Applying Social Survey Methods to the Study of Agricultural Innovation:

Organizing a Farm Welfare Study in Embu

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The social survey has come to be a familiar type of sociological research, one immediately invoked for solving new and unfamiliar research problems. We find that Makerere's UNICEF - FAO Rural Extension Project has listed as one of its specific objectives, "to organize surveys" which will ascertain "the needs and interests of farmers" throughout East Africa.[1] The information gained thereby can tell the government departments concerned what is the general state of rural farm family welfare, and what are the factors which underlie the emergence of progressive farming. I have recently been planning the first of such "Farm Innovation" surveys, and this paper explores the methodological considerations which have arisen. Particularly, we will examine whether or not the traditional social survey rationale, that of hypothesis testing, is suited to a situation where one must operate without preliminary knowledge. I shall argue that the procedures for _finding_ ideas are, in fact, rather different from those necessary for _testing_ ideas. This distinction has important implications for the design of social survey research.

I

Traditionally, the exponents of social survey research have stressed the unity of rationale linking social science with natural science: "The formal features of survey analysis are no different at an abstract level from the procedures of more traditional scientific work."[2] The survey is thought of as an analog to the natural scientist's laboratory experiment. It is (to quote but two of many like explications), "a way of organising the collection of evidence that a hypothesis may be tested," or, "the proof of an hypothesis which seeks to hook up two factors into a causal relationship through the study of contrasting situations which have been controlled on all factors except the one of interest."[3] From this standpoint, the function of a survey is the same as that of the experiment: by its outcome, each serves to exclude or disprove one or more hypotheses which would have predicted alternative outcomes. The purpose of a social survey is, then, to prove inferences.

In its most simple form, the received "research design" paradigm is as follows. The scientist identifies a _problem_, about which he has _ideas_. He translates these into analytical language as _hypotheses_, relating in some way to previous knowledge labelled _theory_. He devises _methods_ for putting his hypotheses to _operational test_ within an _experimental situation_. The record of an experiment or a survey becomes _raw data_ which are then _processed_ according to the set operations to yeild _results_. These either confirm or reject the original hypotheses, and must be _interpreted_ to confirm or revise the general body of theory from which they were ultimately derived. The test stage is mid-way in the process, and it is here that both the experiment (in natural science) and the social survey (in social science) occur. They are alternative avenues for validating predictable relationships; they differ only in the _methods_ they employ.

Consequently—following upon these premises—the discussion of research methodology has usually been confined to examining its role in testing already developed theoretical inferences. Our working procedures in many branches of science are based upon the supposition that theory grows through the accumulation of trial results. Methods are important in conducting the trial itself, but the theory antecedes the trial and so is independent of research methodology. Accordingly, you _have_ a theory, but you _choose_ a methodology.

[1] Plan of Operations for the Establishment of Rural Extension Training, UNICEF Board Document E/UNICEF/P/ L. 389.

[2] Hyman, 1955, p. 8.

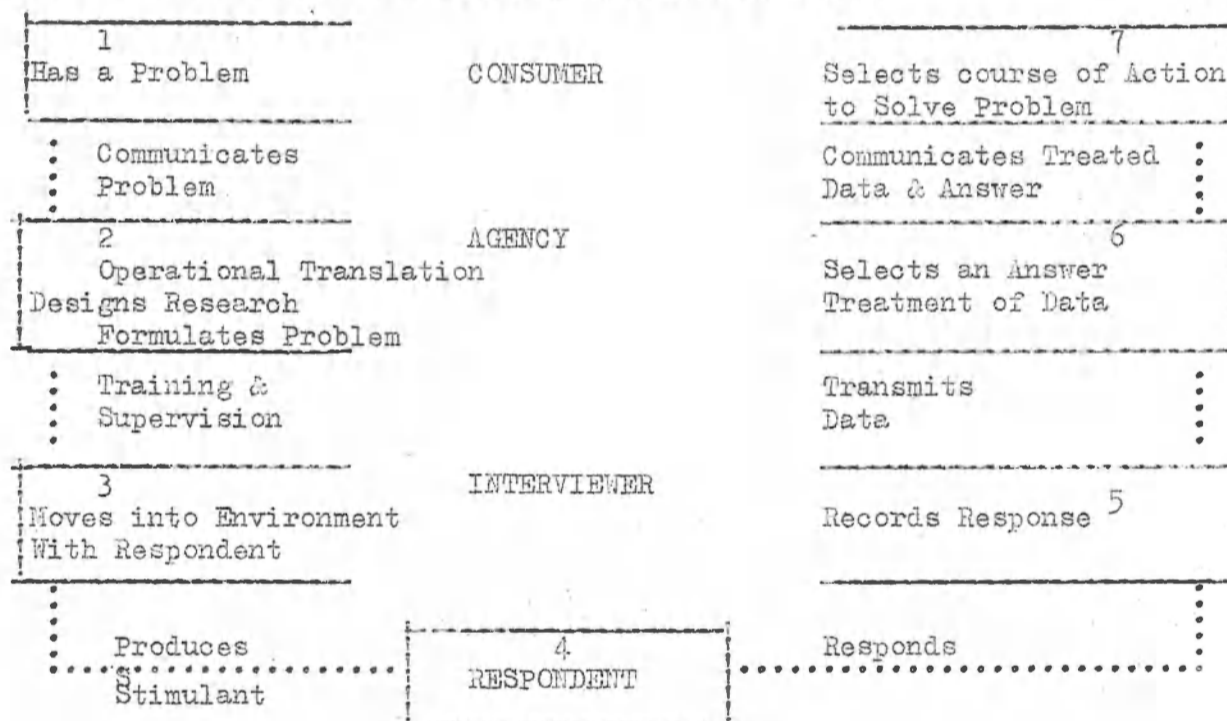[3] Jahoda, _et.al._, and Greenwood, Quoted in Moser, 1958, p. 7.

Interestingly enough, one finds that the natural scientists are growing rather disenchanted with the foregoing model of the research process. To be sure, it can still be found in most introductory texts. But at the plane of more sophisticated discussion, a number of fundamental criticisms have been raised:

1 The model ignores developmental aspects in a research tradition.
Is there a phase structure to the development of a theoretical tradition? And if so, are the same procedures necessarily relevant at different stages, or do they change as a tradition matures? It would seem that the elabourate precautions which are characteristic of a developed experimental tradition may be prematurely confining to one which is just "getting off ground" so to speak. In its "infancy" a tradition goes through a phase when important discoveries and ramifications are a daily occurence, and when there is a rapid aggrandization of new insights. To demand experimental tests at the onset of a new line of inquiry may actually inhibit its acquiring the necessary coherence to achieve any sort of explanatory power.

2 The model makes no provision for continuing feedback between the test and the observer. According to the model, feedback occurs after the test has been completed and the results analyzed. Then, and only then, is the theory modified to accomodate to the operational test of hypotheses. In practice, however, two aspects are even more important: tests are generally expensive to conduct, and in many procedures negative results may become manifest in an early stage. New insight often accompanies the administration of experimental procedures, so that the relationship between test and concepts is cyclical, not linear. The most rapid progress occurs when the observer is free to modify tests even as they are being run—perhaps through assigning others to carry out new tests as they come to be suggested out of current work. The research design ought to contain provision for sequential tests to accomodate to one's expanding ideas as research progresses.

3 A one-to-one relationship between concept and test is inefficient.
Because a test is cumbersome and difficult (in many cases), it is not practicable to furnish experimental proof for each set of hypotheses used in building a theory. In place of the simplified sequence of theory-hypothesis-test-refined theory one needs a chain of interlinked hypotheses which can be tested as a totality in a crucial experiment. Even better, one would like to have "strong inference" to design tests which will discriminate between several mutually exclusive chains of interlocked hypotheses.[1] In this model, thinking takes higher priority: one postpones "tests" until one has worked out a number of alternative launch pads to operate from; and, once begun, each successive test in the sequence must discriminate between several alternatives.

4 The model restricts observation to the test phase.
It assumes that the place and time for observation coincide with the test itself. But this ignores the observations which lead to the refinement and operationalizing of the initial hypotheses: it presupposes that the investigator has considerable prior information available to him, either from his own experience or from the storehouse of an already developed tradition. In the opening of a new field on which there is no preliminary information, one's techniques for arriving at hypotheses become more important, and one requires initial observation before framing operational tests. The paradigm then becomes one of general test -- operationalized hypotheses -- crucial test. In which case methods for deriving applicable hypotheses become of equal importance to those for testing hypotheses.

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[1] J.R. Platt, 1964, p. 347.

Points on this order—and there are many more—have turned natural scientists to the question of _efficiency_ in the research process. Which combination of techniques are optimal for which purposes under what circumstances? The scientist is also a person. And, as such, there are definite constraints to what he can give to a research situation. Furthermore, these constraints are operative throughout the research process. Consequently the "climate" of research at each stage may be just as important as its "design" in influencing the outcome. Methodology becomes relevant to all stages in the process, and different situations dictate different research paradigms. We do not abandon the need for proofs, but we recognize that they may come at different junctures within the sequence of events which evolve into a research tradition. Especially at those stages in research which require major inputs of creativity (which depends most directly upon a scientist's personality), one would expect to find a divergence between the methods useful for generating hypotheses and those suited to proving them.

Let us return to the problem of social survey design. Standard texts contain no hint of the kinds of complications referred to above, which are of concern currently in the natural sciences. The stages in survey design seem to be clear cut; they stem directly from the aforementioned ideal for natural science experiments. We will examine two examples briefly. The first comes from Hyman's _Survey Design and Analysis_,[1]

1 Has a Problem	CONSUMER	7 Selects course of Action to Solve Problem
Communicates Problem		Communicates Treated Data & Answer
2 Operational Translation Designs Research Formulates Problem	AGENCY	6 Selects an Answer Treatment of Data
Training & Supervision		Transmits Data
3 Moves into Environment With Respondent	INTERVIEWER	Records Response 5
Produces Stimulant	4 RESPONDENT	Responds

Or consider the ten stages in small-scale surveys given by Morris:[2]

(1) The general problem to be studied,
(2) A review of previous work on the problem, which permits it to be stated more definitely,
(3) Questions or hypotheses guiding the survey,
(4) The selection of suitable techniques of investigation,
(5) The selection of the people to be surveyed. . .
(6) Testing of the survey techniques in a 'pilot survey' or trial run,
(7) The collection of information,
(8) The preparation of this information so that the initial questions may be answered or the hypotheses tested,
(9) The interpretation of the survey findings,
(10) The writing of the survey report.

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[1] Slightly modified from horizontal to vertical format, p. 45.

[2] In, Humphrey & Argyle, eds., 1962, pp. 181 - 203.

At first glance either outline appears to be an admirable guide for the ideal research project. Cetainly, this kind of model has come into vogue with the research foundations and overseas agencies in their consideration of research applications. But is it a realistic model for East African conditions, however relevant elsewhere?

To my knowledge there have been two large-scale rural surveys on social life within East Africa in recent years.[1] The first, a "Culture and Ecology in East Africa Project," was carried out under the direction of the anthropologist Walter Goldschmidt from the University of California at Los Angeles. The project had very substantial backing from the National Science Foundation in the USA; its goals were to trace the impact upon religious beliefs and structure of the change over from pastoral to agricultural ways of life in a select sample of East African societies. The project was distinctive—at its initial stages, in any case—by its ambitious attempt to set out a series of working hypotheses relating subsistence patterns to religion. The final results of the project are, however, puzzling. The papers so far published contain little reference to the original hypotheses; and, in fact, one gains the distinct impression that it is hard to demonstrate any significant relationships between the specifics of subsistence and the minutiae of religious organization.[2] To date the project seems to be a classic case of a grand research design based upon theory which turned out to be of low explanatory power in the very region to which it was supposed to apply. This happens often enough in survey research, but it is embarrassing in a project that costs nearly a quarter of a million dollars and involves so many senior researchers.

The second project, an AID "Baseline Survey" carried out by H.L. Naylor and Marco Surveys in Kenya, is just nearing completion. Preliminary survey results are available in a recent EAISR Conference Paper, and in separate publication.[3] The survey was carried out in three locations of Kenya, on a total sample of 624 farm household heads. The goal of the survey was to establish a "baseline" of information on characteristics of rural life, covering as many parameters (physical, economic, educational, sociological) as possible. In many respects the survey is a model case study in the application of standard social survey design; it closely approximates the stages we have already presented.

Yet the results seem to be peculiarly une.ifying, considering the exemplary design used in their derivation. Results tended to be of the order of "More family heads with large cash incomes were more firm in their belief that they could borrow money from their county councils. . ." "More agricultural officers . . . visited the farmsteads of the more affluent farmers..." etc. The statements about relationships uncovered strike one as being valid—yet, at the same time, they are unproductive. They do not point to the underlying dynamics of social behaviour: rather, they present an impenetrable facade of descriptive attributes, somehow both true and yet misleading.

After reading the "Baseline Survey" results, I turned back to several standard descriptive surveys from the inter-war period in the USA and after. If one reads these with care, a similar phenomenon emerges. The descriptive generalizations are themselves the most bland part of the research report. In contrast, interspersed through the average report is a running commentary justifying certain questions and explaining unusual features in the final results. Stripped of its conjecture, the conventional descriptive survey is conceptually impoverished. Because both investigator and reader share the culture being investigated, the reader does not object to being lead

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[1] Not including several large-scale nutritional and economic surveys.

[2] Cf. Edgerton, 1964, and subsequent articles in the _American Anthropologist_.

[3] "A Baseline Survey of Factors Affecting Agricultural Development in Three Areas of Kenya," discussion paper for the January 1966 Conference.

down the primrose path so long as the departure is legitimized with the suitable protestations of "ifs" and "buts." To rationalize this interjection of conceptual complexity at the interstices of the report, the writer generally promises "further studies" on this or that point at some time in the vague future. At the extreme one find some sociologists---who had best go un-named at this juncture---whose facts are "all wrong" but who nevertheless contribute enormously productive ideas to the general dialogue.

I am, in fact, implying two things; and, by extrapolation, a third: (1) the best of one's operational hypotheses about an East African problem, derived from the literature alone, are apt to depart sufficiently from the realities "on the ground" to be useless for experimental design from afar; yet (2) valid descriptive generalizations derived locally, if divorced from their cultural context and from more powerful analytical theories, lose their research value no matter how soundly they are based. Thus, (3) either the East African situation contains special dangers which make the usual techniques less efficient, or the standard survey design is itself not self-sufficient in the stages it sets forth. In the two sections following I will suggest that both possibilities are true in part: field research in Africa does present special difficulties for survey design; but the design itself---as traditionally given---has certain inadequacies.

II

What are, then, the special characteristics of research in East Africa which might affect the administration and success of a social survey? (I speak here principally of research carried out by ex-patriates, whose stay in the country is determined by their research.)

1. The research time of the senior investigator is very expensive.
   It is expensive personally, in that the investigator in the field forsgos his normal professional advancement and contacts, his access to documentation and the recent literature in his field, and sometimes even at expense of his personal life with his family. It is expensive financially in overseas air tickets and the necessity of maintaining three bases of operation: one at "home", one at the foreign metropole, and one "in the field." The investigator may arrive already committed to a larger topic than he would have dared to adopt overseas--"The Economic Development of Uganda," for instance---whereas his research time is usually fixed in advance of his preliminary reconnaisance.

2. The investigator spends more time on non-research tasks.
   Paradoxically to the above, the organization of research in a strange country where logistics are difficult and secretarial help rare commits one to doing a great deal of the routine, non-research administration personally. There are weeks wasted in getting visas, letters of introduction, housing, transport, etc. which are seldom anticipated in the research design schedule. Hiring assistants only exacerbates the difficulties, since one must then provide them with the amenities as well.

3. The investigator cannot communicate directly with the objects of his study. The "language problem" applies to all short-term social surveys and research projects. Inevitably, the investigator must become dependent upon intermediaries for all his communication at the local level, save those with the educated elite. Most social situations become small group interactions between himself, his assistant(s), and "the people". He cannot rely upon chance communication to tell him when his assitants have misunderstood him, or to warn when someone is staging a reply. His role is continuously being affected by that of his intermediaries; where they err, he errs.

4   The investigator's role is always a dominant one in dealing with
    rural residents. The previous colonial and bureaucratic history
    of East Africa makes it unavoidable that the expatriate will be
    given a dominant role in most social interactions. The status is
    ascribed by race and tradition: there is nothing he can do to achieve
    a subservient or egalitarian position. Consequently, many of his
    initial social contacts outside of the elite will partake of the aura
    of patron-client relationships. The expatriates role automatically
    connotes colonial norms, the demands which were so long pressed by
    missionaries, settlers, and administrators for "standards," "proper
    behaviour," "service," etc. On a priori grounds, therefore, one can
    expect continuous distortion in all statements made by local people
    directly to the senior investigator.

5   The activity of intensive questioning is automatically suspect.
    People do not allow the stranger the role of asking many personal ques-
    tions. Most East African peoples (if not all) have traditional pro-
    verbs which warn against telling private family affairs to outsiders.
    Yet etiquette demands finesse in one's style of response to strangers,
    so that the one questioned would rather answer obliquely than with-
    draw into taciturn silence. In many areas questionning in the past
    has always been the prelude to some sort of governmental activity,
    often seemingly prejuidicial to local interests.

6   The investigator is more prone to think in polar categories.
    In his home society, the investigator intuitively corrects his per-
    eptions to accord with his prior knowledge of the parameters of roles
    and groups. At home, for instance, he would never take the opinion
    of a rural, retired "farmer" aged seventy-five, sitting on the back
    porch of a daughter's house, as representing "the American viewpoint."
    Overseas, however, he easily slips into thinking about "The BaGanda"
    or "The Kikuyu." He is likely to generalize particular incidents and
    opinions to the wrong social categories--either to a molar type "The
    People," or else to the social categories and roles of his own home
    society. He easily slips into a "we" - "they" categorization of all
    his experience which exaggerates the absolute differences in the phen-
    omena observed.

7   The objective characteristics of the population to be studied may be
    unknown. Many of the traditional techniques of research require know-
    ledge in advance of the size of the universe in various social cate-
    gories, and some general descriptive information on group character-
    istics. For many East African peoples, such information is simply not
    available. The traditional survey design becomes an all-or-nothing
    proposition: either it furnishes all the required data internal to its
    own compass, or it is not worth conducting in the first instance. Any
    research design which depends upon the matching of individuals or
    groups as its means of "control" will involve enormous field difficulty.

8   The investigator discovers the relevance of theory to interesting local
    features in the terminal phases of his research. The published liter-
    ature is sufficiently "out of tune" with local realities that few of
    the problems which seemed so promising from overseas materialize as
    valid research topics. Instead, one is likely to uncover his best
    "leads" in the final months after he has learned the language and people
    have come to trust him enough to reveal their more intimate lives. The
    investigator commonly finds he learns more of consequence in the final
    three months of a research period than he learned in the preliminary
    fifteen. The marked threshold in gaining access to confidence will
    often outmode much of what one has thought to be true previously; it
    will render "dated" most preliminary survey questionning.

9   Supervision of assistants in any number becomes a full-time job.
    The various logistic and training problems connected with the use
    of untrained assistants require full-time supervision if what they
    are doing is of any magnitude. Such supervision has high "opportunity
    costs," in that it is given at expense of additional time spent in
    learning the language, etc.

10 Lack of opportunity for secondary analysis.
    By convention, individual social science researchers have usually
    taken their "data" with them at the close of their field research. No
    further record in detail exist locally as to what they have done, to
    facilitate contacts by other researchers working on similar topics in
    the future. Nor are they obligated to send back the final reporting
    on their research, often in the form of a doctoral dissertation. In
    practice, this means that one cannot carry out secondary analysis of
    any type: each research project must begin de novo with its own field
    data. In sharp contrast to research in the natural sciences, the
    social science field research cannot become cummulative, because so
    little of the necessary material is published in final form.

11 Field Research is personally exhausting.
    Going "on safari" can easily become a full-time activity in of itself.
    The various components of field work—frequent travel, constant social
    interaction with strangers in an unfamiliar cultural context, the work
    of keeping adequate records and complete accounts, the administration
    of assistants—all require major inputs of energy. The methods them-
    selves tend to preclude time spent in refining one's concepts and in-
    sights while in the field. The investigator may discover that he
    "gets rusty" in his grasp of overall concepts while in the field, that
    he requires additional time taken in a different environment to let
    him think about his materials.

The foregoing remarks, of course, apply with equal force to any type of
field research. They are not confined merely to conducting social surveys.
The administering of social surveys, however, has in addition its own special
problems. These arise out of the initial stages in survey organization for
which we do not have an explicit methodology comparable to that available for
the actual "running" of the survey "in the field." The difficulties are:

12 The researcher must define the problem for the Agency 'Consumer' and
    "sell" the need for his particular piece of research. The fact re-
    mains that Government rarely wants outside advice and investigation
    of areas in which it has a large commitment and uncertain chances for
    success. Contrary to the model, the 'Consumer'—in countries where
    most developmental activity is centrally initiated—rarely comes beg-
    ging with research projects to be done. The researcher, to the con-
    trary, must evolve his own estimate of what problems are actually
    crucial to Government. Then he must spend a great deal of time and
    energy trying to convince his 'consumer' that the project is vital
    enough to be worth granting the permission and assistance required.
    The researcher is faced with a continuing public relations job with
    his potential client, the Government, as well as with the public.

13 Almost any topic of research requires a major 'information retrieval'
    research effort merely to assemble the necessary preliminary descrip-
    tive information. The literature search phase of survey research—
    necessary before one can frame "working hypotheses" is itself likely
    to require an entire research project. The researcher finds that he
    cannot rely upon the published material; he must become a contemporary
    historian, and synthesis an over-view from the files of the various
    government departments whose activities impinge upon his topic. This

'preliminary stage' may actually take up several months of work in the archives and in government offices. The amount of time required poses a major dilemma: if it is done initially, the investigator will have to sacrifice much of his efficiency in the language; if postponed, his trial hypothesis formulations will be imprecise and his sampling strategy uncertain. Yet this 'research' is itself very pedantic and unexciting, even though "getting access" to the files is one of the more difficult feats in gaining governmental cooperation.

14 The derivation of hypotheses requires its own research methodology. The methods which serve to validate hypotheses are almost directly anti-thetical to those which are most efficient for deriving them in the first place. The derivation is itself a much more difficult task where one lacks background information and where the cultural context is different from one's own. The traditional model for survey design may tell how to "operationalize" concepts, but it does not tell how to derive them in the first place. It is assumed that they "flow" from one's acquaintance with local circumstances and with general theory. In strange circumstances, to the contrary, one finds that it is hard to go beyond "commonsense" description: the leap from a livestock ranching scheme or a coffee co-operative to "theory" is a difficult one indeed. One soon comes to appreciate that techniques for deriving relevant concepts rapidly are a most important part of one's research methodology.

15 Most survey measures will be entirely unfamiliar to interviewers and respondents alike. In Western countries, one usually worries about "test sophistication" affecting survey results; here, one must worry about the other extreme. Many types of measures whose overall configuration is familiar overseas may give difficulties when administered locally. This is especially true of tests which require instruction concerning the registering of a response: i.e., through ranking (indicate 1st, 2nd, 3rd choices), ladders (place yourself on the following scale), or other such response devices. Even the simple choice of "checks" versus "ticks" to indicate a positive choice may cause difficulties. Consequently, each measure to be used in a study requires pre-testing and revision, sometimes for each area in which it is to be given. The effect is to further lengthen the time required in setting up and in scoring a survey: operations which would be routine overseas require skilled attention at all phases here.

The foregoing difficulties are not unique to Africa, but they do make social survey research a very difficult proposition in any non-Western nation. They underlie the social anthropologist's traditional reliance upon participant observation techniques. Contrast, for example, the usual stages in an anthropologist's research with those already given as model for surveys:

1 Studies General Theory	2 Reads up on files, etc.	3 Makes friends Learns language	4 Chooses rough topics	5 Observes & records
Home University	Metropole	In the Field		

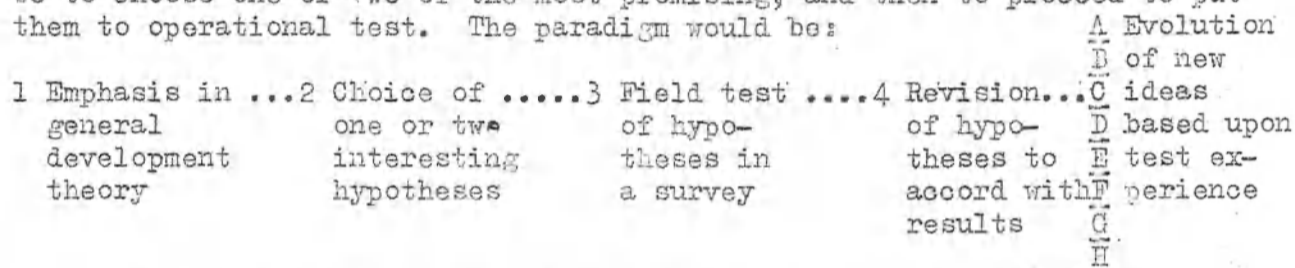6 Refines Concepts & Writes Up

7 Sends back copies of his book

From the standpoint of proving ideas, the anthropologist's path is little better than a rake's progress. From the standpoint of finding ideas, however, it would be hard to improve upon.

In summary, I would suggest that the social survey researcher serves as his own anthropologist when he is studying his own culture. The incompleteness of social survey methods does not fully appear until one exports them from out of their accustomed institutional and academic context into a foreign environment. To use them efficiently overseas, one must combine them with other methods which are presupposed in their home context.

Furthermore, I would suggest that the survey techniques needed to find
ideas are often irreconcilable with those needed to test ideas. The ten-
sion between these two conflicting goals lies behind many of the hardest
choices in research design which tries to accomplish both simultaneously.

For example, what use should be made of general, "world-wide" hypotheses
in an investigation into a new region? Let us use for our exercise the prob-
lem with which this paper is concerned, the factors leading to the emergence
of progressive farming in East Africa. There is no shortage of generaliza-
tions derived from other areas which might apply to the topic here. Beers
has published a list of thirty-eight "principles of technical assistance
action" which might be responsible for the success of governmental programs.[1]
Rogers has evolved fifty-two similar hypotheses about the diffusion of
innovations in rural society; Batten gives twenty-seven "summary conclusions"
about what makes an extension worker effective, and so the list grows.[2]
All of these ideas might turn out to have significance in the East African
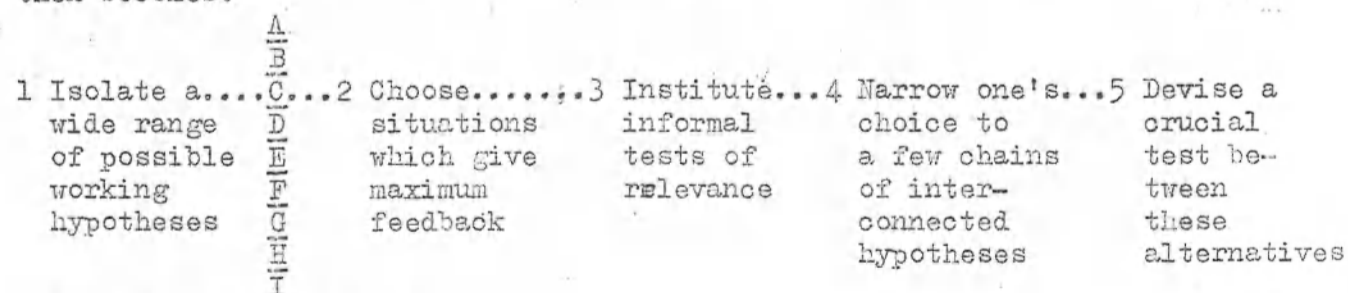situation, but it is hard to say ex post facto which ones.

The traditional survey design would indicate that proper procedure would
be to choose one or two of the most promising, and then to proceed to put
them to operational test. The paradigm would be:

1 Emphasis in	...2 Choice of	.....3 Field test	....4 Revision...	A Evolution
general	one or two	of hypo-	of hypo-	B of new
development	interesting	theses in	theses to	C ideas
theory	hypotheses	a survey	accord with	D based upon
			results	E test ex-
				F perience
				G
				H

One moves from the limited, working hypotheses, to the more general ideas
which grow out of the research experience, and so theory advances. Because
surveys are expensive to organize and controls difficult to attain, one must
always begin with the limited objectives of working with only a few initial
ideas.

For our situation, this design carries with it grave risk that the few
hypotheses chosen for testing will turn out to have a low order of significance.
Certainly, the traditional procedure offers no systematic ways of narrowing
one's risks of studying irrelevant phenomena: relevance grows out of the
crucial test itself.

In actuality, most researchers follow a reverse pattern. They know that
their own time and funds are in scarce supply, and that a definitive experi-
mental test is expensive of both. Significant results are more likely to
flow from a wise choice of the variables tested than they are from the mani-
pulation of data after a test has been run. The rational priority in the
field situation is to maximize one's feedback of information on all points
which are possibly relevant to the final problem. The general hypotheses
becomes points of departure for examining the society, rather than vice-versa.
One uses them as tools to discover areas of potential significance: positive
feedback serves as its own test of their relevance. The research paradigm
then becomes:

| | A | | | |
| | B | | | |
1 Isolate a	...C...2 Choose	.......3 Institute	...4 Narrow one's	...5 Devise a
wide range	D situations	informal	choice to	crucial
of possible	E which give	tests of	a few chains	test be-
working	F maximum	relevance	of inter-	tween
hypotheses	G feedback		connected	these
	H		hypotheses	alternatives
	I			

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[1] Howard W. Beers, 1964, pp. 74 - 83.

[2] Rogers, 1962, pp. 311 - 315; Batten, 1965, pp. 182 - 184.

There are many other ways in which research oriented towards conceptual enrichment differs from that which tries to assess conceptual validity. Below is a partial list of differences which appear in one's field behaviour:

A. Research to Find Ideas	B. Research to Test Ideas
1 Use friends heavily for getting as much information as possible in a limited amount of time.	1 Avoid relying upon friends, who will bias the representativeness of one's sample.
2 Take assistant's ideas seriously as valuable indicators on topics close to one's own perception.	2 Test assitant's views carefully before acceptance to control for special interest.
3 Rely upon known & accepted roles in local community to increase one's immediate entree.	3 Cultivate a detached, neutral role which will not bias reception of research data.
4 Provide definite services to those who co-operate in order to increase social interaction.	4 Remain outside the social system being studied.
5 Concentrate upon learning the language to increase one's access into people's symbolic culture.	5 Concentrate upon one's observation of social behaviour to check upon the respondent's claims.
6 Compare widely contrasting areas to reveal to oneself his own underlying assumptions and "blind spots".	6 Compare areas which are alike in all essential points except for the one independent variable in the test.

In summary, then, the research plan given in the pages following rests upon the premise that different methodological technqiues are appropriate to the different stages in the development of a sustained inquiry. Social survey methods are useful primarily at the beginning and end stages of an inquiry. At the beginning, they will indicate the general characteristics of the population being studied. At this juncture the survey supplies "background data" with sufficient quantification to be useful for later correlation tests. The preliminary social survey should not attempt to give a definitive test of a few variables: it should encompass as many different and diverging lines of information as one can practicably include. Along with the preliminary survey one should employ historical techniques for "information retrieval"—the analysis of files and past records in the locality to be studied. The researcher should also assemble a battery of possible generalizations on as many relevant topics as he can.

In the intevening stages of research, the concentration should be upon access to information and the elabouration of conceptual richness in one's working hypotheses. Here the social anthropologist's techniques of field work come into their heyday: the important constraint is now time. Every contact should be used to the fullest, and one responds to opportunities rather than to design. The researcher finds the method of "strong inference" —based upon informal tests between alternative hypotheses—his most valuable aid to narrowing down the field of inquiry. When he has been able to construct two or three inter-locked chains of hypotheses relevant to the solution of his particular research problem, he is then ready to design a more formal test.

The last phase in field research can again be comprised of a social survey, perhaps combined with a re-analysis of one's preliminary survey results. Here all of the formal requirements of test sampling come into play, and one is again concerned primarily with providing experimental controls for all generalizations made. The survey test gives the researcher his final "data" to take home with him and process in the interval until he receives his next research grant.

Procedural Modifications Suggested for
Social Survey Design

1 Offer explicit services to farmers who co-operate with the
study: farm plans, photographs, beer, technical advice, etc.

2 Define study locally in such a way that it is clearly under-
stood in relationship to some previous activities. Test various
"tags" for naming the study with local informants. Derive the
stated goals in consultation with local officials.

3 Work in circumstances where one's own role is already understood,
at least where-ever one intends to get data without preliminary
preparation through local residence.

4 Search out assistants who are willing to give negative feedback,
who are ruthless in exposing false generalizations.

5 Make maximum use of students who already know the language and
yet whose general level of education is sufficient for them to
be entrusted with considerable responsibility. Use such indivi-
duals as both informants and assistants.

6 Do not try to carry on one's own field research and supervise an
ennumeration team simultaneously; while carrying on ennumeration,
concentrate upon recording the ennumerator's impressions and
providing him with as wide an experience as possible.

7 Where possible use students in their home locations, but rotate
them with outsiders in the ennumeration to give checks upon the
qualify of their data.

8 Work intensively with ennumerators in the period after the survey
data collection is complete, to record all of their various
observations. Hold joint seminars of ennumerators to compare
opinions and gain group validation for individual impressions.

9 Rotate one's own areas of intensive field work to provide controlled
contrasts on different items, and remain sensitive to looking for
differences between areas.

10 Use the technique of "strong inference" to force oneself to think
constantly of alternative explanations for social phenomena, and
thus to improve one's own field observations.

11 Choose areas for intensive surveying where preliminary ethnographies
and community studies of high quality already exist.

12 Use working hypotheses as tools to guide one's preliminary inter-
views, but let opportunity determine the sequence.

13 Commission specialized studies after the completion of a large-
scale social survey, to investigate systematically the variables
which are indicated as being important.

14 Set aside regular "re-think" perids, immediately following separate
data-recording periods, so that one moves regularly from observation
to recording to re-conceptualization. Do not try to mix observation-
al periods indiscriminately with those set aside for recording and
thinking.

15 Make maximum use of one's own short-term memory retention by working
across topical fields while on field research, to enable one to
discover functional associations between different classes of phen-
omena.

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The Kenya Farm Innovation Study

Purpose

The survey here proposed would have as its practical purpose the gathering of background information on all aspects of rural life which might have a bearing upon farmers' nutritional welfare and their acceptance of technical advice. Within these two large areas of farm activity, the emphasis will be upon the isolation and analysis of factors which lead to farm innovation. A subsidiary purpose will be to train agricultural students and departmental staff in the techniques of applied nutritional and social research.

Sponsorship

The survey is being organized as the first major research project of the UNICEF sponsored Rural Extension Unit within the Faculty of Agriculture, Makerere University College, University of East Africa. In addition to the initial support of UNICEF, FAO, and the University of East Africa, affiliation will be sought for the project with the East African Academy and with the respective departments of Government with which work will be carried out in the field. Funds will be sought to be able to affiliate a number of related research projects to the larger survey; these projects would be sponsored through the respective national research Institutes of the University of East Africa.

Research Personnel

The survey will be carried out under the direction of the Lecturers in Rural Extension and Rural Sociology of the Faculty of Agriculture, Makerere University College. They will work under the advise of the relevant departmental heads in sociology and agricultural economics, and also in communication with the research directors of the relevant institutes. It is hoped that field training can be given to eight second year Makerere College students, from the faculty of agriculture, and also to a larger number of Agricultural Training Center students at Embu. Negotiations are underway to bring into association with the survey two medical doctors (one a specialist in child nutrition), a lecturer in education, a Professor of Geography and a Professor of Economics. These individuals would have some student help in addition to the personnel hired under the Project itself. At different times the project will entail keeping between ten and forty individuals in the field, but large numbers of these would be students already in residence locally.

Research Schedule

The period of initial planning and organization of the survey commenced in December of 1965. It is anticipated that field work will begin in mid-February, survey training and pre-tests in March, preliminary surveys in April, extended surveys in May and June, and intensive community studies in July through September. The period of large-scale activity will last for six months, with data processing continuing through the subsequent year.

Theoretical Relevance

The results of this inquiry should allow us to compare the effects of "proximate factors" vs. "conditioning factors" in leading to increased levels of farm family welfare. We will also be able to compare the differential strategies best suited to the development of both high potential and low potential areas. The information should be of great use to all three East African governments in their choice of development policies. The material gathered on the dynamics of farm innovation will be able to test a large number of generalizations derived from experience elsewhere in the tropics. This will be the first such test undertaken in East Africa, and it should yield results closely comparable to a similar study being initiated under the Economic Development Institute of the University of Nigeria.

PLAN OF FIELD OPERATIONS

Time:	Operation:	Personnel:	Type of Data:
DECEMBER	1 Preliminary interviews in Embu	Watts & Moris	
JANUARY	2 Obtain legitimacy from Nairobi	Moris, through Faculty of Agriculture	
	3 Collect background data from documents, files, etc.	Moris & Watts	
FEBRUARY	4 Set up file headings	Moris	Vertical File begun
	5 Design of protocols, recruit student ennumerators	Moris & Watts	
MARCH	6 Get local introductions in Embu Chiefs, D.C., Heads Depts., etc.	Moris & Watts	
	7 Pre-test preliminary interviews	Moris & Watts	
	8 Choose broad sampling areas	Moris & Watts	
APRIL	9 One week's training for jr. ennumerators, position sr. ennumerators	Watts Moris	
	10 Initiate Preliminary Survey	Watts, 20 students Moris, 8 students	(1) Farm Profile (2) Index of Farm Change
	11 Initiate parallel studies of water usuage, school leavers, marketing, & nutrition	White, Anderson, Alvis, et. al.	
MAY	12 Conference of ennumerators	Moris	(3) Ennumerator ratings of each locality
	13 Placement of Sr. ennumerators at new locations for special projects	Moris	(4) Ennumerator ratings of farm variation
	14 Rotate visits between areas, rotate days on farm visits, record impressions	Moris	(5) Special Project Protocols
JUNE	15 Same as above, completion of special projects		(6) Farm Visit Contrasts
	16 Recording of Ennumerators overall impressions, reliability checks between records of different ennumerators	Moris & Watts	(7) Sr. Ennum. ratings, special projects
	17 Study of Institutional Factors in Extension	Watts	(8) Descriptive Outlines
	18 Initiate Farm Family Nutrition visits	Dr. Watts	(9) Health Records
JULY	19 Beginning of intensive community study, background interviews	Moris	(10) Field Data on three areas
	20 Intensive Investigation of Local Extension Organization	Watts	
AUGUST	Continuation of the above	Watts, Dr. Watts, Moris	
SEPTEMBER	21 Comparative interviews with Tea-Outgrowers & Ennumerators, Kiambu Perhaps also Kisii & Kericho.	Moris	(11) Comparative farm profiles
OCTOBER	Begin Processing of Data.................Moris & Watts		

VARIABLES

The project will concern itself with two dependent variables, which are probably related to one another but which must be kept separate in the design of research. These variables will be studied in the context of the behaviour of farms _as units_. The first is the attribute of innovativeness, and the second the attribute of nutritional well-being.

We are considering a number of alternative ways of dealing with farm innovation. Most of them involve a categorization of farmers at the two extremes into separate samples of "innovators" and "rejectors". The innovators might be designated on _a priori_ grounds as those who are taking up new crops which are currently being introduced into the area—tea in the upper ecological zones, and cotton in the lower. Alternatively, we have considered drawing a sample from those farms which have been offered to the department for farm planning. The "rejectors" are more difficult to isolate. Perhaps the "chain" method can be used, whereby the least progressive neighbour of each "innovator" will be entered in the sample—assuming that proximity has furnished occasion for communication about innovations which have been rejected by a given family.

There is no advance information by which we can identify farm families which have good and bad nutrition, respectively: we will have to draw our samples from areas which are sure to furnish some of each. So far we intend to stratify our sample according to ecological zones, access to transportation, nearness to political centers, and subjection to land consolidation. The sample design is still under consideration, and obviously involves issues of great complexity.

The independent variables which we are particularly anxious to control for are the following:

1 Previous access to education.

2 Ecological potential of farm environment.

3 Different types of farming systems within one culture.

4 Cultural variation.

5 Income levels.

6 Administrative history of past development efforts.

7 Access to markets and transportation.

8 Family structure.

9 Command of resources.

10 Institutions of production organization.

11 Intensity of agricultural technical services.

12 Ideology re: aspirations, expectations, etc.

13 Diversity of Farm enterprises.

14 Traditions of wealth & poverty.

15 Membership in elite groups vs. traditional groups.

Almost certainly many of these variables are inter-related, and one of the main tasks of data analysis will be to discover and elucidate these relationships.

We would welcome additional assistance in drawing up a sampling design to control for as many of these variables as possible. The location of the survey area, in Embu, makes many types of control available.