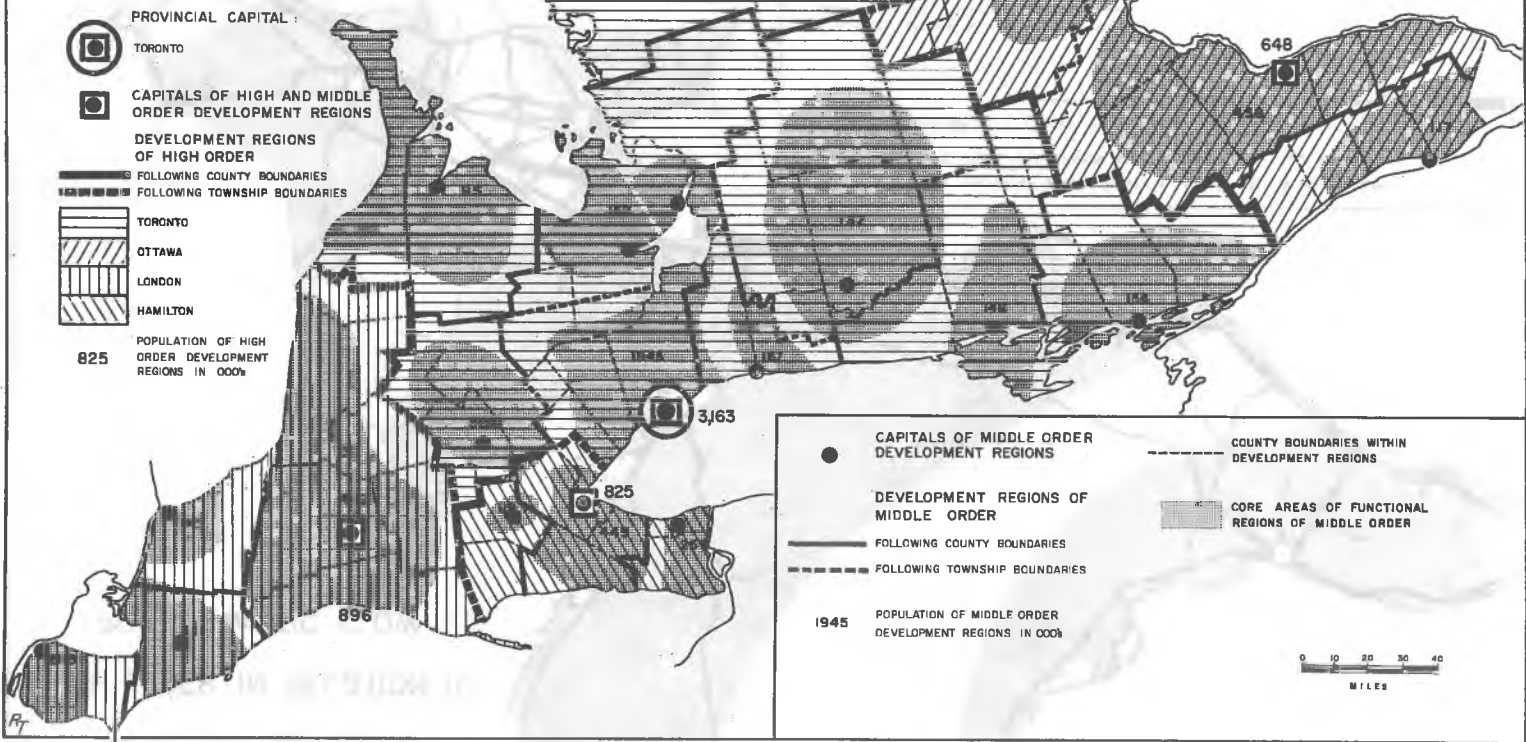


FIGURE 5

DEVELOPMENT REGIONS OF HIGH AND MIDDLE ORDER DELIMITED BY COUNTY AND TOWNSHIP BOUNDARIES



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 FIGURE 6

APPENDIXTABLE I

DEVELOPMENT REGIONS OF HIGH AND MIDDLE ORDER
FOR SOUTHERN ONTARIO

High Order	Population (000's)	Middle Order	Population (000's)		
TORONTO	3,163	Toronto	1,945		
		Kitchener	302		
		Owen Sound	95		
		Barrie/Orillia	162		
		*North Bay	58		
		Peterborough	132		
		Oshawa	167		
		Belleville	148		
		Kingston	154		
		LONDON	896	London	447
				Sarnia	102
Chatham	89				
Windsor	258				
HAMILTON	825	Hamilton	449		
		Brantford	119		
		St. Catharines	257		
OTTAWA	649	Ottawa	468		
		Pembroke	64		
		Cornwall	117		

* Only southern part of development region included.

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URBANISM AND THE BANTU - FOCUS ON TOWN PLANNING
AND DEVELOPMENT IN SOWETO

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The phenomenal growth of the Soweto residential complex¹⁾ during the past 16 years, together with the expected additional need for some 35,000 dwelling units with their related facilities and amenities during the next 12 years, has necessitated a reassessment of all development and planning proposals to date, and the formulation of a policy which can act as a basis for guiding, controlling or initiating all future development. The planning officials are now not only faced with the problems of controlling the location and intensity of land-use in Soweto arising from the demand for more space for almost every activity, but are also compelled to think even more broadly about the future of this complex and its role in, and its effects on, the Greater Johannesburg Area.

Before proceeding with a brief outline of the present situation in Soweto and some of the main factors that are contributing towards this need for a more scientific approach to the future planning and development in the area, I hasten to add that similar situations and factors have no doubt occurred, or are presently being generated, in the other large urban Bantu residential areas throughout the country, and therefore sincerely hope that this Paper will be of some value in a wider application.

1. THE PEOPLE OF SOWETO:

The growth and structure of the urban Bantu, as in the case of Soweto, presents an extremely challenging problem to the planning team for, basically, they are dealing with a resident society which is heterogeneous in its composition due to the cultural differences between the tribal groups and which is still very largely steeped in tribal beliefs, values and customs. Many of the people living in Soweto were born in a homeland or rural area and were conditioned largely by traditional behaviour. From a survey²⁾ recently conducted in Soweto it was found that 15% of the respondents were born in Johannesburg, although the average length of residence of all the respondents was 22 years. As Professor B. A. Pauw states³⁾, 'They are hence predominantly a people in transition from country to town. And they are a people whose traditional culture is being changed by the impact of industrialisation and modified by modern urban conditions'.

The aforementioned survey revealed that the people of Soweto have adopted much of Western culture, not only the material, but folkways as well. They practise monogamy; they have accepted Western marriage customs; practise Western burial customs and they belong to various Christian church groups. They are, in fact, highly involved in Western forms of behaviour, not only in the economic field, but also in their day-to-day living. However, the acceptance of Western norms has not meant the denial of traditional ways of life. Bantu customs are

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- 1) Soweto (South Western Native Townships) is a complex of 22 African residential townships serving Johannesburg - Ed.
 - 2) *Cultural Change in Soweto - An Urban Bantu Society*: Non-European Affairs Department, Johannesburg City Council, 1965. Johannesburg.
 - 3) Pauw, B.A. (1963): *Xhosa in Town - the Second Generation*: Oxford University Press, Cape Town.

practised side-by-side with those of the West, with a result that the emergent culture is neither Western nor traditional tribal culture.

The Bantu customs practised by the people of Soweto have been considerably changed from the so-called tribal traditional patterns, and the people have been selective in their choice of the customs they choose to practise. However, where a custom is fundamental to their very being, it retains its vitality and ways and means are found to overcome the difficulties inherent in the urban environment. For example, the ancestors are called up and a goat is slaughtered when a member of the family loses his job; a child becomes ill and beer is brewed and set aside for the ancestors; a ceremonial sacrifice to the ancestors is held because a member of the family has died; or the ancestors are given a thanksgiving ceremony because the family head has been given a bonus by his employer. It is expected that this emotional outlet will for a long time continue to take some traditional form. This assumption is based firstly on the fact that people, despite being born and bred in Johannesburg, still practise ancestral customs for comfort and security. Then, despite almost universal church membership, people are still turning to their ancestors in times of need - emotional or social.

A recent survey undertaken by the Johannesburg City Health Department in Soweto indicated that of the 300 to 500 goats and sheep purchased weekly by the residents from sites in and around Soweto, some 50% of the animals were for ceremonial purposes. The report states, in conclusion, that the planning and erection of hygienic goat stables within Soweto will probably tend to increase sales. Besides the normal problems associated with this type of activity within a predominantly residential complex, it is an essential element in slaughtering for ceremonial purposes that the animal be slaughtered on the property of the family concerned, and that the remains of the animal be burnt or buried on that same property. Hygienic and social problems can be expected if, or when, large-scale multi-storey development occurs within Bantu residential areas.

2. URBAN STABILISATION AND ATTITUDES TO URBAN LIFE:

The degree of stability of a resident society is an all important factor in town planning. An unstable population tends to pursue a negative attitude towards its present place of residence, harbours a sense of insecurity and frustration, and disrupts any possible advancement of community spirit and well-being within the society. To the planning team an unstable population presents innumerable problems arising from unsound projections representing population growth and structure, difficulty in controlling the intensity of the use of land, and the establishing of correct use zoning.

In Soweto the process of urban stabilisation has been assisted very largely by the policy governing the rental and purchase of houses by Bantu. In terms of this policy, no Bantu may qualify for a house unless such Bantu was born and has resided continuously in the prescribed area of Johannesburg since birth; or has been employed by one employer for 10 years or more; or has lived for a period exceeding 15 years in the prescribed area. The Soweto householder is, therefore, to a very large extent urbanised, even though he may still be orientated in many respects towards tribal ways and values.

In the first-mentioned survey an attempt was made to answer the following questions, namely: Are the Bantu completely wedded to urban living? Do they find satisfaction, other than economic satisfaction, in the urban area? Do they *want* to live and die in the urban townships? Results indicated that a high proportion - 62% of the people - stated that they were permanently settled, in the sense that they want to remain in Soweto for the rest of their lives. This was despite the fact that the proportion of the total population actually born in Johannesburg was small. In terms of the preference of the individual for city or rural life, analysed according to degree of tribal practise, reasons for choice, and whether or not the place of birth was Johannesburg, it was found that some 60% of the population could be classified as 'permanently stabilised'.

It is interesting to note the survey results about belief in Ethnic grouping in the residential areas. The majority of the people - 82.9% - did not see anything good in Ethnic grouping. This opinion was held by a cross-section of the community, and bore no direct relationship to the degree of tribal practice. Ethnic grouping was introduced in 1954¹⁾ to ensure the simplified and improved education of children in the home languages; to maintain tribal discipline; to assist the efficient functioning of Bantu authorities; to simplify municipal control; and to make for more harmonious living among the Bantu. To what extent Ethnic grouping would develop naturally among the Bantu residents, should a choice of housing in any of the townships be possible, is unknown.

3. POPULATION PROJECTIONS:

The population of Soweto is characterised by very high birth-rates, (between 38 and 42 live births per thousand), and steadily declining death rates (between 11 and 12 deaths per thousand). In addition, the sex/age composition of the population seems favourable to a high rate of Natural Increase, (the excess of births over deaths). There is, as yet, no evidence of a decline in the birth rate, and it is even possible that birth rates may rise as traditional contraceptive practices, (such as prolonged lactation), break down under urban conditions.

Projections of the Bantu population living in Soweto for the period 1967 - 1980 imply that the population will increase rapidly over the next 13 years from 370,508 in 1967 to 518,215 in 1980. The average annual rate of increase would be in the region of 2.4%, as compared with an estimated 2.1% for the White population.

4. PLANNING AND DEVELOPMENT IN SOWETO:

The south-western Areas of Johannesburg have witnessed the growth and development not only of a vast 'immigrant' population during the past 20 - 30 years, but also of a residential complex to 'city' proportions - a complex which numerically would be the 5th largest 'city' in the Republic²⁾. What then are some of the more important aspects of this overall development with which the planning team is confronted?

i) Housing:

(a) Stand sizes and densities:

The Department of Community Development has recommended³⁾ that, in the case of Bantu housing, the minimum stand requirements should be 2800 E.sq.ft. (40' x 70') for detached and semi-detached houses (4-roomed units), and 2400 E.sq.ft. for units in row houses (2-roomed units). In Soweto, however, approval has been granted for the erection of semi-detached units on stands measuring 2450 E.sq.ft. (35' x 70') in extent.

- 1) *The Planning of Residential Areas for Bantu in Urban Areas: Ethnic Grouping:* A circular issued to local authorities in South Africa by the Department of Native Affairs (now the Department of Bantu Administration and Development) on the 26th August 1954.
- 2) Soweto, from this point of view, is a 'city within a city'. However, as it is essentially a dormitory area with only some, rather than all, of the facets of social and economic life necessary for independent urban existence, it is a part of the city of Greater Johannesburg. - Ed.
- 3) *A Guide to the Planning of Non-European Townships:* Annexure 'A', Department of Community Development, Pretoria.

The NET density achieved with housing/dwelling units on stands 2800 E.sq.ft. in extent is 15.6 dwelling units per acre, (32.9 dwelling units per morgen); while on stands 2450 E.sq.ft. it is 17.8 dwelling units per acre (37.6 dwelling units per morgen) - i.e. approximately 100 persons per acre (\pm 210 persons per morgen). The GROSS density achieved in fully developed townships comprising either stands 2450 E.sq.ft. or 2800 E.sq.ft. in extent, or both, varies between seven and nine dwelling units per acre, (between 14 and 19 dwelling units per morgen).

Stands varying in area between 3000 E.sq.ft. and 5000 E.sq.ft. also exist within the various Soweto townships for 'self-builder' and 'owner-built' houses.

(b) Dwelling types:

A large variety of dwelling types exist in those townships developed prior to 1951. Since then housing schemes have consisted almost entirely of two types of dwelling units - namely, the 4-roomed detached house, (area 511 sq. ft.; Type NE.51/6); and the 4-roomed semi-detached house, (area 499 sq. ft.; Type NE.51/7). Of the total number of approximately 64,000 houses of all types built in Soweto up to 30th June, 1967, about 58% are of the NE.51/6 type and 18% of the NE.51/7 type.

During post-1951 years there has been an increased number of houses built for, and by, the 'upper-income' residents. These range from the 4-roomed detached house, (Area 579 sq. ft.; type NE.51/9), to the more modern and luxurious type of house with a present-day market value well in excess of R10,000. All these houses together represent between 4% and 5% of the total number of houses in Soweto.

During December 1967, local authorities were informed that in future *all* dwellings in the urban Bantu residential areas were to be made available on a letting basis only, and that in new housing schemes the right of occupation of dwellings may not be sold to Bantu. Local authorities may however, still erect houses of a better type for letting to professional Bantu.

Row housing has only recently been introduced into Soweto and has been built solely for sub-economic tenants. Dwelling units consist of 2 rooms only, i.e. living/sleeping room and a kitchen. In one township 188 such units have been built at a net density of 33 dwelling units per acre, (70 dwelling units per morgen); and in another, 208 units at a net density of 24 dwellings per acre, (50 dwelling units per morgen).

The only flats developed in Soweto to date are three 2-storey blocks, comprising 4 dwelling units each.

Hostels in Soweto accommodate some 14,500 men and nearly 300 women.

(c) Occupancy rate:

Persons who qualify for housing in Soweto, but because of the housing shortage are compelled to wait for a house, may obtain accommodation with persons already housed and then apply for a 'lodger's' permit. As a result of the large number of 'lodgers' residing within the townships, the resident occupancy rate per dwelling is well above that which could be expected if housing were readily available for all who qualified.

From Annual Surveys¹⁾ conducted in Soweto it has been established that the average family size is 5.3 persons, whereas the average household size is 6.0 persons.

1) Population and land use statistics as at the 30th June of every year compiled by the Research Section of the non-European Affairs Department, Johannesburg City Council, Johannesburg.

(d) Future housing and land requirements:

At present some 65,000 dwelling units have been erected in Soweto, in which nearly 380,000 persons are accommodated. As at the 30th April 1968, there were almost 11,000 persons on the 'waiting list' for houses, and over 19,000 persons awaiting accommodation in hostels. Based on the assumption that the Soweto population will increase by 2.4% per annum in the period up to 1980, and that there will be no material change in the family size of 5.3 persons, projections indicate that approximately 35,000 additional dwelling units will be required by 1980. If we are to continue planning at present development densities, then only a further 21,000 dwelling units with their related amenities and facilities can be accommodated on the remaining suitable vacant land in Soweto. Nearly 800 morgen of additional land will therefore be required to meet an expected shortfall of 14,000 dwelling units by 1980.

Due to the intensive development now occurring immediately outside the boundaries of Soweto, together with the fact that the presence of dolomitic ground extending from its western boundary prevents any possible future extension of the complex, the planner is now confronted with the problem of the availability of suitable land for future urban Bantu residential development.

A recent report¹⁾ suggested three possible solutions to this problem, namely:

- (i) multi-storey housing;
- (ii) extension of Soweto to the West; and
- (iii) creation of a new urban Bantu residential complex to the S.E. or N.W. of Johannesburg.

The implementation of (ii) above is undesirable from the point of view of inherent dangers of subsidence, and from discussions held with Government officials it does not appear as though (iii) above would receive favourable consideration now or at any time within the near future. The only alternative appears to be the intensified use of existing available land through the erection of high-density dwellings. The Government has likewise urged local authorities who are confronted with planning problems of this nature to investigate and proceed with the erection of high-density multi-storey dwellings. There are, however, a number of very definite 'obstacles' that have to be overcome before multi-storey housing can be considered on a large scale as a solution to, the diminishing area of remaining available land, and the ever-present problems associated with 'urban-sprawl'.

(e) Factors influencing the success or failure of multi-storey housing for the Bantu:

Watts states²⁾ 'In the present-day industrial economy in South Africa - as also throughout the rest of the African continent - large sections of the population comprising the lower income groups are completely unable, or only partially able, to pay for houses satisfactory by Western standards. It is thus absolutely essential that the housing planner and administrator, if they are not to produce serious social pathologies and dis-organisation, must take the socio-economic status and associated rent-paying ability of a population or section thereof into account, and must design and finance housing for various relevant cost levels'.

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- 1) *The Bantu Population and its Housing and Other Requirements: Forward Planning: Interim Report No. 4.* Johannesburg City Council, Johannesburg.
 - 2) Watts, H.L. (1960): 'The Assessment of Housing Needs': *National Building Research Institute Bulletin No. 23:* Council for Scientific and Industrial Research, Pretoria.

In determining the rent-paying ability of the Bantu in Soweto the basic principle used was 'rent plus the cost of transport to work for the head of the family should not exceed one-fifth of the total family income'¹⁾. Whereas the rentals imposed in recent housing schemes in Soweto amount to approximately R7-00 per month in the case of 4-roomed detached houses (Type NE.51/6), estimates recently calculated for three-storey flats incorporating the NE.51/9 type plan indicate that the rentals (flat plus site rentals) will be in excess of R16-00 per month. To this figure add the monthly transport costs of say R2-50 and this means that the family income should then be in excess of R93-00 per month if the above principle is to be maintained.

A report²⁾ during 1967 states that on the average there are 1.3 earners to a family in Soweto with an estimated average total income of R52-97 per month. A further report³⁾ quotes the average monthly income of families with one earner as being R40-75 and goes on to say, 'It is particularly disturbing that despite considerable gains in wages since 1962, there has been no change in the proportion of Bantu families (68%) receiving incomes short of their minimum expenditure'.

In any multi-storey housing scheme for Bantu in Soweto, it is essential that a high-degree of efficiency be attained in the following facilities provided within a multi-storey layout:

- (i) **Garaging:** From statistics mentioned later in this paper it appears that there will be an increasing demand for vehicle parking facilities. Where schemes are to be developed for the upper income groups it can be expected that 100% 'on-site' parking will have to be provided.

Due to the large scale vandalism and theft in the urban Bantu areas, and the possible distance of the resident vehicle owner from his flat to the parking area, provision must be made for lock-up garaging facilities or other acceptable means of security.

- (ii) **Coal storage:** The coal stove will remain the most popular cooking and heating device within the Bantu homes for many years to come as:
 - (a) The initial outlay and operation is inexpensive;
 - (b) it is used for the cooking of food and heating of water; and
 - (c) it provides warmth to the dwelling in cold weather.

For this reason separate coal bunkers will have to be provided for individual dwelling units and preferably at ground level for ease of bulk delivery.

Other facilities that demand careful consideration are:

- (iii) Coal ash and refuse disposal.
- (iv) Drying areas for household laundry.
- (v) Play space for children of all ages.
- (vi) Supervision of buildings and grounds.

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- 1) Freen, R.M. (1960): 'Low-cost Housing for South Africa' *National Building Research Institute Bulletin No. 20*: Council for Scientific and Industrial Research, Pretoria.
 - 2) *Minimum Family Budget: Average Bantu Family: Soweto, Johannesburg*: Report compiled by the Research Section, Non-European Affairs Department, Johannesburg City Council, 1967.
 - 3) *Income and Expenditure Patterns - urban Bantu Households: South Western Townships, Johannesburg*: Research Report No. 6, Bureau of Market Research, University of South Africa, Pretoria.

While multi-storey housing may appear to be an answer to the shortage of residential land, it can only be implemented on a large scale when those factors discussed above can easily be provided within the limits of the rent-paying ability of the urban Bantu. It is, therefore, clearly evident that, for the present, accommodation in flats is limited very largely to the upper income groups only. Yet, the major housing demand emanates from the lower and middle income groups. This points to the need for the increased subsidisation of rentals and cheaper building construction methods if such schemes are to succeed. Plans and estimates are presently being prepared for an experimental three-storey flat scheme in Soweto, from which it is hoped to gain valuable planning data for use in future schemes. Studies have also been completed into high-density row housing for all income groups in an estate-form of layout incorporating certain long-needed aesthetic features. A large number have been planned in one of the proposed new housing schemes in Soweto, and this again should provide useful information in regard to various functional aspects of high-density housing.

The Table below indicates the potential net densities that can be achieved in housing layouts where the following types of dwelling units are used and planned in terms of present Government recommendations.

TABLE I

POTENTIAL NET DENSITIES OF DWELLINGS PER ACRE

Dwelling Type	Net Density
NE.51/6 (Detached)	16 dwellings per acre
NE.51/7 (Semi- ")	18 dwellings per acre
NE.51/6 (Row house)	25 dwellings per acre
NE.51/7 (Row house)	25 dwellings per acre
Flats (3-storey)	31 dwellings per acre

ii) Business:

There are, at present, some 1550 developed trading sites in Soweto on which a variety of businesses are being conducted. These range from the more common General Dealer, Green Grocer, Butcher and Restaurant/Eating House to the Dry Cleaner and Tailor, Dairy, Hairdresser, Draper, Herbalist, Cobbler, Garage, etc.

The provision of trading sites in post-1951 townships has been determined on the basis of 'one shop of about 20 ft. frontage per 200 persons'¹⁾. Unfortunately, in Soweto, the use of this ratio has resulted in the occurrence of over-trading. Not only are many of the traders experiencing an uneconomical turnover, but most areas in Soweto zoned as Community Shopping Centres, on the basis of a separate planning ratio, are lying vacant with little hope of ever being developed.

Those owners conducting businesses closest to public amenities and facilities (such as Administration offices, schools, bus routes, railway stations, etc.) are well patronised, and by reason of their ability and fortunate circumstances have emerged from the general throng and are making comparatively good profits. A survey conducted in one of the larger townships revealed that many of the shops situated further away from the better patronised areas were deriving their business from less than 50 households and on a semi-permanent basis.

1) *A Guide to the Planning of non-European Townships: op. cit.*

From an analysis of the present trading structure in Soweto it has been found that shopping facilities in new townships should be provided on the basis of one shop per 500 persons. This ratio ensures that, besides all residents being within a quarter-mile walking distance of neighbourhood shops, the identity of the neighbourhood is now retained and traders are afforded an equal chance of success.

Planning and development is now well advanced in what is to be Soweto's 'city centre' at Jabulani. The Urban Bantu Council building, Post Office and Telephone Exchange building and Technical School have been completed, and the new Wholesale Market complex and large Police Station (with hostel facilities for the Bantu personnel) are under construction. Plans are also presently being finalised for a large 'multi-purpose' Hall and new Magistrate's Courts.

iii) Recreation:

One of the greatest demands made on land in Soweto, and indeed in most urban residential areas, is for outdoor recreational facilities. The Bantu, whether as a participator or spectator, is becoming increasingly 'recreation-conscious'. This is reflected in the fact that a full-time staff of 12 Whites and over 200 non-Whites are now engaged in developing and maintaining recreational facilities and organising a variety of activities in Soweto.

Below is a table of facilities provided in Soweto during the period 1948 - 1967, followed by interesting extracts from the last Annual Report of the Recreation and Community Services Branch in the non-European Affairs Department.

TABLE II
FACILITIES PROVIDED IN SOWETO, BY YEAR, 1948-1967

FACILITIES	1948	1956	1966	1967
Stadia	-	1	2	2
Sports fields	14	43	82	82
Basketball courts	10	27	71	71
Swimming pools	1	2	2	2
Concrete cycle tracks	-	-	2	2
Tennis courts	14	24	42	42
American basketball	9	2	4	4
Club houses	6	10	23	23
Recreation halls	-	-	4	4
Children's playgrounds	5	14	39	39
Skittle alleys	-	-	6	6
Dance arenas	-	-	4	4
Athletic tracks	-	3	3	3
Change rooms	-	-	11	11
Golf courses	-	-	2	2
Bowling greens	-	-	1	1

TABLE III

NUMBER OF TEAMS COMPETING IN SCHOOL LEAGUES, 1952-1967

SPORT	1952	1956	1960	1961	1962	1963	1964	1965	1966	1967
Football and Basketball	308	395	602	609	668	707	974	1078	*	*

* Including Meadowlands, Diepkloof and Alexandra

TABLE IV

NUMBER OF PERSONS USING SWIMMING POOLS

SWIMMING POOL	YEAR	No. OF PATRONS
Orlando Pool *	1965/1966	85,532
	1966/1967	85,858
Jabavu Pool	1965/1966	82,060
	1966/1967	74,127

* At Orlando Swimming Pool an additional 300 school children attended daily for swimming lessons.

Evening Clubs (Adults):

Facilities were provided at 23 evening clubs. The staff assisted and supervised these clubs which catered for boxing, wrestling, judo, weight-lifting and body-building.

A detailed study has been undertaken into the provision of recreation, park and playlot facilities on a neighbourhood and community basis, and it has appeared from this study that the recommended provision¹⁾ of 2.5 acres per 1,000 persons is sufficient if planned wisely and economically.

iv) Private and Public Transport:

The number of vehicles owned by the Bantu residents of Soweto increases each year at a remarkable rate. Recent statistics reveal that there are over 13,000 privately-owned motor vehicles now in Soweto. Should the present rate of increase be maintained - approximately 15% per annum - it can be expected that well over 60,000 vehicles will be owned in the Soweto complex by 1980. This may, in fact, be underestimated for the following reasons:

1) *A Guide to the Planning of non-European Townships: op. cit.*

- (a) Many motor vehicles are purchased by families who can ill-afford to do so, and therefore the number of cars purchased in relation to family wage structure and wage increases does not provide a reliable base for projection purposes;
- (b) small second-hand cars are now becoming increasingly popular among the Bantu as a smaller initial capital outlay is required, and running costs are lower compared with the larger and more popular models; and
- (c) car ownership within a socially and economically developing society has the effect of 'snowballing'.

Although Soweto is fortunate in having an internal main road system capable of accommodating a large increase in traffic, and a double-carriage highway linking Soweto with the Johannesburg Central Area is under construction, the planning team is, nevertheless, having to take greater cognisance of the future possible effects of a 'motorised' population within the complex.

Due to inadequate rail and bus transport facilities between Soweto and the Johannesburg Central Area, the number of Bantu-owned taxies is also rising phenomenally, and an increasing number of applications are received each year by the Local Transportation Board for Bantu taxi licences.

During October 1967, 155,200 passengers were being carried each day by the Railways from the Bantu Areas to Johannesburg during the peak period 4 a.m. to 8 a.m. Studies reveal that by 1980 nearly 250,000 persons will require transportation from the Bantu Areas, and the possibility of providing an alternative transportation system to relieve this problem is presently being discussed.

5. CONCLUSION:

If we are to succeed in our planning of urban residential areas for the Bantu people, it is essential that we provide for them a physical environment which satisfies their emotional and material needs. In order to achieve this, it is necessary that we equip ourselves with a thorough knowledge of their social and economic environment and their inter-relationships.

In the words of Dr. Thomas Adams:

'A home is not a detached unit but a part of a neighbourhood, which in turn is part of a town; and the good quality of the home usually depends at least as much on its surroundings as on its design and construction. Hence the vital importance of ground planning and control of the development of neighbourhoods'.

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THE CITY AS A SOCIAL AND PHYSICAL ENVIRONMENT:
THE NEED FOR PLANNING RESEARCH

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That cities are for people is a point that is so obvious it is often ignored. This state of affairs has arisen not through intent but rather from the way we have grown to look at our urban environment. The tendency has been to look at things, or the physical paraphernalia that surround man, rather than attempt to understand man as he exists within the urban or built environment. As individuals living in cities we have come to believe that we possess inherent *a priori* knowledge of the city: as planners, this belief is reflected in our providing what we think people want and not necessarily what they actually want. Associated with this is the natural tendency for people with a particular training and background to interpret and explain urban phenomena solely in terms of their own particular training. Thus expertise in one discipline or field is assumed to provide the techniques for dealing with problems in another. The basic problem is therefore to decide on how we can best approach the study of the city which paradoxically is so familiar yet so little understood.

I should like to mention briefly two problems at this stage that are relevant to the discussion in that they influence our understanding of the city.

Firstly, we have all been confronted at some time or other with the following or similar, seemingly incompatible statements or ideas about the city. We feel that we must side with one or other viewpoint, and which one is selected will depend on our particular predilections.

'We don't come to the city to be alone, and the test of a city is the ease with which you can see and talk to other people'¹).

'... the word *neighbourhood* causes a slight feeling of uneasiness in many people who are drawn to the city by the very opposite of neighbourliness - freedom from the curiosity and gossip of the neighbours and the right to remain anonymous'²).

The dilemma which is supposedly embodied in these statements is largely due to a desire on our part for clarity in the sense that something must either be right or wrong, it cannot be and not be at the same time. However, where the fallacy in this type of reasoning lies is that each of the statements proffered is in part right and in part wrong. The dilemma results from the fact that the issue is a fairly confused one, that statements of this nature are just incomplete or nebulous and not mutually exclusive. The confusion is often heightened by a prevalent feeling on the part of opponents that if something else can be said for one case then not enough has been said for the other.

In reality, therefore, we find a considerable amount of time and effort being expended on arguments about 'non-problems' and the acrimonious discussions which often ensue.

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- 1) Behan, B. (1964): *Brendan Behan's New York*, Bernard Geis Associates, New York.
 - 2) Schneider, W. (1963): *Babylon is everywhere: (The City as Man's Fate)*: Hodder and Stoughton Ltd., London.

This sort of muddled thinking, which underlies a good deal of thought concerning cities, is summed up by Ryle as follows:

'Sometimes thinkers are at loggerheads with one another, not because their propositions do conflict, but because their authors fancy that they conflict'1).

The second problem concerning our understanding of the city is highlighted when one attempts to define or describe it. The Oxford English Dictionary defines it thus: 'A title ranking above that of a town'. For our purposes this definition is of as much use to the study of cities as that of Brendan Behan:

'A city is a place where you are least likely to get a bite from a wild sheep ...'.

Emrys Jones states the problem as follows:

'... the city defies a universal definition which would be acceptable to everyone. Is it a physical conglomeration of streets and houses, or is it a centre of exchange and commerce? Has it a certain size, a specific density? The difficulties involved in definition are countless and there is very little unanimity: it seems to be all things to all men'2).

Attempts to settle on what could be considered an adequate description or definition are largely thwarted by the inadequacy of our knowledge concerning the city. We do not know enough to delimit our field of study. Thus whilst it is often convenient to categorise cities in terms of size or number of inhabitants say for census purposes, this should not be confused with what has meaning in terms of a city environment. That is, what is suitable for one purpose may not be suitable for another. Failure to understand this may lead to the overshadowing of the richness, vitality and humanity of cities by academic niceties concerning size, densities, and the like. As a mnemonic for simple comparisons these quantitative data are useful but in themselves they are not going to help us understand the city. Problems such as these have arisen through our realisation of the complexity of the city on the one hand, yet our inability to cope with it as an entity, on the other. We have been dealing with fragmented knowledge, with the parts in isolation, considered out of context, in an attempt to simplify the problem. We have become engrossed in lengthy debate concerning incomplete, nebulous statements and propositions. We have largely relied on tools borrowed from other technologies to do the job, without realising their limitations and adapting them or creating better tools for the particular city function being studied.

The planning standpoint has been that of considering cities as a mere special congeries of objects, values, traits, etc., that are united by fortuitous spatial adjacency. Although the majority of responsible planners will vehemently deny being associated with this standpoint, nevertheless it is, I feel, the way in which the city and its problems have, if not conceptually, then practically been tackled to date. Burns, in developing his new theory of shopping patterns, illustrates the problem by reference to the neighbourhood unit concept.

'The neighbourhood unit started life as a residential area of sufficient size to justify a primary school, or a multiple of this size. It was then argued by the exponents of this system that, in fact, a neighbourhood based on school provision satisfied many other social needs and in particular for our present analysis that it was convenient for planning shopping'3).

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- 1) Ryle, G. (1966): *Dilemmas*: (The Tarner Lectures, 1953). Cambridge University Press, Cambridge.
 - 2) Jones, E. (1966): *Towns and Cities*: Opus 13: Oxford paperbacks University Series, Oxford University Press, London.
 - 3) Burns, W. (1959): *British Shopping Centres*: (New trends in layout and distribution): First edition, Leonard Hill (Books) Ltd., London.

In similar vein, Langdon writes:

'Hardly a month passes now without the journals and newspapers presenting the design elevations of more or less imposing "cultural centres". One for the South Bank, one for Covent Garden maybe, one for Glasgow, and so on, down to quite modestly sized centres of population, so that eventually no self-respecting town need consider itself complete without a centre for the arts, ...'

'But, one may ask, why cultural *centres*? Of course we need shopping centres because people drop into many different shops or go window shopping so it is a convenience to have many close together. But do they want to visit a bit of a play, then drop into a chamber concert, or go window shopping among the range of art and entertainment offered them¹).

Planning concepts based on this type of confused thinking and which are conveniently found to offer the solution to a good many urban planning and other social problems should be held suspect.

The realisation that the city is not merely a spatial congeries is gradually being accepted. In many instances urban renewal programmes have not been unqualified successes and this has largely been attributed to the realisation that 'U.R. is real estate-oriented instead of people-oriented; that it treats the symptoms of urban decay - the buildings - but fails to get to the roots of the problem²).

This is again reiterated in the proceedings of a Study on Science and Urban Development.

'Our woes, they concluded, have resulted quite largely from our frequent indifference to the interactions between the many systems in the machinery that makes the city tick. We have tinkered with this, that, and the other thing under the hood without knowing what each one could or should do to make the engine run smoothly. What really must be done has not been demonstrated yet³).

A prerequisite to understanding or demonstrating what must be done is to accept the complexity of the city and not try to avoid the issues involved by hedging and skirting around the problems. It is just this complexity that is the challenge, which must be faced if we are to understand the city. If the city has any meaning or value to us we cannot afford to accept glib answers to our questions nor the luxury of complacency concerning its well-being.

The city is and must be considered as an integrated whole, where no essential part is incidental but is functionally connected with the whole.

At the Toronto Conference in 1967 on Metropolitan Problems, a delegate from Hanover is reported to have stated the problem as follows:

'The crisis is not in the city but in the capacity for man to understand the problem'.

Here the problem is taken to be the understanding of the city as an integrated, functionally connected whole. Thus in order to dispel any misconception as to what is meant in this paper by considering the city as a social and physical

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- 1) Langdon, F.J. (1967): 'The Social and Physical Environment: A Social Scientist's View': *Current Papers Design Series 61*, Building Research Station, Garston, Watford, Herts.'
 - 2) Christie, G.A. (1967): 'The Scope of Future Work: (The Future of Construction)', *Architectural Record*: Vol. 141, No. 5, May.
 - 3) Torrey, V. (1967): *Science and the City*: U. S. Government Printing Office, Washington, D.C.

environment, it should not be inferred that a duality exists between the social and physical. That is, the city does not comprise people on the one hand and buildings etc. on the other, taken and regarded separately. It must be regarded as a combination of these, their relationships and the interaction between the parts. Planning is considered here as an attempt to direct the interaction between man and his environment. Therefore, in order to plan or direct we must understand the interaction as a totality. We must have adequate information of such a nature as to provide a sound basis for making decisions as to what action must be taken.

Decisions and action in dealing with the city are inseparable because the problem is a 'live' one, in the sense that the city is not static: it grows in time and time brings change. The new is created and the old decays. The process entails changes in structure, movement patterns, activity centres, and modes and ways of life. The scale of change also increases. More and more people are living in cities and as Beinart points out:

'Today Johannesburg, a relatively large city, is one of about 115 cities with a population of over a million: by the end of the century there may be over three thousand such cities. And Johannesburg will be less of a city of a couple of million than one part of a virtually completely urbanised metropolitan area which may contain anything between five and ten million people'¹).

Functional differentiation both within and in relation to other cities and regions increases - thus problems multiply. The simple approach based on convenient rule of thumb methods or technologically-biased expedience towards physical, inanimate and fixed concepts cannot adequately provide the basis for organising the dynamic functional inter-relationships of the city. These essentially 'live' issues which are influenced by the passage of time and concomitant changes in living habits, living patterns, even social aspirations and the like can only partially be explained through our knowledge of the past and even less by our private knowledge or experience. It is therefore apparent that we must attempt to formulate a systematic approach to the study of cities; one that will provide insight and understanding of the processes, so that a sound framework for man's continued physical, intellectual and spiritual development may be created.

We have made and are making dynamic strides in the advancement of the physical sciences and technology, yet we are by comparison abysmally ignorant of how our cities function *vis-a-vis* the human sciences.

In our technologically advanced society the questions concerning 'know-how' must become secondary to the social 'know-why' and 'know-what' questions, which must assume primary importance in our search for insight and understanding of society and the city.

This is clearly illustrated when one considers the large housing estates now being developed overseas. Technically there are few insuperable problems related to the construction of dwelling units, single or multi-level, roads, bridges or central heating plants for entire towns of 60,000 inhabitants and more. The problems lie in ensuring that what is built is in fact what is needed, and that it is not something that will impose additional stress on society by aggravating existing social problems or creating new ones.

Overseas experience has indicated the usefulness of industrialised building techniques to meet the increased demand for various types of buildings, particularly housing. Technological advancement such as this has enabled the more developed countries to come to grips with a basic problem of providing sufficient shelter. But what is often not fully realised is that the scale of operation has changed. What in the past may have taken fifty to a hundred years to achieve may in relative terms seem to take place 'overnight'. This change in scale, both

1) Beinart, J. (1967): 'Cities - Planning and Transportation in the Near Future', *Property and Building*: Vol. 15, No. 6, December.

in time and size, is metaphorically speaking the whip that drives us on.

The complexity and intensity of activities found in cities is increasing. This is typified for example by the ever-pressing traffic problems that necessitate careful study not only of the physical properties of vehicular movement, parking, noise and pollution, but also the human criteria as to what is desirable or acceptable. Urban society is so dense and its structure so intricate that any malfunction in its structure will exert its influence either directly or indirectly at some other point.

There is therefore little doubt concerning the importance of the role to be played by social scientists whether they be sociologists, psychologists, economists, geographers, or administrators; each is responsible for providing basic information so that what is eventually expressed and given physical dimension by the planner will be functionally and socially viable. Failing this, planners cannot be condemned for planning cities that are unrelated to the lives of the people and fail to meet the needs of their fellow men and women.

However, the onus does not rest solely on the social scientist. There is no point in providing information of such a nature if the means of reception are faulty or inadequate - in much the same way as there is no point in using F.M. transmitters if there are no F.M. receivers. Thus, if what is being asked of the social scientist is to have any meaning, then planners should possess a keen and highly attuned sensitivity, or attitude, or frame of mind, or whatever else one might choose to call it, which will allow this information to be assimilated and subsequently given expression in a form that takes cognizance of the subtle tones and nuances of urban life. The function of the social scientist, in relation to city planning, is seen as that of interpreter. His overall task is to understand man's needs, ascertain his requirements, establish socially viable design-criteria and to devise methods of obtaining information. This information must then be analysed and presented in suitable form to those whose responsibility it is to transfer these findings into the physical plan or design. In essence, this interpretation must therefore, be intelligible and transposable into physical measurable form.

Any research undertaken into the functioning of cities must recognise the essential wholeness of the problem as well as the changing nature of its parts over time. In attempting to achieve this I think one must clear up what, to my mind, is a basic dichotomy often encountered when considering research aims - I refer here to the distinction made between practical aims and theoretical aims. This distinction is not only fallacious, but can be dangerous as when it is linked synonymously with positive ends and negative ends. It stems from the idea that research activities directed to practical solutions are useful whilst research activities that tend to the theoretical are, if not useless, then non-productive. In everyday life the 'practical man' might express this as follows: 'What we need are solid, concrete, down-to-earth, practical solutions and not hare-brained, "airy-fairy" theories.'

In planning, this attitude is encountered or insinuated in what could be termed 'deductive' and 'Utopian planning'¹⁾. Deductive planning has largely been concerned with physical things that are controlled or regulated by a fixed master plan, and are considered separately and out of social context. Utopian planning realises that this is inadequate and in attempting to correct the deficiencies of the 'deductive' approach, over-compensates by supplanting it with ideas or 'theories' concerning an 'ideal' or 'idealised' state, which are similarly unrelated to prevailing social realities.

Neither approach relates to the real world. The first provides solutions to 'non-problems', the second to a personalised abstraction of 'non-problems'; thus both are, for our purposes, equally useless.

1) Muller, J. (1967): 'The Urban System': *South African Architectural Record*: Vol. 52, No. 9, September.

However, theories have an essential function in the research process, and if one is to undertake planning research related to our cities, these theories must embrace the physical and social realities as interacting unities. In this context, theory is taken to mean general statements about the real world, where the real world is taken to include concrete objects, together with mental constructs. Thus theory is not to be erroneously equated with speculations, conjecture, guesses or Utopian dreams and the like. The inherently useful nature of theory as it pertains to scientific method, makes it an essential tool for achieving and understanding urban systems and urban processes.

Although there exist a great many variable conditions and relationships in urban studies, which may make the formulation of theories difficult, this fact should nevertheless not deter us from the pursuance of our goals.

As the approach to the problems of cities has largely been oriented towards remedial solutions, generally on a piecemeal basis, there is a basic lack of theories concerning the city's nature. Those that have been formulated are often found to be extremely limited in application as they are shrouded in restrictive conditions and assumptions. Nevertheless, they do provide a useful starting point on which to base further research. By adopting these and the systematic application of scientific method to our investigations they will, I feel, provide the means through which a significant contribution to the field of city planning, can be made.

In this respect it is quite legitimate to borrow concepts from other fields of study: for example that of *general systems theory*. According to Ryle, 'There is no other way to start'. His explanation of the process is as follows:

'We learn the powers of a borrowed tool side by side with learning its limitations, and we find out the properties of the material as well when we find out how and why it is effectual. In the end we design the tool for the material - in the end but never in the beginning. In the beginning we still have to find out the first things about the ways in which the material is and is not workable; and we explore it by trying our implements with which we have already learned to work other materials'1).

This in essence is a very good description of scientific method. Thus, provided we constantly bear in mind the fact that it is a 'borrowed tool' we are using and as such it has limitations, we will be able to modify it or create new tools through our experience, which will function better in terms of our particular needs.

Because we are interested in gaining insight into the real problems, our data must be derived from, and hence pertain to, the real world. Research should therefore be based on empirical studies directed towards understanding man's functions and the interaction between these and his environment.

Studies undertaken by the Architectural Division of the National Building Research Institute have, wherever possible, attempted to achieve this. Admittedly the research process often entails extreme frustrations and long time delays from the initiation of a project to the acceptance of its findings and their eventual application in practice. This was the case in the work carried out on the housing of aged people. It was started in 1958, and after a great deal of research and experimentation 'A Guide to Special Housing for Aged People'²⁾ was compiled and published in 1967. However, in the case of the study concerning the future Provincial hospital building requirements for the White population of

1) Ryle, G. (1966): *op. cit.*

2) National Building Research Institute (1967): *A Guide to Special Housing for Aged People*: C.S.I.R. Research Report 245 (National Building Research Institute Bulletin 43), Council for Scientific and Industrial Research, Pretoria, 54 p.

Pretoria and its region, this took only approximately three months¹⁾. Because we are, in research, dealing with uncharted territory the time required for a study is largely determined by the nature of the study itself. Thus without prior knowledge, or experience of what to expect, or what is precisely required, or what information is available, or even where it can be found, it is extremely difficult to determine precisely how long a research project will take. In general, research on the basis of empirical studies often entails a protracted period. Because of this and concomitant financial considerations research should not only be directed to major problem areas but should be 'streamlined'. I think this streamlining can largely be achieved by asking the right questions. In itself this will not provide the panacea to all city ills but it will avoid the employment of 'Procrustean' methods. In addition it has the advantage of avoiding the wasteful expenditure of our limited manpower on examining 'non-problems'.

Thus, in dealing with the hospital plan for Pretoria, our approach was essentially that of attempting to answer the following three questions:

What hospital facilities should be provided?

Where should they be located?

When should they be built?

We felt that by answering these questions we would then be able to provide the essential background information on which the authorities could base their decisions as to the building programme that should be adopted, so as to ensure the provision of the right hospital facilities in the right place and at the right time.

Information of this type, which provides the basis for making these three decisions, is fundamental to all planning activities.

The co-ordination of the relevant information pertaining to the parts, and in turn to the larger system to form a synoptic view of the city's functions, is an additional and vital planning function.

Once this is achieved, then only can demonstrably justifiable planning controls, which are essential in the organisation of vast city complexes, be employed. Their justifiability will rest in their pertinence to reality, as they will be intimately related to the whole and not only to isolated aspects or parts which tend in fact, to be less realistic than the comprehensive approach.

As a good deal of research necessary to achieve insight into urban processes will be carried out by a variety of individuals, university departments, state and semi-state organisations and local authorities, all with a particular interest in examining and studying aspects of the problem, one needs what could be called a 'Research Register'. The purpose of this would be to provide a record of past and current research work undertaken locally so as to avoid excessive fragmentation or needless repetition. It could also fulfil the important function of providing the basis for collaboration and constructive participation of the many disciplines interested and engaged in the study of urban life.

The views expressed in this paper have largely been confined to the need for understanding the city's internal functional relationships. There are, however, other equally important relationships to be explored and understood. For example, the significance of the city function in regard to functional relationships with other cities, their sphere of influence in the regional setting, and conversely in the way the region influences the city, and possibly an even wider context - the functional importance of cities within the framework of the national economic development.

1) National Building Research Institute (1968): *Hospital Plan for Pretoria*: C.S.I.R. Contract Report C/BOU 369, Council for Scientific and Industrial Research, Pretoria.

Thus whilst it is convenient to confine or focus one's attention on cities it may be more meaningful to consider urbanisation, of which cities are obviously a part, as a spectrum, with rural communities at the one end and the vast urban conurbations at the other. 'Between are all degrees of urbanisation, ...'¹⁾. It is this that is significant in our studies of contemporary urban life.

This paper has attempted to show that there is a need for relevant, co-ordinated and comprehensive planning research to be undertaken in the field of urban studies, so as to ensure as complete an understanding as possible of the city's individual components, together with their grouping in systems; and that theory is an extremely practical tool and forms an essential part of scientific method.

As we are dealing with 'live' issues, subject to changes over time, our information must be derived from empirical studies. The ever-increasing magnitude of the problems associated with continued urbanisation indicates the need to use our limited manpower resources efficiently. Excessive fragmentation and duplication of research effort is wasteful and may be avoided through the creation of a research register. This would form the basis for co-operation and possibly, co-ordination of research work undertaken by various bodies.

In essence we are striving to gain insight and understanding of city functions. Whilst we are technologically able to build and control the built-environment - that is, we possess the 'know-how' - our knowledge concerning the 'know-what', 'know-where' and 'know-when' questions is severely limited.

The close collaboration of the social scientist and the planner is basic if we are to achieve the essential synoptic view of the city and its processes. Through this we will ensure that what is given physical form is in fact socially significant.

Architectural Division,
National Building Research Institute,
South African Council for Scientific and
Industrial Research,
Pretoria.

1) MacIver, R.M. & C.H. Page (1962): *Society - An Introductory Analysis*: MacMillan and Co. Ltd., London.

DISCUSSION ON THE SECTION

'THE CITY - ECONOMIC AND PLANNING CONSIDERATIONS'

This section was the longest of the conference, so the discussion was broken up into three parts dealing with separate sets of papers. The first part of the discussion was introduced by Mr. P. E. McManis of the Town Planning School of the University of Natal. He dealt with the papers by Dr. McCrystal, Mr. Penny, and the joint paper of Dr. Badenhorst and Mr. du Plessis. He commenced by pointing out that a conference such as the present one, where the individual was confronted by a wide array of disciplines, in the words of Professor Beinart, led to 'a dilution of professional arrogance'.

Dr. McCrystal's paper, he felt, put a finger on the conflict in the city between private enterprise and the interests and rights of the citizens as a whole. This was a very real conflict, and what was good for commerce was not by any means automatically good for the citizens. Mr. McManis had in mind the freeways. It was generally agreed that these would be of great benefit for commerce, but little provision was made for the comfort of the people who would go to do business in the centre of the town - e.g. for the solution of the problem of adequate parking.

In regard to Dr. McCrystal's contention that the city councillors were decision-makers and that those who made wrong decisions would not be re-elected, Mr. McManis disagreed. He felt that re-election to office or not depended on a variety of factors, one of the least of which was whether one had been a wise decision-maker.

Then dealing with the question of the optimum size of the population for a city, Mr. McManis felt that the question of population density was very important, and that there was a vast difference between a population spread over a wide area with low building-density, and the same population concentrated into a small area. Human beings liked large cities, and were not interested in the fact that economists may say that they are inefficient. He referred to Tokyo with its ten million population, and speculated whether civic pride was not to some extent titillated by the size of city.

Referring to the paper by Dr. Badenhorst and Mr. du Plessis, and to Mr. Penny's paper, Mr. McManis pointed out that they overlapped to quite an extent. As far as the planner was concerned, they were both first class jobs of work. They indicated how, why, and where various elements in the town may be successfully placed. Mr. Penny had put forward a strong plea for 'the bigger the better' and while he may be in conflict with theories of town planners, he was on the side of big business.

Mr. Thorrrington-Smith, the Director of the Natal Town and Regional Planning Commission raised the question of whether or not towns could be kept to the size of 150,000 to 200,000 people, as suggested by Dr. McCrystal. Given the hierarchy of towns in a region, would it not be impossible to limit the growth of the nucleus of the region? - for as the subordinate towns grew, their increasing growth necessitated increases in the service function - and therefore the size - of the regional capital. Referring to Mr. Penny's paper, Mr. Thorrrington-Smith thought that apart from the advantages of the central area, it was important to encourage decentralisation by creating growth points in areas which are economically viable - growth points which will grow eventually by their own momentum, even though perhaps initially artificial inducements are required to 'prime the pump' - to get the growth going.

Dr. McCrystal, replying to a question about the size of cities, emphasised that he was not speaking in favour of small cities. The size of city he was talking about - something of the order of 150,000 to 200,000 people - was not a small city by South African standards. There were no more than half-a-dozen cities in South Africa larger than this size. He did not suggest this size was an optimum - it was a blend of possible conflicts. As far as the question of restricting the growth of the central nucleus of a region was concerned, it was

neither a practical policy nor practical economics to change an area. What one could do rather was to accommodate new urbanisation in satellite areas; so that by diverting to new centres growth that would have taken place in the existing cities, one could to some extent restrain the growth of the centre. Come what may, the regional centres must remain as centres. The big regional city could become less and less important as an industrial centre, but its service activity would grow as the region developed. He was confident industrial activity in future would not go into the cities. By stopping the development of industries in cities and diverting it to new centres which could be brought up to the 150,000 to 200,000 population mark as rapidly as possible, the rate of growth of the existing top few cities in the South African urban hierarchy could be restrained. Restraining their growth would help such cities to cope with problems such as traffic congestion, etc. He did not envisage the need to change top centres such as Cape Town, Durban and Johannesburg. These were very well located; but beneath these in the hierarchy one could introduce new centres which might be industrial centres. Pietermaritzburg was a case in point. This was obviously developing as an industrial satellite of Durban, while Durban was becoming increasingly a service centre - Durban was probably more dependent upon industry now than it would be in ten years' time.

In response to a question about the negative aspects of decentralisation - whether or not the larger cities were less affected by economic recession than the smaller ones, Dr. McCrystal felt he was not in a position to answer adequately. However, if one was considering a recession as bad as that of the 1930's, then experience overseas had shown that a place like London was as badly affected as the smaller cities and towns. Where a particular city had concentrated on industry of a specialised type, then of course it would be very badly hit if that industry (such as ship-building) was particularly affected by a recession.

Mr. A.L. Kietzman, a Johannesburg City Councillor, stressed that when comparing the operating costs of towns of various sizes, one had to be very cautious. Not only was there a difference in the range of services provided by the larger towns, but there was also a difference in the quality of the service. Other factors too were involved in the comparison. Thus, for example, a town on the seaboard would have no difficulty in sewage disposal, whereas an inland town would have considerable trouble. He then asked Dr. McCrystal whether, in his examination of towns of different sizes, he had studied individual services. Did he find any difference in costs? Replying, Dr. McCrystal said that American studies such as the one by Professor Hirsch had attempted to take the qualitative aspect of services into account. Obviously this could only be done up to a point. In the statistical study of a larger number of cities, the differences between inland and coastal cities tend to balance out. While there were unexplained residuals in the correlation calculations involved, the statistical analysis did produce a very good correlation between rising costs and rise in city size. In an Italian study, the individual services had been compared, and not merely the total costs. Taken together, results showed that a city of 100,000 to 250,000 people was distinctly cheaper to operate than a larger city.

During the discussion Mr. R.W. Morris, (of the Co-ordinating Committee of the Ratepayers' Organisations, Durban), said that Mr. Penny had spoken of adequate roads, transport and parking. He would have liked to have heard a lot more on these three subjects as he felt that from Durban's experience the amenities and facilities were at the root of most of the trouble. Private enterprise would build parking garages when the demand exceeded the supply and profits were guaranteed. On this basis the needed facilities consistently lag behind the demand. Furthermore, new buildings did not have adequate parking facilities. All this in turn led to the authorities limiting bulk area in the central business district. After developing the theme further, Mr. Morris said that one of the problems of the conference was that the academicians tended to use erudite and flowery language which they alone could understand. If the academicians wanted to communicate with the entrepreneur and the practical man, and they wanted their points of view understood by the citizens who would have to accept what was going to be implemented, then a more basic form of communication, which all could understand, was needed.

Replying to some of the points made by Mr. Morris, Mr. Penny commented that one of the reasons why parking was not being supplied in new buildings was that the Municipality would not permit this. Thus one could not really blame private enterprise. In the United States the general practice was for cities to insist on parking being provided in new office buildings, or being provided within a certain distance of a building. It would have been better in Durban for the Municipality to insist upon parking being provided in buildings - but this was a controversial subject.

The second part of the discussion dealt with the papers by Mr. Rosenberg and Professor Carol. The discussion, again introduced by Mr. McManis, was severely handicapped by shortage of time. Dealing with Mr. Rosenberg's paper, Mr. McManis pointed out that once again the problem dealt with was a conflict between private enterprise and the rights of the citizens as a whole. He felt that Mr. Rosenberg had offered some form of peace treaty. While as a planner he himself was inclined to welcome this, as an architect he was alarmed and appalled. He could already feel the computer breathing down his neck! At the moment the bye-laws and the existing town planning regulations do a fair amount of work for the architect; the structural engineer does the structure; the elevator engineer deals with vertical communications; and the economist works out the final arrangements. This left the situation where he wondered just what remained for the architect.

Mr. McManis felt that it was a great pity that Professor Carol's paper had been limited to a period of half-an-hour. The topic was one which could have happily occupied the conference for two or three hours, and he thought that where such first class material was available it was a mistake to try and cram too many papers into an absurd space of time. He then raised the question of just how one would define a trading area when dealing with a country like Switzerland, where his personal experience showed that it was not uncommon to live in Geneva in the south and shop in Zurich in the north.

Mr. R. G. Ventress, Mayor of Kloof, and from the University of Natal, raised a question in regard to Mr. Rosenberg's paper. He asked about the use of lot size as a principal parameter in F.A.R., and about other parameters of bulk control. Mr. Rosenberg had mentioned that there were other controls, and the one which he (Mr. Ventress) would like some information on was building line and side space and rear space. If one imposed flat figures for building lines on any size plot, the effective utilisable areas as a proportion of the total lot area was considerably less on the smaller lots, than it is on the larger lots. He wondered whether instead of using the area of the lot as a basis for calculation, there might have been some value in considering that portion of the lot which might be described as 'buildable'. Mr. Rosenberg replied that the question in some respects went to the root of many problems in this field. Lot size was chosen as a parameter for various reasons. One was that ground is divided into plots with separate ownerships, and therefore lot size was a ready-made unit. Furthermore, as a parameter it also had the advantage of simplicity. They had found in the actual practice of statutory planning that the simpler the methods used, the more easily understood they were and the greater the chance of success.

In regard to the suggestion about the actual usable building area of a lot, there were three reasons why this had not been used. The first reason, one of simplicity, had already been referred to. The second reason was that part of their aim had been to try and make it more difficult to build on very small plots. The design and other advantages were greater on bigger pieces of ground. Generally speaking he did not think a plot of less than 20,000 square feet was suitable for flat development. The third reason was that it was not always possible to ascertain what the building area would be as a parameter, because one could establish the front building line and fix it 25 feet from the front boundary, but the side and rear spaces varied with the height of the building - so that one could never be certain what the building area was without studying the architect's plan. Did the architect want a fairly low squat building, or a very high one? Such factors affected side spacing and the buildable area, so that one would have a continuously variable parameter.

Professor Trotter asked Dr. McCrystal, in connection with limiting the size of certain communities, whether he felt the income redistributory effects of large cities had been taken fully into account in his investigation - what would be the implications of people transferring from agriculture to secondary industry and service activity? Could these be accommodated in the new decentralised centres? Dr. McCrystal answered that a lot of thought was necessary to really answer the question. Off-hand he felt that if people wanted to transfer out of the agricultural areas into these other activities, they could be accommodated in new centres; but the tricky part of the question was what the effect would be of having say ten new centres with 250,000 persons each in South Africa, instead of having two-and-a-half million people going into Durban, Cape Town and Johannesburg. He could not answer this without study.

Others taking part in the discussion up to this stage were Professor R. J. Davies of the University of Natal, Mrs. L. Willgoose of the City Engineer's Department, Durban; Mr. J. Strydom of the Pinetown Town Council, and Professor Hans Carol of York University, Toronto.

The last part of the discussion dealt with papers by Mr. de Swardt and Mr. Welch. Miss Jessie Birss, of the Central Planning Project, Durban, introduced the discussion.

Miss Birss started by saying that the main theme of the two papers was the fundamental part played by research in the planning process. She did not think there was anybody at the conference who would quarrel with the main principles outlined in the two papers, and the same sentiments had been stressed by other speakers during the conference. Therefore, the field was clear for a discussion of the ways and means by which research can be rendered a more efficient tool for the task of creating an environment which achieves the greatest 'widths' for the greatest number. This was a vast subject and she could merely mention some ways and aspects which had occurred to her during the course of these papers.

First of all there was the need for co-ordination and co-operation in research. As Mr. Welch had mentioned, research was carried out and financed by numerous individuals, and institutions and agencies - both public and private. He had suggested the setting up of a central research register to co-ordinate such activities. Who should sponsor the first move in this direction? - the central government, the university, the private sector? How would such a venture be financed? With reference to the need to ensure the conservation of resources, the central government should be vitally interested in this subject. Would it be the function of the central body to direct research as well as to co-ordinate? She thought of the possible desirability of directing post-graduate student research into the fields of knowledge where work was most needed.

Some of the information needed for planning could be collected by official studies. For example, the enormous cost of the journey to work surveys, or transportation studies, could have been avoided if the information had been gathered by the official census. Income projections were very important for planning a region or a city. The Receiver of Revenue was holding much useful data and yet it was not possible to have access to this, so instead the research worker had to waste time hunting through masses of published and unpublished material for all sorts of geographical areas and many different points in a town, and try to put this piecemeal picture together. Savings of time, money and effort would be achieved if some means could be found for releasing the information that is available in some official quarters. It would be possible to still retain the confidential nature of these data.

Another aspect of research was that many surveys were conducted once and never subsequently updated. The results of the original research would be far more valuable if they were regularly updated.

Miss Birss also pointed to the need for mutual understanding between social scientists and the planner. Both the 'transmitter' and the 'receiver' must be

designed for communication. 'Is this mutual understanding something that can only be achieved by the time-consuming process of putting the planner and the scientist in the same cage, leaving their respective couches to seek through to each other, ... or can the message be got across sooner and more efficiently during the basic training of each?'

Finally, she referred to the plea by Professor de Coning for the need for all the workers interested in urban areas to get together some time to discuss the possibilities for research. Ways and means for adding to the store of knowledge, and having acquired it, how to use it, should be discussed.

Mr. J. G. Muller, of the Department of Town and Regional Planning of the University of the Witwatersrand, put a question to Mr. Welch. He asked how in a state of rapid social change could one implement human requirements in physical form. How did one avoid the problem of time lag? 'On the one hand we are able to ascertain human requirements, but by the time we are able to implement them in physical form, these requirements might in point of fact have changed. This is a very difficult aspect of the present dynamic city situation ...' Mr. Welch did not know the solution to this problem.

Professor P. B. Harris of the University of Salisbury disagreed with the suggestion of directing post-graduate research into certain fields of importance to planning. He felt such a step negated all that university research stood for. We ought to be fully aware of the dangers of making social scientists tools of outside agents. He agreed with Mr. Welch about the need for systematic theory. One of the great problems which emerged at the conference was that some people seemed to think there was a difference between theory and practice, and practice was somehow more important than the theory. 'It is only in theory that practice is more important than theory'.

Miss Birss replied that she did not by any means advocate that all research must be directed. All she was pleading for was that theses should not be written and put on a shelf and never looked at again. The maximum use should be made of research, and some of the research (but not all) could be directed.

Dealing with the question of subjects chosen for student theses, Mr. Welch felt that very often there were a number of studies which could be 'done, and very adequately and fruitfully done by students, in fields which are not quite as glamorous as some of the subjects which attracted them. I mean it is interesting to know about homosexuality and lesbianism, and various problems such as this, but from the planner's point of view cities ... this information is relatively insignificant. The physical planner has to design something, and unless he has information on which he can base his decision, he will land up with ad hoc decisions'.

Mr. E.J. Jammie, of the City of Johannesburg, also spoke. He felt that there was room in South Africa for greater contact between universities, and for co-ordination in regard to research material. The universities could play a very important role in ensuring that research material is passed from one university to another. He supported the idea of some form of research register. He wondered whether the University of Natal, having taken the initiative in organising the conference, could also take a leading step in arranging the exchange of research material between universities. Replying, Professor R. J. Davies of the University of Natal pointed out that the central government's Department of Planning had recently instituted an inter-university committee to examine on-going research relating to town and regional planning. One of the committee's tasks was to compile a register along the lines suggested during the discussion. Such a register would be for distribution generally to all persons concerned with the development and planning of cities.

Mr. G. Margo, from the University of the Witwatersrand, commented on Mr. de Swardt's paper on Soweto. He regretted that the paper did not include some coverage of social problems in the townships. He referred to problems of venereal disease, illegitimacy, and homicide; and to overburdened hospital and schooling facilities. All these he regarded as serious problems in Soweto.

Replying, Mr. de Swardt said he had been at pains to show that there was considerable concern by the planning team for the Bantu in Soweto - concern for how they were housed, and how they lived within the townships. There were many problems which they were trying to deal with. One of the big problems was socio-economic, and this could not be solved at once. Johannesburg was one of the few local authorities which had a full-time research staff, including sociologists and economists, working in the Bantu townships.

Mr. W. J. P. Carr, Head of the Non-European Affairs Department of the Johannesburg City Council quoted some statistics on housing, and medical and social services in Soweto. He invited those conference members who would subsequently be visiting Johannesburg to see Soweto and the work of his Department.

Mr. R. W. Morris, Chairman of the Co-ordinating Committee of Ratepayer's Organisations in Durban, said that he felt that the conference agenda had had an important omission. While it was impossible for the conference to cover all aspects of city life, he regretted that 'the uneconomic' amenities such as symphony orchestras, theatres, opera houses, educational facilities and institutes, parks and gardens and so on, had been omitted from the discussions. He appealed for further conferences in the future along the lines of the present one, and hoped that some of these subjects would be included in the next conference. He also suggested that discussants should be dropped, as with the calibre of the person attending such a conference there would be no shortage of discussion.

CLOSING SPEECH

CLOSING SPEECH

Kingsley Davis

The closing remarks, including the summing up of the Conference, were by Professor Kingsley Davis, of the University of California, Berkeley.

The fact that this stimulating conference has dealt mainly with South Africa makes any summary or an overall synopsis extremely difficult for an outsider. This is especially true because the conference has dealt with cities and with urban problems, and has therefore touched upon virtually every aspect of life in the Republic. In modern societies, cities include a large share of the people and most of what goes on; their influence is even a dominant force in the location of agricultural activities, not to mention game reserves, pleasure boating and travel routes. So if one looks back over the meetings at this conference one sees that a formidable assemblage of diverse topics has been dealt with, from the sex life of Bantu domestics to the problem of freeways, from spontaneous art forms to systems of municipal taxation. Strive as he may, no outsider can hope to encompass all of these topics in their rich detail in a complex country such as South Africa and find underlying themes or bases of synthesis that will go beyond truisms. Accordingly, I shall avoid any attempt at a synthesis, but instead try to describe a few of the similarities and differences that struck me as I listened to the proceedings, and compared this conference with many discussions of urban affairs I have attended in the United States. This may highlight some basic issues that have arisen.

Let me begin with certain similarities. You know, of course, that in my country we have many of these conferences. At the drop of a hat the Ford Foundation will lay out funds for a conference in the United States on urban problems; the number of urban problems multiplies in ratio to the funds furnished. The first similarity, (some of these you would guess), is the predominantly problem-oriented nature of such conferences - a characteristic evident in meetings like the one we have just had. We tend to look at cities and urbanisation from a practical point of view. We examine current problems that demand immediate solution. The emphasis is on the present and the future. I find the particular issues and questions to be amazingly similar as between the two countries. The statement of the problems may receive somewhat different phrasing and emphasis, but issues such as mass transit versus the private motor car, freeways versus the countryside, housing renewal versus relocation, high-density versus low-density, are all familiar to me. Americans perpetually discuss the control of urban growth and the dangers of urban sprawl, the need for metropolitan governmental bodies wider than the city proper, the problems of race relations within cities, housing segregation, the 'decline' of the central business district, and so on.

Another characteristic of conferences in the United States, and one that was mentioned here several times, (perhaps more often than it would be mentioned in the United States), is the tendency to consider these problems in piecemeal fashion. They are debated one at a time, with little attempt to relate one to the other. In other words, there tends to be little reference to the central theory of urbanisation and city structure. The theory - that is, the examination and systematic ordering of assumptions - is neglected. To me this is curious. If the issues discussed are so similar as between South Africa and America, or for that matter between these and any other advanced country, the reason must surely be that in all of these countries the same basic processes are at work. As I see the matter, the problems arise as products of the process of population redistribution in connection with relatively advanced economic development. As such they are all repetitive and all interrelated. Hence the most important aspect of any particular issue is how it connects with the others. The causation of any problem is not

piecemeal, and accordingly its solution cannot be piecemeal either.

A further similarity between urban affairs conferences in America and the one here is the tension among disciplines that deal with the city. Since cities contain everything, (in America some cities even have oil wells in the central business district), virtually every conceivable discipline can be brought to bear on cities. The nature of each discipline, of course, is to train people to think in terms of certain systematic abstractions; that is to say, each discipline deprives its practitioners of their ability to apprehend reality. Only the rare person can go through such training and retain or recover his commonsense. It is no wonder, then, that on both sides of the Pacific we wallow in mutually antagonistic abstractions in looking at the city. In addition to the usual switch-blade slashing that occurs whenever anthropologists, sociologists and economists get together for teamwork, there is in the case of cities a somewhat deeper interdisciplinary cleavage - a sort of fundamental war in which poison gas and automatic weapons are used instead of switch-blades. This is the conflict between the scientific, (or at least scientific-in-aim), disciplines such as the social sciences, and the clearly applied or professional fields such as city planning, architecture, highway engineering, business analysis, and public health. The reason for this deep cleavage whenever urban affairs are considered, (a cleavage that I assure you is no less deep in America than it is here), is well worth pondering. It is not simply lack of communication, (the representatives of different disciplines shout at each other all the time); it is rather that the tasks are different. The aim of the planner or the engineer is to get ahead with the task. To get ahead on urban problems requires either consensus on what needs to be done, or authority to do it anyway. Consensus on solutions to urban problems is impossible to obtain; by definition, there would be no problem if there were consensus, because what we call urban problems virtually always involve group conflicts. In his anxiety to get on with his business, the planner generally *assumes* consensus, or else he thinks he has found it somehow in the nature of man or in the nature of things. Often he professes to find certain human and social 'needs' that are just there, which his planning can satisfy. This subterfuge the social scientist usually will not accept, because his business is precisely to understand human behaviour, without much concern with actual performance and hence without much practical responsibility. He therefore tends to question the off-hand assumptions that the applied practitioners make about 'human needs', the 'nature of man', and natural harmony. The applied practitioner of course fights back; he accuses the social scientist of blocking the path of progress, of being unrealistic or cynical. I am afraid the conflict among disciplines with respect to urban questions is insoluble. Conferences on urban affairs in the year 2000 will doubtless see the practical planners and the theoretical social scientists at odds with each other.

A closely related feature of many American conferences on cities, perhaps less observable here, is the tendency to discuss urban problems and solutions in terms of means, avoiding the discussion and analysis of goals. In a way this is natural; goals and values are not derived from science, but rather science or intelligence is used to determine the most effective means for reaching whatever goals we have. It therefore seems simple to put modern science to use in 'solving' our urban problems. But, as I have already said, the root of most urban problems lies precisely in the conflict or competition of goals, not in the ignorance of means. The man who cannot afford a car wants good mass transit. The man who can afford a car wants good freeways. If you try to satisfy both you satisfy neither. I happen to live in a metropolitan area that is building an elaborate subway system at the cost of ... well, the cost goes up each year, usually to double the amount that the engineers estimated for that year. Along with the rapid transit, the authorities are building elaborate new freeways along the route of the subway so as to guarantee that nobody will ride in the subway when it is finally built. To try to discuss the solutions to urban problems without reference to the goals that define them as problems and for which a solution is sought, seems a strange sort of exercise, especially since empirical evidence on goals can be obtained. Doubtless the reasons for excluding goals from analysis or research lie in the fear that to discuss the goals openly and directly will bring the conflicts to the surface. Such analysis, it is feared, will destroy the assumption of consensus, or the claim that it exists, which the regime in power, or the planner, must have in order to act. It would therefore tend to paralyse action. In this

goods. Not only are there ever more people, but each of them makes ever more demands on the environment. In the United States one moves from an apartment in the central city to the suburbs, because there is not enough space in an apartment to house all of one's equipment. A place is needed to put the boat, the golf clubs, the fishing tackle, the freezer, and the car. Furthermore, as you know, a certain amount of space is needed for the hi-fi set if proper stereo sound separation is to be achieved. Once having moved out to the suburb, a family needs still more equipment. It needs a power lawnmower, an extra car for the wife and each adolescent child, a more powerful television antenna. For all this, no ordinary house will do, but only a 'ranch house'. Accordingly, we have ranch houses by the millions. We used to think of ranches as places with cattle grazing nearby, but now they are places where the kids come home to get sandwiches in the afternoon.

Something that was mentioned often in this conference, but which Americans view somewhat differently from South Africans, is the family. I note that South Africans seem to view the family only as an object of solicitude. As a normal unit, it seems to be viewed as an end in itself and therefore to be pushed and sponsored, whereas in the United States the concern is not so much with family stability as with what it does. A stable family can rear children in the wrong way - in fact under Dr. Spock's tutelage, we had millions of children reared the wrong way. A second wrong thing that the normal or stable family can do is produce too many children. As I sometimes tell my students, the problem of the family in modern industrial society is that it is too efficient. It does too well what it is supposed to do for society. If South Africa rapidly begins to seem more crowded, it will be because South African families are too normal, and are thus multiplying people at the same time that economic development is multiplying the goods and services that families use to impoverish and pollute the environment.

Another difference between this conference and its American counterparts is that here there was far less emphasis on far-out technological miracles. In South Africa you go in less for what one might call the unrestrained technological imagination. In the United States we have people who call themselves experts on the future, or futureologists. One of them told me that whereas other people study the present or the past, he studies the future. Hardly an urban conference can take place in the United States without discussions of cities in or on the ocean or underground, of facilities for pumping heat out of giant cities of 50 million or more, or skyscrapers that are whole cities in themselves. What I find interesting about this urban technological utopianism is that it seems bent on finding ways to do what I doubt people want to do. It is bent on making really high density technologically feasible. It represents a type of approach to social problems that is very common in the United States, which I call the 'technological fix'. When the physicists, engineers, and public health people tackle an urban problem, they generally go to the laboratory and come up with a gimmick that will fix it. If the problem is over-population, a small plastic device inserted in the proper organ, or a pill taken orally, will solve the problem; or else cities in the oceans, fresh water from the sea, and synthetic food will solve it. If the problem is one of traffic congestion, the solution is apt to be superhighways or high-speed monorail trains. My only complaint about all this is that unfortunately the 'technological fix' often creates two problems where one existed before. The superhighways stimulate traffic and thus spread congestion while helping to create more smog; the birth control pills become a public hazard. Little attention is given to the varied social and economic consequences of the proposed technological innovation. There is often insufficient flexibility to get rid of the plans that the previous planners made. For instance, one of the problems of Washington D.C. is that it was a planned city; the plan has caused great expense and trouble to modify.

In concluding this comparison I have to make a confession. I feel sad to see and enjoy the pleasant stage of development that has been reached here in this country, and yet to realize that the country has already begun that quick and inevitable trend toward a more crowded, complex, and conflictful condition that can be observed in the United States. One feels the necessity to point out again that an ever higher level of living is used in ever greater proportion simply to obviate the discomforts and hazards of an ever higher level of living.

regard, I have often observed that economic development is used as a sort of dummy goal. In truth, it is no goal at all, because it is absolutely neutral as to what the economic gains are to be used for. Economic development simply means a multiplication of the means available to a society. For what purpose these greater means will be employed is not stated. I may sound critical, but if so I am criticising my own country much more than South Africa, and certainly I am not critical of this conference. My purpose has been to point out some analogies.

Let me now try to delineate some differences. At one point I intended to refer to greater politeness and a more indirect manner in South Africa, but after participating in the late stages of the conference, I decided to suppress that observation. Actually most of the differences, it seems to me, are not a function of the so-called cultural differences between South Africa and America. Doubtless there are many such, including our modes of speech, but many differences arise from the fact that one country is older and bigger and therefore is farther along the road of development or downfall, whatever one chooses to call it. In other words, the differences seem to me to be mainly a function of the stage of development. For instance, in this conference I was struck by how little emphasis there was on environmental pollution. This is a big question in the United States, and one that will be still bigger as time goes on. The usual conference today in my country gives much attention to air pollution, water deterioration and noise (which you might call 'sound pollution'). The reason is simple: we have more of all this pollution than you people have. You will reach this point, if you work hard. Again, as you know, we discuss race issues a great deal in connection with our urban areas. There is nothing peculiarly urban though about race relations; it is simply that a considerable amount of conflict between racial groups does occur in cities. The old bogey in the United States was 'de facto' segregation. This is being rapidly changed. Underlying the attack on segregation was the ideal of assimilation and equal opportunity. This ideal is now seemingly old hat and is under attack. A new doctrine has arisen, and interestingly enough this new doctrine sounds much more like South Africa than the old doctrine. The new doctrine is one of communalism - each group to itself exercising power and commanding opportunities as a group and not as individuals. Positions are to be given to members of each racial 'community' as a necessity for representation and not as a reward for talent or for contribution. Black Power as a slogan, for example, carries with it a plea for separate religion, culture, and even territory. That this new plea for a caste system comes at an advanced stage of race relations is shown by the fact that the American Negro is now more urbanised than the American white by a considerable degree; he has also gone fairly far along the road of education and participation on all levels of the occupational structure. The fact that the American Negro has a higher level of living than the people in some European countries is apparently of no particular political relevance to the Black Power advocates.

I come to another point of difference between South Africa and the United States. There is less emphasis here on poverty as such apart from race. As you know, there is great discussion of poverty in all urban conferences in the United States. There is a tendency to treat the problem in absolute terms, as if some kind of basic need were not being met, whereas it is clearly a problem in relative deprivation, (and that is why the absolute level of the Negro in the United States is of no political significance). If we are further along in economic evolution than South Africa, my guess would be that relative deprivation will become an increasingly clearer issue than absolute deprivation as time goes on here.

Another feature that has struck me in the present conference is a lesser emphasis on demography here than we would usually expect in an American conference of this kind. I do not know how to interpret this lesser emphasis. The reason may partly lie in the smaller amount of data; South Africa lacks some kinds of demographic information on the Bantu population; but it is also possible that the lesser emphasis on demography may be due to the illusion that the country is uncrowded. It is certainly uncrowded in the sense that it can become a lot more crowded. It still has much development ahead of it; but the illusion of sparseness will soon be denied by reality; the nation has approximately the same overall population density that the United States had in 1930. Urban problems in industrial societies are a consequence of the multiplication of both people and

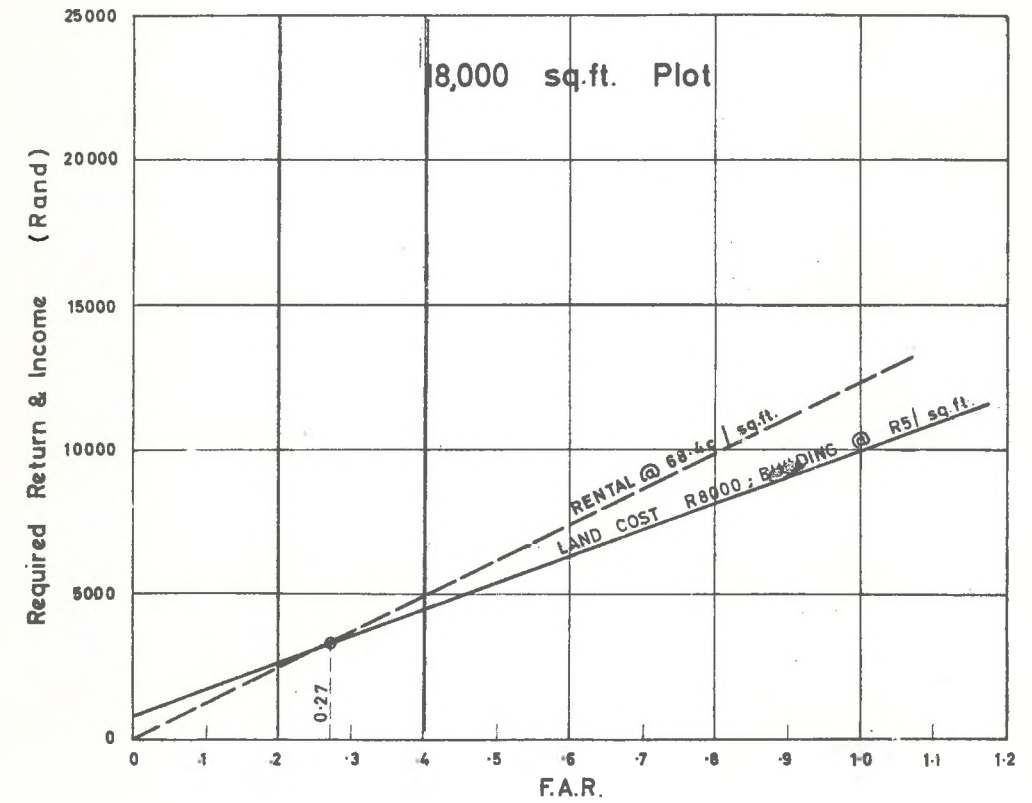
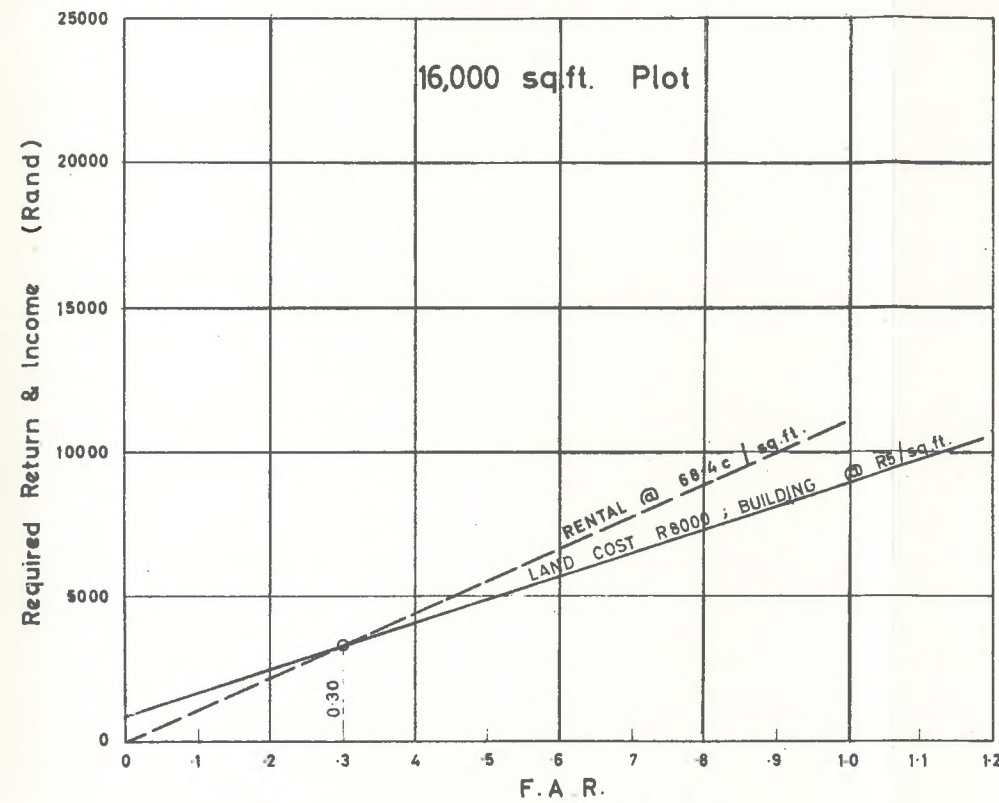
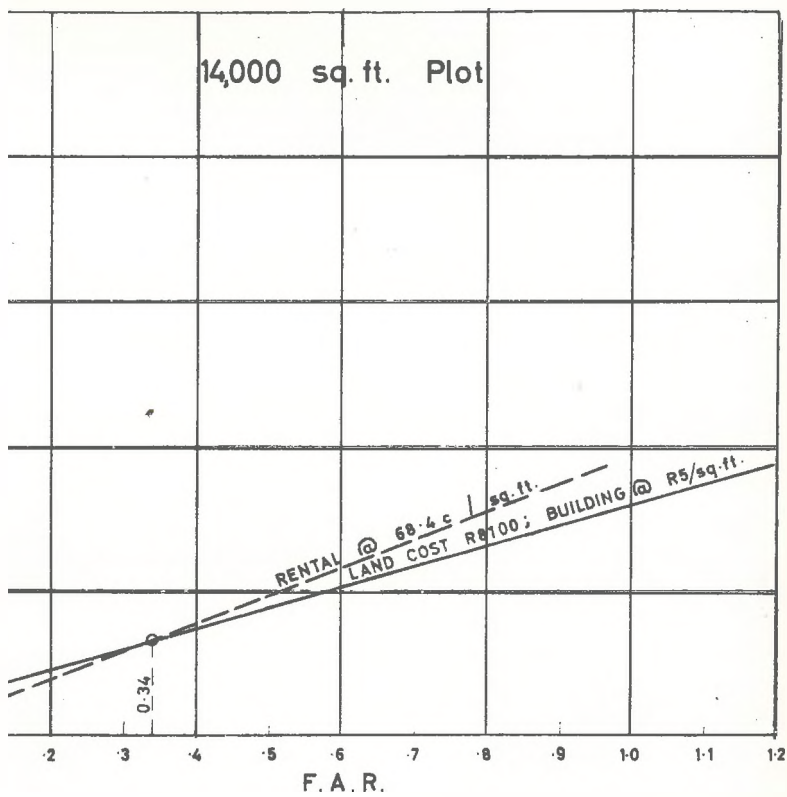
We are now putting exhaust control devices on our automobiles, not so that they will run more effectively but to lessen the pollution from having too many cars. As a result, cars cost more. At some point human beings will have to ask how they can control themselves, not simply how they can control and use their environment.

You can see that the conference has inspired me to reflect on certain fundamentals. Whether I have them straight or not is another question. But let me say that I have enjoyed the conference and profited from participating in it. It has taught me much about South Africa that I could hardly have learned in any other way, at least in such a short time. I am overwhelmed by the kind and considerate hospitality we have received. I am certain that Professor Spengler joins me in this appreciation. The Principal of the University, Professor Horwood, and Professor Watts, Professor Davies and Professor Trotter could not have been more magnanimous and helpful, nor their sparkling wives more gracious as hosts. In fact I feel sure that not only the numerous foreign guests here, but also the South Africans themselves from other parts of South Africa, will join me in a rising vote of appreciation and gratitude to the officers and staff of the University of Natal and their generous hospitality for their fine organisational sense in this conference on urban affairs in South Africa. They have set a high standard for the future conferences that are sure to come.

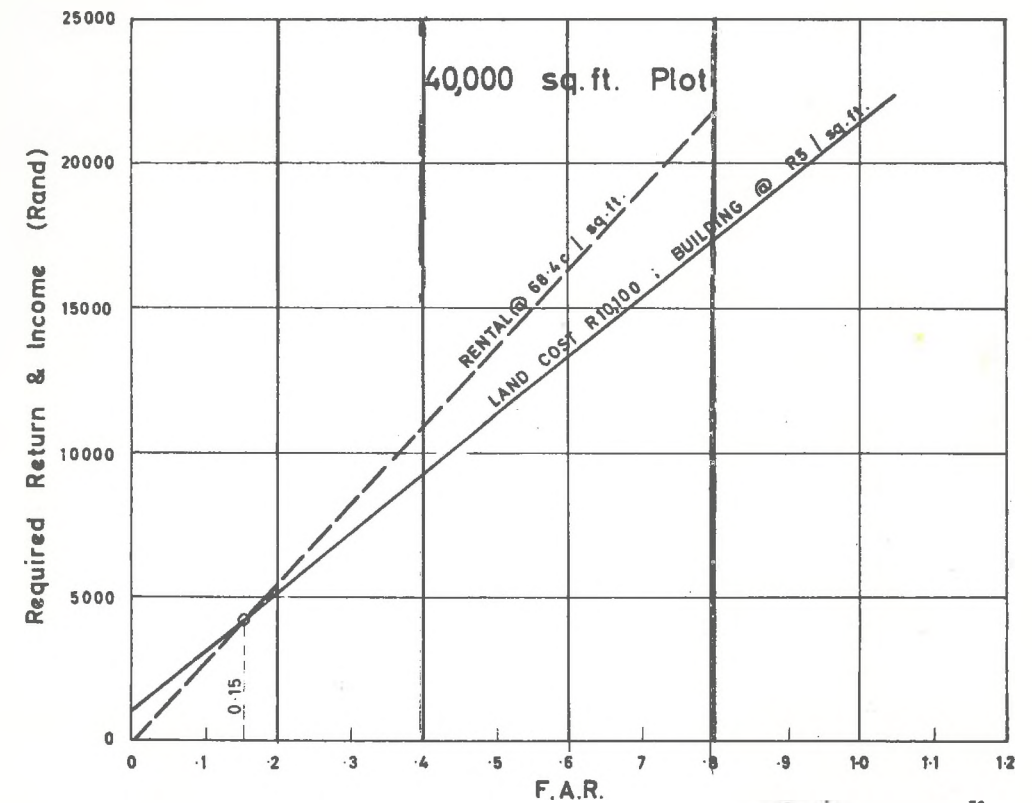
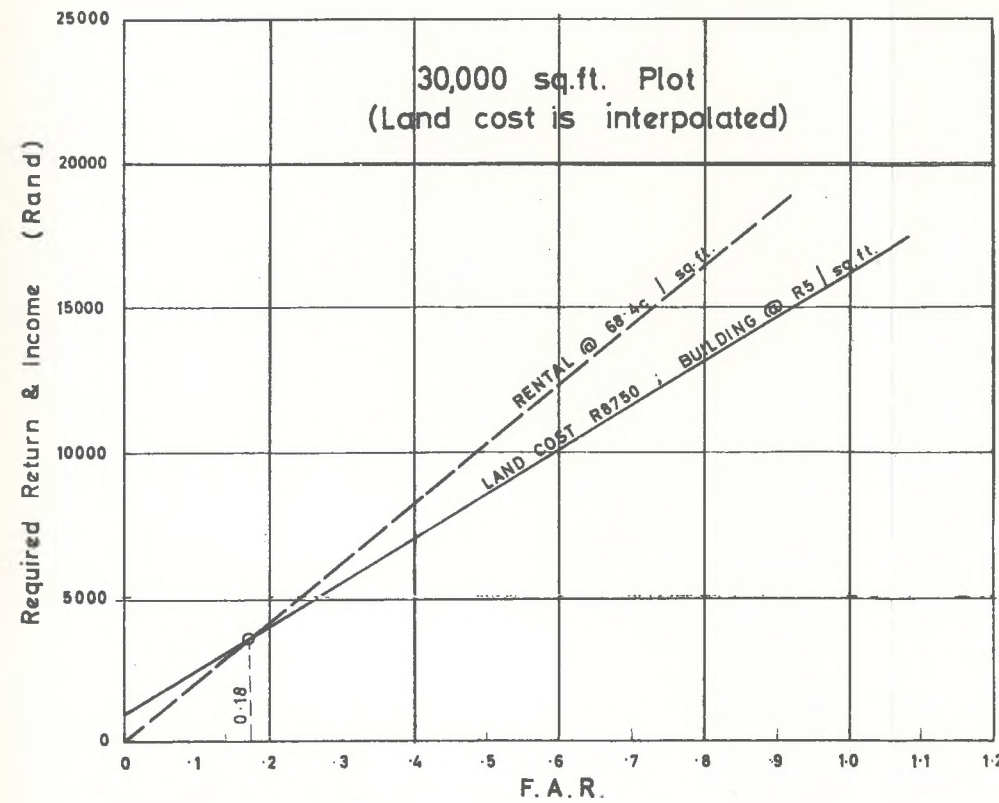
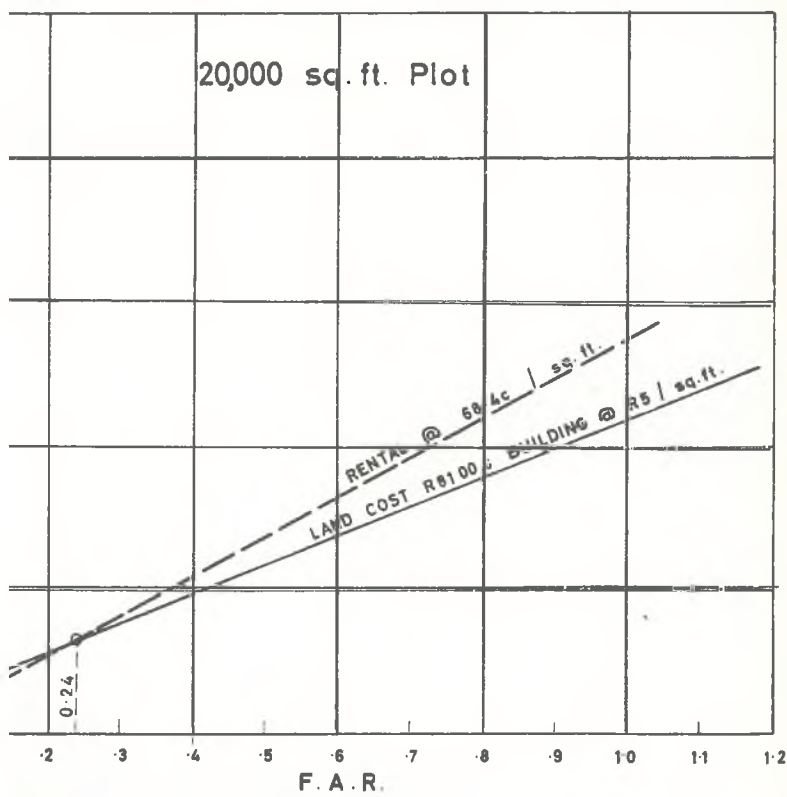
REQUIRED GROSS RETURN BASED ON AVERAGE DEVELOPMENT COSTS COMPARED AT DIFFERENT PLOT SIZES WITH
MINIMUM RENT INCOME BASED ON 3 BEDROOM FLATS

FIG. 6

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— REQUIRED GROSS RETURN @ 10% OF ESTIMATED AVERAGE DEVELOPMENT COSTS - - - GROSS RENT INCOME FROM 3 BEDROOM FLATS





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