

SURVEY MANUAL FOR COMPREHENSIVE URBAN PLANNING

The Use of Opinion Surveys and  
Sampling Techniques in the Planning Process

by

Jerome R. Saroff

and

Alberta Z. Levitan

Development Research Associates, Inc.  
Anchorage, Alaska 99501

Institute of Social, Economic and Government Research  
University of Alaska  
College, Alaska 99701

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## ABSTRACT

This study examines the applications of scientific public opinion and survey sampling techniques to comprehensive planning and other urban planning programs.

The survey manual deals with two major elements: a case study in Providence, Rhode Island, which illustrates the process of conducting a survey and the kinds of findings and results which may be obtained; and a methodology section which focuses on the techniques and methods used in survey research. Research design, survey methodology, organization of data collection, the plan for data processing and preparation of the final report are discussed.

Scientific survey sampling is shown to be a useful instrument for obtaining information on a variety of urban problems, including opinions on quality of public facilities, reasons for moving, support for Urban Renewal and Model Cities programs, and evaluation of social welfare programs.



SUMMARY OF  
SURVEY MANUAL FOR COMPREHENSIVE URBAN PLANNING

The Survey Manual for Comprehensive Urban Planning was prepared by Jerome R. Saroff, Development Research Associates, Inc., Anchorage, Alaska, and Alberta Z. Levitan under contract to the Institute of Social, Economic and Government Research, University of Alaska, College, Alaska.

A wide variety of opinion surveys and survey techniques have been developed by the social sciences. This project illustrates the application of certain survey techniques to comprehensive urban planning practice. The Survey Manual for Comprehensive Urban Planning is based upon the experience of the authors in conducting an opinion survey in Providence, Rhode Island, when they were on the staff of the Providence City Plan Department. The study attempts to demonstrate the application and usefulness of scientific survey sampling techniques by discussing the findings of the Providence survey and illustrating the process of conducting such a survey. The utility of scientific survey sampling techniques is discussed in relation to the needs and problems of comprehensive planning and other urban planning programs.

The case study of Providence, Rhode Island, is used to give a practical example of the "real life" results of using survey sampling techniques in an urban area with problems and characteristics similar to those in many other parts of the country. The case study section presents both examples of actual findings and results from the Providence survey and a narrative of the process involved in organizing, conducting, and interpreting the results of the survey. Based upon the authors' experiences,

the practical considerations of defining the problem, selecting the most appropriate survey technique, construction of the questionnaire, training and supervision of interviewers, data processing and analysis are described.

The findings of the survey and the process involved in conducting a successful survey show how the comprehensive urban planner may obtain from the public-at-large information relevant to planning programs, on topics ranging from simple opinions of public facilities and services to more complex questions, such as reasons for out-migration, the "image of the suburbs," or ideas about urban renewal.

The second section of the survey manual, survey methodology, covers the theoretical and conceptual basis of survey sampling. The survey manual section on methodology is a step-by-step description of how to conduct an opinion survey, beginning with definition of the problem, selection of appropriate questions and interviewing techniques, training of interviewers, pretesting, selection of sample, and some simple statistical tests of significance. Specific alternative questions and batteries of questions illustrate various methods of designing the questions and constructing the questionnaire and also indicate the assets and liabilities of various approaches. The advantages and disadvantages of utilizing multiple-choice, closed-end questions versus the open-end questionnaire technique are discussed and evaluated. The most appropriate use for each of these techniques is indicated, using actual practical planning problems and situations as illustrations. Methods of analyzing the information, including precoding, coding, and use of data processing techniques are also discussed.

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## GENERAL INTRODUCTION

The planning process begins with an analysis of existing conditions. The comprehensive urban planner wants to know what "is" before he decides what "should be." Traditionally, land use, population, and economic base surveys have been the three basic components of this analysis contained in comprehensive plans.

Planners have in the past used a variety of "survey" techniques in order to assess the physical characteristics of an area. For example, the "windshield survey" is often used as the basis for mapping types of land use or the general quality of housing in an area possibly slated for urban renewal. This type of survey gets at the gross features of the environment, but often there is no clear definition of the categories of observation nor any systematic exploration of those significant features which may go unnoticed in these circumstances.<sup>1</sup>

It is our contention that the planner does not really know what "is" if he fails to include, also, a systematic survey of public reactions<sup>2</sup> to the existing physical environment. The usefulness of a systematic survey of public reactions is not limited to the existing physical environment.

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<sup>1</sup>See Herbert J. Gans, The Urban Villagers (Glencoe, Illinois: Free Press, 1962). How can you get information on interior upkeep or neighborhood cohesion from the windshield survey?

<sup>2</sup>In practice, the distinction between attitude and opinion is not well defined and the terms are often used interchangeably. However, the literature of public opinion distinguishes between them. Attitude is considered to be the precursor of opinion. Thus, attitudes are diffuse and unfocused "background" reactions and responses; opinions are more well defined reactions to specific situations or events.

For example, the "Model Cities" program is oriented in the direction of surveying public reactions to a variety of factors. Such surveys are useful to planners in urban renewal and functional planning, etc., where it is desirable to ascertain public evaluation and opinion of programs from either the general public or the groups and individuals directly affected.

At present, planners seem to be well aware of the need for citizen participation at the later stages in the planning process. This participation may involve evaluation of alternative proposals and implementation of the final plan. We would argue, however, that this ultimate act of decision-making (such as choice of a specific land use plan) is not soundly based without a systematic survey of public reaction to the existing environment.

The reason for this social survey can be given in terms of the ultimate objective of "planning for people." It implies that the more information we have about people's actual requirements, the more adequately we can satisfy them.

One of the values of such a survey is that we can get reactions to the environment from the people themselves. (Intermediaries such as politicians, or social workers may also be valuable sources of information.) This polling function of the survey is important when we view planning as part of the ongoing political process. It means that the social survey offers comprehensive planners a direct means of communication with their "constituents."

The kind of survey technique we are suggesting is the "sample survey" as developed most extensively in recent years by psychologists, sociologists,

and political scientists.<sup>1</sup> This is a general method for the collection and analysis of social data which permits their immediate application to some of the more complex problems of comprehensive urban planning while offering the basis for some form of long-range "data bank." The important feature of sample survey research is that it provides the means to gather and analyze relevant information in an efficient, systematic way.<sup>2</sup> Secondly, if sampling is based on the principle of random choice, it allows for an accurate measurement of the "error" inherent in the data-gathering process.

In any client-oriented practice of planning, it is essential to possess adequate information concerning the preferences and desires of clients. If, in a social survey, the public offers little or no political support for certain aspects of the comprehensive plan, then these projects can be changed before there has been any great investment in time and resources, or the planner may map a program of public information and education to build support for the project.

Not only does the planner receive responses from his "constituents" in this way, he also gives a great deal of information out to them. This educational function of the social survey can be a channel for creating and reinforcing public interest in the problems of the urban environment.

The social survey provides a unique tool for gathering a variety of raw material necessary in the planning process. What the planner does

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<sup>1</sup>A short history of the origins of survey research appears in Mildred Parten, Surveys, Polls and Samples (New York: Harper, 1950), Chap. 1.

<sup>2</sup>A concise outline of different types of surveys may be found in Claire Selltitz, Marie Jahoda, Morton Deutsch and Stuart Cook, Research Methods in Social Relations (New York: Holt, Rinehart and Winston, 1959), Chaps. 3 and 4, especially pp. 50-51.

with this substantive information depends, naturally, on whether he views planning as an exercise in rational analysis, aesthetic design, problem-solving, or decision-making.<sup>1</sup> But whatever the approach, survey techniques offer a systematic means for getting at patterns of activity, needs and attitudes of the population in any given planning area. These are the data which play an increasingly significant part in the planning of a democratic society.

The main thrust of the study is that planners would do well to utilize the social survey extensively in the planning process, be it functional planning for specific facilities, physical planning, advocate planning or in renewal or Model Cities programs. It is also essential that the planner play a key role in definition of the problems to be surveyed and in decisions about substantive material to be covered. Although consultants are often desirable and sometimes essential in the production of high-quality social surveys, the planner's viewpoint and the planner's need for particular kinds of information related to his duties and goals should be a central consideration in preparing the survey.

This manual covers two major topics: (1) the case study of a social survey<sup>2</sup> in Providence, Rhode Island, and (2) an outline of the methods which must be employed in any such survey.

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<sup>1</sup>There are countless books and articles on this issue. See, for example: R. Hoover, "A View of Ethics and Planning," Journal of the American Institute of Planners, November 1961, pp. 293-304; Martin Myerson and Edward Banfield, Politics, Planning and the Public Interest (Glencoe, Illinois: Free Press, 1955); see especially "Notes on a Conceptual Scheme"; and John Seeley, "What is Planning? Definition and Strategy," Journal of the American Institute of Planners, May 1962, pp. 91-97.

<sup>2</sup>At the time of the survey the authors were full-time staff members, principal planner and associate planner, respectively, of the Providence City Plan Department.

The City of Providence, Rhode Island, is used to illustrate the process of conducting a social survey, its applicability and usefulness to other areas.

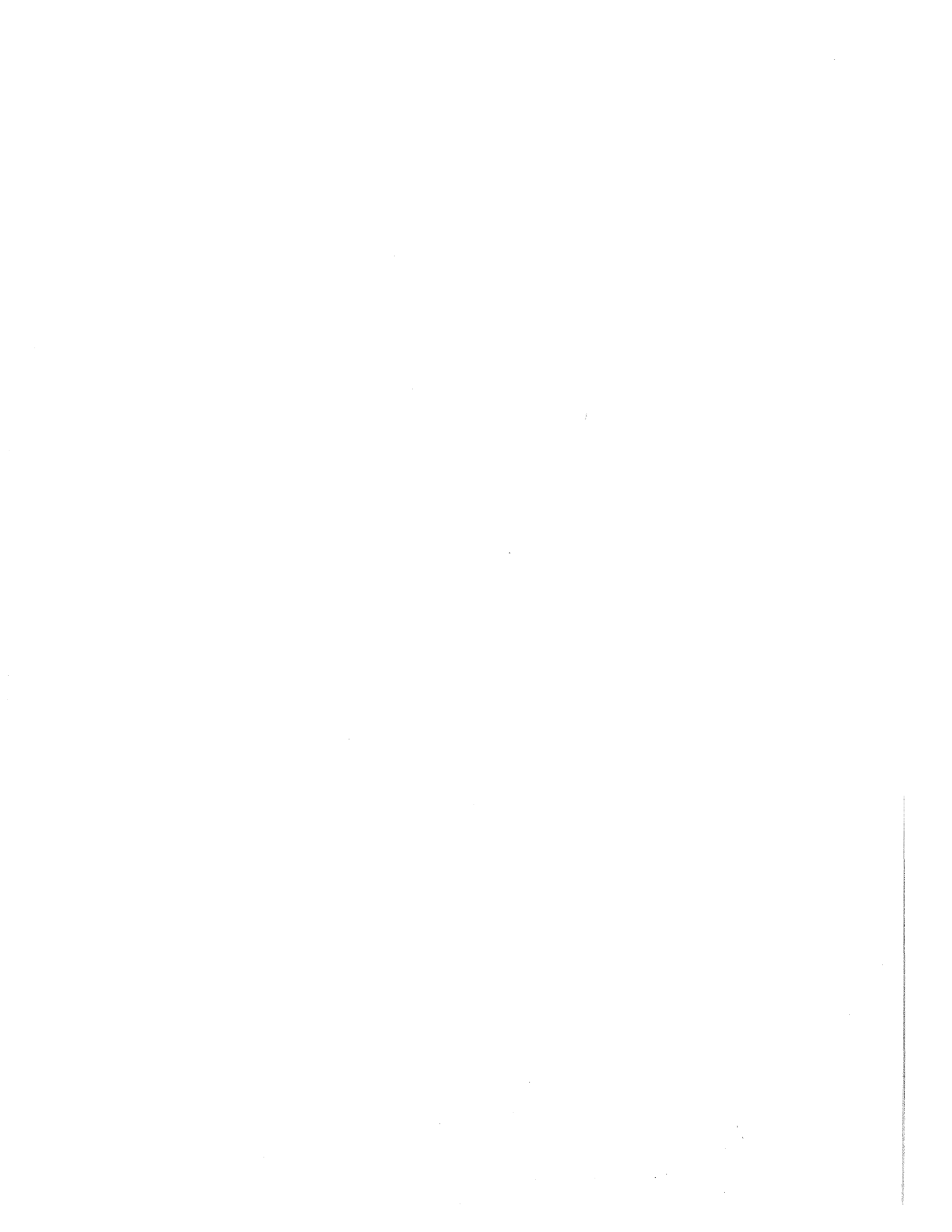




PART ONE

CASE STUDY: HOUSING AND ENVIRONMENT STUDY,

PROVIDENCE, RHODE ISLAND



## CHAPTER I: BACKGROUND OF THE STUDY

Like many New England cities, Providence is characterized by an old physical plant and relatively little open land on which to build. Evidence of its early development can be seen in the prevalence of multi-family housing and consequent high population density. It is a middle-sized city in a middle-sized metropolitan area -- the class of city in which little research has been done.<sup>1</sup>

In addition, between 1950-60 Providence suffered one of the greatest (16.6%) population losses of any city in the country, and has continued to lose population at approximately the same rate to the present time. The distribution of this loss by age is of particular interest, for it includes fully one-third of all those in the age group 18 to 44 years.

Providence has long had one of the most active planning and renewal programs in the country, including several Demonstration Grants (Section 314 of the Housing Act of 1954). Although this active tradition of planning was open to certain innovative techniques, there were nevertheless major obstacles to the acceptance of a social survey. At first the survey and survey sampling techniques were questioned, and the notion of talking with a cross-section of city residents was perceived as a waste of time and money.

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<sup>1</sup>In Working Class Suburb (Berkeley, California: University of California Press, 1960), p. 92, Bennett Berger points out the localization of research around centers of research personnel and facilities, e.g., Chicago and New York. Along with Berger, we seriously question whether results from these areas can be identified as patterns which prevail throughout the country. The problem here is basically the "representativeness" of these populations whose reactions are most frequently sampled and analyzed.

Approval for the project was gained only after a period of active discussion and explanation of the potential significance of the information which could be gathered from this survey. And it required further discussion, debate, and argument within the planning department to win approval of a slim budget on which to conduct the survey.<sup>1</sup> Finally, the study was begun in February 1962, under the sponsorship of the Providence City Plan Department as one of the preparatory elements leading to a revision of the Land Use Master Plan.

### Objectives

Our survey was to be a preliminary, exploratory study. Therefore, it was more in the nature of a descriptive than an analytic survey. Thus, we had no overall hypotheses to prove or disprove. Our major objective was to discover people's perceptions of and reactions to those elements of the physical environment that we considered important from a comprehensive planning point of view. We wanted to find out what the Planning Department's "constituents" were thinking about their city.

In general, the majority of surveys done for comprehensive planning departments will be of this descriptive kind because there is so little

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<sup>1</sup>Our total cash budget was \$4000. Of this amount, \$500 was for the statistician, \$1500 for interviewers, and the remaining \$2000 for data processing.

Of the Planning Department staff, a total of five members were employed on the project from time to time. The total work time from beginning of the project to the write-up of results was twenty man-months. These were distributed as follows over the course of a year:

Principal Planner (Project Director)	6 MM
Associate Planner (Asst. Project Director)	9 MM
Draftsmen (3) (Coders)	5 MM
	<u>20 MM</u>

basic information currently available. But this initial survey can subsequently generate a series of studies "in depth" which explore specific items such as patterns of Negro migration or satisfaction and dissatisfaction with suburban living conditions. Then comprehensive planning can go on to the more analytic, explanatory surveys which tell why specific groups have particular preferences. These are refinements which presume a solid base of descriptive information on what exists now.

#### Substantive Areas of Inquiry

We were looking at the urban environment from the point of view of the comprehensive planner, and this helped focus our attention on five substantive areas:

1. Housing Types and Preferences
2. Neighborhood Qualities and Preferences
3. Reasons for Outmigration
4. Evaluation of Facilities and Services
5. Urban Renewal Knowledge and Experience.

This list contains much of the basic "stuff" with which planners are concerned: people's housing accommodations, neighborhood living conditions, opportunities for employment and recreation, adequacy of public services, and the future economic and physical development of the city.

There were four additional types of information obtained from every respondent:

1. Socio-Economic Background
2. Short-Range Migration History
3. Patterns and Extent of Social Interaction
4. Extent of Organizational Membership

These data from individual respondents were intended to provide us with an estimate of "who" were the people having the various kinds of attitudes and preferences. We wanted to know some concrete details about the background and behavior patterns of those segments of the public who were most or least interested in the five substantive areas mentioned above.

Looking back over the list of topics (after the survey had been completed), we came to realize that we had included entirely too much information in one interview schedule. We should have kept to a more restricted frame of inquiry. This was emphasized by the fact that interview time never ran under one hour and fifteen minutes for adequate, complete interview schedules.<sup>1</sup> We tried to accomplish too much in a single interview.

In our future research this urge to encompass all the important topics will have to be resisted. From the vantage point of a few years later it seems that housing, the neighborhood and migration might have been more than enough for us to have covered. As a result we recommend strongly a policy of cutting down on substantive areas in order to get more depth of detail in each area and reduce the length of the interview.

#### Empirical Dimensions

In order to structure the descriptive information and make sure we were covering key relationships, we set up three empirical dimensions to

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<sup>1</sup>And up to two hours or more for people who were articulate and well-informed respondents. Both interviewer and respondent had to have a strong sense of perseverance as well as enthusiasm in these cases.

guide our thinking.<sup>1</sup> These dimensions helped to slice "reality" into manageable and understandable proportions. They also helped us to attain a richer, fuller understanding of the complex urban phenomena we were investigating.

The three empirical dimensions which cut across the substantive areas were:

1. Physical -- Social
2. Push -- Pull
3. Functional -- Aesthetic.

Each of these dimensions obviously operates along a continuum. However, for analytic purposes they were effective means for structuring various questions, as well as coding and analyzing the distribution of responses.

What was characterized as "physical" were those aspects of the environment which have form, are visible, etc. This was in contrast to the "social" elements, which we tried to limit to those aspects dealing with, and dependent upon, social interaction.

Some examples of responses that were categorized as physical are: size of house ("this is the only type big enough for families");<sup>2</sup> location of community facilities ("there aren't enough parks and playgrounds

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<sup>1</sup>The empirical dimensions began to evolve from the time of initial questionnaire construction, but were selected finally only after a thorough perusal of the completed questionnaires and a look at the IBM print-outs. It is noted, however, that the survey was initially structured on the physical-social and functional-aesthetic dimensions. The push-pull dimension became apparent further along in the project after a considerable amount of data had been reviewed.

<sup>2</sup>These are actual quotes which typify responses to various open-end questions included in the interview schedule.

nearby"); improvement of the city ("tear down the old buildings").

Responses which we categorized as social are: desire for single-family house ("I can come and go as I please, with nobody to mind my business"); changes in the neighborhood ("there are too many Negroes moving in").

The "Push -- Pull" dimension<sup>1</sup> represents those factors which repel people from the city and/or those which attract them to an environment which they consider superior. What has been described as "push" responses reflect the negative characteristics of the city, while "pull" responses outline the positive, appealing features of another environment, such as the suburbs. For example, some respondents said, "the city is in dirty, disgraceful condition" (push), while others said "suburban areas are much nicer, healthier to live in" (pull).

The Functional -- Aesthetic dimension was relevant to questions of housing, neighborhood improvement, and city-wide improvement. Taking neighborhood improvement as an example: adequacy of play equipment and rush hour traffic filtering through the neighborhood were types of functional considerations. This was contrasted to the lack of landscaping on play areas or unsightly public telephone wires which were categorized as aesthetic factors.<sup>2</sup>

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<sup>1</sup>This dichotomy has been used in research on developing countries in order to describe the reasons for migration from rural to urban areas. "Push" refers to the lack of jobs or land for cultivation in rural areas; "pull" refers to the opportunities for employment and advancement which lure rural people to the rapidly expanding cities. We have used this dimension to describe reasons for migration from urban to suburban areas in an advanced country. The push-pull dimension may operate at several different levels simultaneously. There are pushes and pulls in the environment of origin as well as in the environment of destination. The push-pull dichotomy is a composite, a summing of factors which attract or repel people from alternative environments.

<sup>2</sup>In general, this dimension was less effective than the others, because the categories are too diffuse to be analytically meaningful.



At the most "empirical" level, these dimensions were useful because they allowed us to categorize and compare responses within each specific subject area, as well as across areas. However, each dimension had a more "theoretical" function in that it pointed to a process. That is, each defined an interaction between two kinds of explanatory factors which are often allowed to stand separately as the basis for conclusions about the urban environment.



## CHAPTER II: RESEARCH DESIGN

### Preparing the Interview Schedule

In any project attempting to probe people's responses and reactions to particular events and happenings, the question of what sort of research instrument is to be employed must be asked. We used the direct interview approach because we realized that our information was not cut and dried and that it was not at the top of a person's head, ready for complete and instant recall. Therefore, the kind of information we wanted to gather required that one human being talk to another in order to be able to fully explore the wide range of questions and the broad spectrum of nuances we might receive.

The mail-out questionnaire was deliberately excluded from use by us because it lacked the flexibility which is much needed when seeking complex information. In addition, there are indications that there is a mail-back bias in which the upper Socio-Economic Status (SES) groups return a higher percentage of their questionnaires than the lower Socio-Economic Status (SES) groups. It is extremely important to get the full representation of the lower socio-economic groups in Providence, Rhode Island, as in other cities, because these people comprise steadily increasing proportions of the central city population and because the major physical changes in cities are often made in the areas in which they live.

The construction of the interview schedule was a long, hard struggle involving much haggling between the project directors, who represented two different disciplines -- city planning and sociology. However, we

found that this process of constant give and take helped produce the same kind of refinement in the interview schedule as occurs when a design team works on the plans for a civic center or other complex project which requires compromise and accommodation.<sup>1</sup>

The major problems in preparation of the interview schedule were the following: which of the potentially innumerable topics of investigation should be included in the interview and in how much depth each of these should be explored. There was also a great deal of discussion about the sequence of topics and the structure which each battery of questions should take.

Finally, we went through the process of successive refinement of the wording of each question in an attempt to clear up all ambiguities. We did not want to ask our respondents one question and have them answer another. This critical process went on through the period of pretesting and right up to the time the questionnaire assumed its final form.

#### Pretesting the Schedule

Ideally, we would have run a pilot study in one or two small areas to get an idea of the urban problems that were of special concern to people.<sup>2</sup> Unfortunately, we had neither the time nor the funds which

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<sup>1</sup>It is important to emphasize that this ongoing discussion -- and in fact the whole project -- took place over a period of approximately one year while the principals were also involved in a variety of other Planning Department projects. We found that it was possible to conduct this kind of research using perhaps 50% of the work-hours of the existing staff. Thus, this procedure does not necessarily entail the hiring of additional permanent staff or the disruption of normal office procedures.

<sup>2</sup>One useful technique would have been the focused interview, which explores topic areas in depth. See Robert K. Merton, Marjorie Fiske, and Patricia L. Kendall, The Focused Interview (Glencoe, Illinois: Free Press, 1956).

would have allowed us to employ this valuable procedure. We had to allow our pretest to fulfill this function as well as its real purpose -- that of deciding which sequence of questions "worked."

The two principal researchers did the pretesting. We deliberately selected the lower socio-economic areas of the city. Our reasoning was that if the questions were intelligible and meaningful to those at the lowest educational levels, then they would be effective with those in the higher socio-economic areas as well. There were twenty respondents in our pretest. As a result of the pretesting, we considerably shortened the interview schedule (from one and a half hours to one hour) by dropping a number of questions which did not seem to elicit good information.<sup>1</sup>

#### The Sampling Plan

When the interview schedule was completed and in fairly good shape, we started thinking about our sample. We knew, of course, that we would utilize some form of random sample because only with random sampling is it possible to get a representative sample and to have control over the quality of results.

From previous associations with the Sociology Department at Brown University we knew that they were running a large interview study using an area probability sample.<sup>2</sup> They put us in contact with the statistician who had drawn up the sampling plan for them. Since much of the preliminary

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<sup>1</sup>The preferred procedure, assuming sufficient resources, would be to randomly sample on the pretest, but in different areas from those to be included in the final survey. The shortened interview schedule contained 30 pages. See section on survey research: technique and analysis, for parameters of good information, particularly the sections on interview schedule construction, pp. 87-104.

<sup>2</sup>See section on survey methodology, pp. 69-86

sampling work had been done for the sociology project, our particular sampling plan could be done relatively quickly and inexpensively.

In order to ensure the accuracy of the sample, it is important to get the services of a qualified sampling expert (usually a statistician). However, we did not simply turn over the problem of sample design to our statistician. We discussed the objectives and purposes of our study with him to make sure that he fully comprehended what we were trying to do. Out of the discussion with him came the decision to use cluster sampling.

This particular sampling plan was chosen for reasons of cost and convenience.<sup>1</sup> In our plan we settled on clusters of eight dwelling units. That is, a group of eight contiguous dwelling units on a block.

The results we obtained using the clusters varied only slightly from the results of randomly sampling every Nth unit on a block or census tract. But we were able to save a great deal of time and money by sending out interviewers to clusters so that they could go quickly from one dwelling unit to the next. Furthermore, it made supervision of field work much more efficient.

#### Recruiting and Training the Interviewing Staff

Well-trained, highly-motivated interviewers are crucial to the success of any survey -- particularly one inquiring into people's perceptions of and reactions to the urban environment. The problem for us was, therefore, how to recruit good interviewers within our limited budget.

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<sup>1</sup>Cluster sampling is quite common in certain large area surveys, e.g., the Detroit Area Study.

Almost immediately we ran into a problem. When the city personnel director, a strong party man, learned of our requirement for interviewers, he made it known that he could supply us with as many high-quality interviewers as we needed. That is, party workers from the precincts. It took considerable arguing and cajoling to convince him of the inappropriateness of these people for our requirements. He finally agreed that there was a difference between the interviewing that we required and ringing doorbells to get out the vote.<sup>1</sup>

Sarah Curwood, Professor of Sociology at Rhode Island College, was at the time giving a course in research methods to upperclassmen. Our need for interviewers fitted in perfectly with her need to give the students practical experience in actual field work.

We were invited to discuss our project with the class. Those students interested in the survey were hired and training sessions began soon thereafter.<sup>2</sup>

We spent at least four hours discussing the background, objectives, and techniques of the study with the student interviewers. Every effort was made to ensure that they fully understood the importance of their role in the project. Questions and criticisms were encouraged. Several improvements in the interview schedule came about as a result of these sessions.

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<sup>1</sup>Furthermore, in our opinion, a reason for not using these people was that their party connections were known in various neighborhoods and therefore many respondents would be hesitant to answer questions honestly and critically.

<sup>2</sup>This is not to indicate that students were selected uncritically. Dr. Curwood did a careful screening before she recommended those to be hired. We urged a continual process of screening and evaluation of interviewers from the beginning to the end of the project.

One training device which we employed was to have interviewers interview each other in order to gain familiarity with the schedule and overcome feelings of shyness and reticence. To give them further experience we instructed them to interview at least four adult members of their family or friends. Then we went over these completed interviews with the interviewers, criticizing and indicating ways in which they could be improved. This was done periodically throughout the whole project, and gave us an idea of performance. It was also done continually by our field supervisor.

Had we not already pretested the schedule ourselves, we would have utilized the interviewers for careful pretesting. This would have been a much better training procedure than the one we employed. It would have sifted the serious interviewers from the merely curious earlier in the game. And this would have resulted in better-quality interviews.<sup>1</sup>

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<sup>1</sup>See section on selection and training of personnel, pp. 110-116.



## CHAPTER III: FIELD WORK

Field work was started in May and completed in July 1962. This began with an area probability sample with a total of 525 addresses, from which we obtained 308 completed interviews. Eliminating industrial, commercial, vacant and non-existent addresses we had a refusal rate of roughly 15%.<sup>1</sup>

As noted, the sampling unit selected was clusters of approximately eight dwelling units. We limited our universe to respondents with the following characteristics:

1. Non-student;
2. Over eighteen years of age.

Thus, we were concerned with those individuals who were non-transient and who were old enough to make decisions about where they would live.

In order to choose the appropriate respondent, we also utilized a form of random sampling so that women or persons either unemployed or retired would not be oversampled.<sup>2</sup>

### Interviewing

During the first two or three weeks, we sent a majority of our interviewers into relatively "easy" areas, i.e., middle-class areas.<sup>3</sup>

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<sup>1</sup>There is no standard acceptable refusal rate. The canons of sampling dictate that every person selected be interviewed. Anything less than 100% introduces some slight sampling error. However, the range from 80-90% is considered acceptable.

<sup>2</sup>These are the groups that are most likely to be found at home during the day. Accordingly, it was necessary to give each adult in the dwelling unit a number and then randomly select one from among these. Often it was necessary to call back in the evening or on a weekend to catch the designated respondent.

<sup>3</sup>These were "easy" because our student interviewers were also middle class. Thus, there was no class gap of attitudes, language patterns, etc. to bridge.

We wanted them to gradually gain confidence and facility so that they could interview effectively in lower socio-economic and slum areas. Our field supervisor was active checking that interviewers were going to the appropriate clusters and giving them assistance with the problems that arose. We attempted to keep interviewers on a production schedule of at least eight completed interviews per week. This was done in order to establish interviewer momentum and to complete the field work as quickly as possible.

We kept a running check on:

1. Completion time for each interview;
2. Number of call-backs (we set a limit of three before finally eliminating that dwelling unit);
3. Proper filling-out of interview forms;
4. Completeness of interviews and quality of responses.

First the field supervisor and then we, ourselves, carefully read each interview as it was returned to the office. Particular attention was given to the quality and completeness of the interview.<sup>1</sup>

By checking this way we were able to see which interviewers were really working and probing for information and which were merely "going through the motions." In effect, this gave us the degree of quality control that is essential to ensure that information is being gathered consistently. On occasion, it was necessary to call an interviewer into the office and point out to him where he was failing to probe adequately. In some instances

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<sup>1</sup>There was a back page of the interview schedule on which interviewers were directed to record their own evaluations of the quality of the interview. We doublechecked these against our standards.

this led to the discharge of interviewers who were not performing adequately. Furthermore, this systematic review was an effective way to prevent interviewers from filling out the schedules themselves while relaxing in a friendly neighborhood bar.

This raises the problem of interviewer attrition. In every survey there is always a certain loss of interviewing personnel. However, it is desirable to keep the interviewing team together as much as possible so that the interviewing doesn't have to be interrupted while you train a new set of interviewers -- thus upsetting the time schedule and continuity of the research program. We would note that the problem of interviewer turnover would be considerably less if one employed "professional" interviewers.<sup>1</sup>

One will have to balance the advantages of hiring professional interviewers against those of employing non-professional interviewers like students. The enthusiasm and motivation of the student interviewers may perhaps compensate for their higher rate of turnover.

#### Interviewing Minority Groups

There are a number of barriers which inhibit communication in the interview situation. One of these is race. Because we were particularly concerned about getting full, frank, and candid information from our Negro respondents -- they had been most affected by urban renewal programs in Providence -- we used Negro interviewers in the Negro neighborhoods. Furthermore, we used white interviewers in white neighborhoods. The

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<sup>1</sup>The National Opinion Research Center (Chicago) and the Institute for Social Research (University of Michigan, Ann Arbor, Michigan) are examples of organizations which have a permanent list of professional interviewers available for service throughout the country. The majority of these interviewers are white, middle class women between the ages of 35 and 55.

matching of interviewers to neighborhoods may be a factor of great importance which should be taken into account in interviewer selection and assignment. We used Italian-speaking interviewers in the neighborhood which had a high percentage of foreign-born Italians.

### Scheduling of Interviews

We found that a large proportion of interviews could only be obtained after working hours or on weekends. This suggests, as a general practice, that one schedule the majority of interview contacts for evenings and weekends. This results in greater efficiency by reducing the number of call-backs and may help maintain interviewer motivation at a high level. There is nothing more frustrating to an interviewer than knocking on twenty doors and finding only one eligible respondent available to interview.

### Practical Sampling Problems

We had utilized U.S. Census block statistics, up-to-date land use maps from the Planning Department and a Sanborn Atlas as references to ensure that we listed all the dwelling units in our sampling plan. Initially, when the sampling plan was being developed, we found discrepancies in the figures for multi-family areas. This was particularly true in the high-density Italian and Negro areas, i.e., the ghetto areas. When our interviewers went into these areas, they verified these discrepancies. Instead of eight dwelling units in a cluster, they might find ten, twelve, or as many as sixteen.<sup>1</sup> Under-reporting of dwelling

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<sup>1</sup>In the Federal Hill area of Providence, for example, our field supervisor would "discover" another triple-decker in back of the one abutting the street.

units ranged from 10% to 25% for different blocks in these areas. In the single and two-family areas, few discrepancies were found.

### Editing and Coding Interviews

After a substantial number of interviews had been completed, we began the process of editing and coding. During the process of editing, we sifted out the significant responses (precoding) which would later be broken down into their components for purposes of subsequent coding. Although we did this ourselves (because we were on such a limited budget), under more usual circumstances one would train a junior member of the planning staff<sup>1</sup> to do the editing and precoding.

Precoding applies primarily to open-end questions.<sup>2</sup> It involves considerable judgment and evaluation of the complex responses that these questions evoke. Here is an example of one of our open-end questions and the verbatim responses:

Question: "What kinds of activity do you have in mind when you speak of urban renewal?"

Response: (Verbatim) "Oh, I think improving the city. You know, tearing down old buildings, getting more industry, cleaning up the slums."

[(Probe) Question: "Anything else?"]

Response: "Well, I suppose it has made some people move out of the areas that were cleared."

This rich and complex response was broken down into these elements for precoding:

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<sup>1</sup>Often this work is done by graduate students on University survey projects.

<sup>2</sup>See section on interview schedule construction for descriptions of types of questions, pp. 87-106.

"Improving the city" -- Precoded as "Miscellaneous General" because it is not specific.

"Tearing down old buildings" -- Precoded as "Physical."

"Getting more industry" -- Precoded as "Economic."

"Cleaning up the slums" -- Precoded as "Physical."

"Made some people move out of areas that were cleared" -- Precoded as "Social."

This process of analysis was repeated over and over again until we developed a complete code which would adequately encompass the whole range of responses -- physical, social, economic, etc. -- that were being recorded.<sup>1</sup> Thus, the coding categories were related to the type and variety of responses to the different questions.

We trained three draftsmen in the office as coders. The job of the coder was to translate the precoded information from each individual interview schedule onto eighty-column master sheets (the same number of columns as on an IBM card). To ensure accuracy and reliability of coding, every tenth interview was cross-checked by somebody other than the person doing the initial coding. This procedure was designed not only to catch random or non-recurring coding errors, but to control against a consistent error which might run through an entire coding sheet.

#### Computer Processing

While the coding was going on, we were making arrangements with the computer center at City Hall to have our data processed on their machines. In order to have them process the data fully and completely, we had to make sure to specify exactly what we wanted and why. This task took some

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<sup>1</sup>See Appendix for sample code.

time and repeated discussion to make the programmer understand the form in which we wanted data printed out. Also, we all had to agree on a form of "machine tabulation request" (MTR) which could be easily understood by those running the machines.<sup>1</sup>

The first phase of processing involved getting a print-out which showed the distribution of responses for each question. The second phase involved deciding how we wanted these results cross-tabulated. Thus, we went over the print-outs and decided which items of information could be meaningfully related to each other. For example, we tabulated migration history against age, occupation, and income; and we tabulated evaluations of satisfaction with living in the city, by area, income, etc. Then we returned to the computer center and again went through the process of explaining what sort of tabulations we needed at this time.

We had initially thought that our computer analysis needs could be completed within a six-week period. However, we did not reckon with crises in the payroll department. These required rewriting of their programs and reprinting of thousands of checks in order to meet payroll deadlines, and our work got "bumped."

The next move was to analyze our results.

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<sup>1</sup>In our case this involved the usual key punch operations and use of an IBM 1401 for cross-tabulations, percentages, and print-outs.





## CHAPTER IV. SUBSTANTIVE RESULTS

We analyzed our results in accordance with the five major substantive areas set up in formulating the interview schedule.

### Housing Types and Preferences

#### Existing and Preferred:

Because the element in a man's physical environment which impinges upon him most intimately and directly is the structure in which he lives, we considered housing as one of the keys to satisfaction with the urban environment. Therefore, we wanted to explore this area as completely as possible.

First, we obtained information about respondents' actual housing experience, both the pervious<sup>1</sup> and present housing types. Then each respondent was asked to specify the type he preferred, for it was important to discover the extent to which his actual experience coincided with the kind of housing he preferred.

From the following table it becomes obvious that there was a great divergence between the actual and the preferred. The preference for single-family homes expressed by two-thirds of our respondents was realized only by one-fifth of them in actual experience. Furthermore, just over one-third of our sample occupied the well-known "triple-decker," while only one in twenty preferred this housing type.

Though there was an overwhelming preference for single-family housing among all respondents, an interesting pattern emerged when we controlled

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<sup>1</sup>The type of house lived in immediately preceding the present one, no further back in time.

Table I.  
Housing Experience and Preference

	Previous	Present	Preferred
One Family	16.3	20.5	66.6
Two Family	28.6	30.5	21.4
Three Family	36.0	34.7	5.5
Apartment Building	8.4	10.1	3.2
Other <sup>1</sup>	<u>10.7</u>	<u>4.2</u>	<u>3.3</u>
TOTAL	100.0%	100.0%	100.0%
N	308	308	308

<sup>1</sup>Four-Family, rooming house and miscellaneous.

for Socio-Economic Status (SES).<sup>1</sup> It became clear that with an increase in status there was a parallel increase in preference for single-family housing. However, even 60% of the lowest socio-economic group (80% among the highest) wanted to live in a single-family house. The fact that our middle and upper middle class respondents wanted to live in this type of housing was not startling. What surprised us was the extent to which the working class respondents shared this preference. We

<sup>1</sup>We used the three traditional components of a social stratification system: education, income, and occupation. They were grouped as follows: (a) Less than 9 years; 9-12 years; some college or more; (b) Under \$3,000; \$3,000-\$5,999; \$6000-\$9,999; \$10,000 and over; (c) Blue collar (Craftsmen, Foremen, Farmer, Operatives, Private Household Workers, Laborers); White collar (Professionals, Manager, Clerical, Sales, Service).

considered this unusual in light of a common notion that working class people are satisfied with multi-family housing.

The distribution of responses by age group<sup>1</sup> presented a rather different picture. With increasing age we found a decreasing preference for single-family housing. While 76% of the youngest age group preferred single-family housing, this dropped to 49% among the elderly.<sup>2</sup>

#### Reasons for Preference:

We did not wish merely to record housing preferences alone, but attempted to get the reasons for these preferences. A major problem here (as elsewhere) was to avoid biasing respondents or restricting their replies. Therefore, in order to obtain a set of "free" responses we simply asked, "Why is that?" after they had expressed their preference. As a result of this technique, the reasons given included many different aspects of housing.

Summarizing the results of Table II, we made the following observations:

1. There is an overall emphasis on the social implications of the housing type -- regardless of preference.
2. Single-family preference is based primarily on a wish to minimize social interaction.
3. Preference for multi-family is based primarily on a wish to maximize social interaction.

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<sup>1</sup>Another way of stratifying is by demographic characteristics, age being one of the most important. The grouping by age used here was: (a) 18-44 years; (b) 45-64 years; (b) 65 years and over.

<sup>2</sup>This result is paralleled by other research which has pointed out the relationship between "stage in life cycle" and housing needs. In his study of urban residential mobility, Peter Rossi identifies "stage in life cycle" (unmarried, young married, parents with young children, parents with older children away, widow or widower) as the most important reason for changes in residence. The contraction of the housing needs of the aged are an example of this. For further implications of life cycle and residential mobility see Peter Rossi, Why Families Move (Glencoe: Illinois: Free Press, 1956).

Table II.

## Reasons for Housing Preference by House Type Preference

	One Family	Two Family	Three Family	Other <sup>1</sup>	Total
Minimize Social Interaction:					
Privacy	38.0	11.4	5.5	5.0	30.9
Independence	26.9	2.5	--	5.0	20.9
Maximize Social Interaction	--	41.8	50.0	40.0	10.5
Physical Aspects of House and Lot	19.9	11.4	5.6	20.0	18.0
Economic Aspects of Housing Type	3.6	16.4	11.1	20.0	6.7
General "Pride of Ownership"	6.3	--	--	--	4.8
Miscellaneous	5.3	16.5	27.8	10.0	8.2
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%
N	361	79	18	20	478 <sup>2</sup>

<sup>1</sup>Four-family, apartment building and miscellaneous.

<sup>2</sup>When the total number of responses exceeds 308, the question format permitted more than one response.

What significance does this particular set of observations have for comprehensive planners? We think it indicates that people are able to express why they wanted to live in a particular housing type. Their reasons for such preferences seem consistent<sup>1</sup> with the characteristics of such housing. And, respondents appeared to be aware of certain aspects of housing which lie beyond the simple factor of "shelter."

<sup>1</sup>We assumed that (a) single-family housing provides greater opportunity for minimizing involuntary social contacts, and (b) multi-family housing offers greater opportunity to maximize social interaction.

Such awareness of the social function of housing helps provide an explanation for the preference for single-family housing common to both the working and middle classes. All respondents shared a desire for privacy and independence. This desire emphasized the lack of appeal of multi-family structures and must count as one of the powerful motivations in the exodus from Providence to the suburbs.

Awareness of the social function of housing also suggested to us one explanation of the greater preference for multi-family units among the elderly. Their need for personal contact could be maximized in this housing type. A group of dwelling units becomes a more convenient focus of social interaction for people with limited physical mobility and vitality.

There are two additional observations which we derived from Table II:

4. A relationship exists between preference and emphasis on the physical aspects of a house type.
5. A relationship exists between preference and emphasis on the economic aspects of a house type.

A greater concern with lot size, house size and design of house (all on one level) was expressed by those who preferred single-family homes. And those who preferred multi-family dwellings pointed out the economic security which such ownership made possible.<sup>1</sup> Here again, the reasoning seems consistent with the stated housing preference.

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<sup>1</sup>Most respondents assumed that they would own (rather than rent) the preferred house type. This fact is not unusual when placed in the context of the overall owner-renter preference: 68.6% to own and 31.4% to rent. This was in contrast to the actual split in our sample: 36.5% owners and 63.5% renters.

### Neighborhood Qualities and Preferences

We could not look at the house or dwelling unit apart from its context, the cluster of houses and local facilities which we call the neighborhood. The neighborhood is the areal unit in which a significant portion of the population spends most of its time<sup>1</sup> (particularly mothers, young children, and the aged); and planners have hypothesized that it is the scale at which much social interaction takes place (neighboring and even friendship).<sup>2</sup> Accordingly, we felt that an adequate comprehension of people's reactions to the urban environment must necessarily include information about the neighborhood.

To elicit this information, a general question of the "How do you like your neighborhood?" variety is sometimes asked. And, not surprisingly, the responses are vague and highly ambiguous. But this kind of "gray" question does not call forth a response which discriminates between the genuinely positive and negative features of a neighborhood. Consequently, we sought very specific information from our respondents, i.e, those elements which would make them stay, and those which would make them want to leave their present neighborhood.

#### Reasons for Staying:

We again viewed responses in terms of physical, social, and economic categories. But because the scale of our subject changed (from housing

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<sup>1</sup>We did not attempt to give the respondent a physical definition of the neighborhood; e.g., so many blocks or a given geographic area. We allowed the respondent to use his own definition of neighborhood.

<sup>2</sup>For a brilliant discussion of the relationship between "neighboring" and "propinquity", see Herbert J. Gans, "Planning and Social Life: Friendship and Neighborhood Relations in Suburban Communities," Journal of the American Institute of Planners, XXVII, 2 (May 1961), pp. 134-141.

per se to the neighborhood as a whole) the content of these categories differed. The "physical" category included such features as closeness to job, public facilities and shopping, neighborhood upkeep and attractiveness. Responses in the "social" category concerned close friendship and kinship ties in the neighborhood. In the "economic" category were comments about inexpensive rentals and financial ability to move.

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Table III.

Features of Neighborhood  
Making Respondent Want to Stay

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Physical	50.2
Social	28.4
Economic	12.7
Other <sup>1</sup>	<u>8.7</u>
TOTAL	100.0%
N	528

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<sup>1</sup>Miscellaneous, non-specific comments: "it's nice," etc.

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It was the physical aspects of the neighborhood which seemed to influence respondents strongly to stay in the same place. These responses occurred nearly twice as frequently as any other aspect. Social aspects ranked second<sup>1</sup> and economic considerations came third.<sup>2</sup>

<sup>1</sup>Sample responses were: "lived here all my life"; "relatives and friends live around here"; "like my neighbors."

<sup>2</sup>"Rent is cheap"; "can't afford to move now."

As with housing, we found that the usual SES variables made a difference. With increasing levels of education and income, and white collar occupation, there was a decrease in emphasis upon the social aspects of a neighborhood.<sup>1</sup> This pattern suggested that social ties (kinship) in Providence neighborhoods were much more significant for the working class than for the middle class respondents in our sample.<sup>2</sup> We also found that with increasing age there was more frequent mention of social ties as being that feature which made the respondent want to stay in his present neighborhood.

Reasons for Leaving:

In the reverse situation (i.e, features for the neighborhood making a respondent want to move), we found again that the physical aspects of the neighborhood were most important. Over half the responses to this question included such things as "neighborhood is rundown," "no parks or playgrounds for children," "too crowded and congested." Nearly one-third of the remaining responses mentioned social aspects specifically. Conspicuous by its absence was any mention of economic aspects as a factor in motivating people to move.

The usual socio-economic and age criteria showed no clear relationship with the desire to move from the neighborhood. However, this lack

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<sup>1</sup>Among those at the highest SES level, the emphasis shifted to physical aspects of the neighborhood, not to economic considerations. It appeared that they were no longer mainly concerned with financial factors, but given a certain buying power, they were more interested in the physical amenities of the area.

<sup>2</sup>See discussions of class-related social patterns in Gans, Urban Villagers, and in Peter Young and Michael Willmott, Family and Kinship in East London (London: Routledge and Kegan Paul, 1957).



of pattern led to another dimension which cut across the physical and social aspects: "push -- pull."

Within the total sample, over 85% of the responses indicated that "push" factors were the motivation for a desire to leave. However, even when "push" factors were emphasized, there was mention of the attractive (pull) aspects of other areas as well. This suggested that the characteristics of a single neighborhood cannot be isolated from the "possibilities" of alternative areas.

#### Desired Improvements:

The previous questions asked about the respondent's present neighborhood, as it existed at the time of the interview. These served not only to get information on the respondent's present neighborhood, but also stimulated him to think about neighborhoods and neighborhood qualities in general. As a next step we asked a "normative" question, i.e, what he would like to see done to his neighborhood to make it a better place in which to live.

In answers to the questions about staying in the existing neighborhood or moving away approximately half of the factors which might influence respondents' decisions were specifically physical. But, as Table IV shows, over three-fourths of the improvements they would like concern some physical aspect of the neighborhood.

We made several observations in connection with this preponderant mention of the physical aspects. First, one significant attribute of this kind of improvement is its visibility. Evidently, an improvement in the "looks" of the neighborhood is a crucial part of any general improvement in livability. Associated with this interest in visible

Table IV.

Improvements Needed in Neighborhood<sup>1</sup>

<u>Physical</u>	
General Neighborhood Improvement	20.4
Traffic and Transportation	18.3
Block Improvement	15.9
Recreation	12.4
<u>Social</u>	
Type of People	9.3
Other Aspects	10.2
No Improvements Needed	<u>13.5</u>
TOTAL	100.0%
N	421

<sup>1</sup>These are some representative quotes which typify each category of response. General Neighborhood Improvement: "Keep up property," "Don't let industry in." Traffic and Transportation: "Get more parking," "Reduce traffic on streets." Block Improvement: "Put in some trees and shrubs," "Make some people on the street fix up their houses." Recreation: "Put in playgrounds," "Build swimming pools to keep kids off the streets." Type of People: "Make parents control their kids," "Get nicer, friendlier people here."

improvement was a concern with the basic functioning of the neighborhood. Traffic control, cleaning up vacant lots, construction of parks and playgrounds, adequate street cleaning -- these were the types of improvements said to be most necessary. Individually each of these appears minor, but taken cumulatively they can make a neighborhood a substantially better place in which to live.

Results from the total sample indicated that 13.5% felt that improvement was unnecessary. We had anticipated that this response might come from

people who actually lived in well-kept-up, attractive neighborhoods. However, the largest percentage who said that no improvements were necessary was concentrated in the lowest education and income groups, and among the elderly. These are hardly the people who live in neighborhood requiring the least improvement. We inferred that the most deprived, i.e., the lowest socio-economic group and the aged, are also those with the lowest standards and expectations about the possibility and/or probability of improving their neighborhood.<sup>1</sup>

#### Reasons for Outmigration

As we have seen, the people in our sample made frequent mention of dissatisfaction with existing housing and neighborhood conditions. In our questionnaire we wanted to explore whether this level of dissatisfaction was great enough to affect their behavior.<sup>2</sup> Specifically, were they displeased enough to want to move from the city? Therefore we asked if the respondent had thought of moving out of Providence recently (in the past two years).<sup>3</sup>

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<sup>1</sup>For two basic discussions of "the culture of poverty" see Michael Harrington, The Other America (New York: Macmillan, 1962) and Oscar Lewis, The Children of Sanchez (New York: Random House, 1962).

<sup>2</sup>Leslie and Richardson have considered complaints about present dwelling an intervening variable between the independent variables (stage of family life cycle and career pattern) and the dependent variable (resident mobility). Perhaps such complaints stand as an independent variable along with life cycle and career pattern. See Gerald R. Leslie and Arthur H. Richardson, "Life Cycle, Career Pattern and the Decision to Move," American Sociological Review, 26, 6 (December 1961), pp. 894-902.

<sup>3</sup>In Why Families Move, Peter Rossi indicates that a family's intentions about moving can be taken as a good indicator of how that family will actually behave. The "thought of moving," though less definite than "intention," certainly precedes intention. We cannot, however, draw as direct an inference about behavior (as Rossi does) without further research.

We found that nearly one-third (32.5%) of the total sample had indeed contemplated such a move. Interestingly, this overall proportion varied by both SES group and by age. Less than a fourth (23.1%) of respondents having less than 9 years of education or incomes under \$3,000 answered "yes," they had thought of moving recently.<sup>1</sup> By age level the proportion increased to nearly one-half (46.5%) within the youngest age group; declined to considerably less than one-third (27.5%) among the middle-aged; and down to less than one-eighth (12.0%) among the elderly.<sup>2</sup>

#### Why They Leave:

We did not know whether dissatisfactions with housing and the conditions of neighborhood alone were sufficient reasons for migration out of the city during the past decade. Therefore, in our questionnaire we asked directly why people had left the city.<sup>3</sup> The three major reasons

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<sup>1</sup>The limited expectation of moving out of Providence exhibited by the lowest SES group was consistent with their past behavior. Local demographers had pointed out that "...heavy migration out of the city was selective of residents of the higher socio-economic areas..." Sidney Goldstein and Kurt B. Mayer, Metropolitanization and Population Change in Rhode Island, Rhode Island Development Council, 1961, p. 56.

<sup>2</sup>In our study the relationship by age showed that the 18-44 year olds would continue to leave the city as they had in the preceding decade. See Census Data for Providence 1950-1960.

<sup>3</sup>For other surveys which deal with outmigration and opinions about urban and suburban living see: Thomas B. Brademas, "Fringe Living Attitudes," Journal of the American Institute of Planners, XXII, 2 (1956), pp. 75-82; Byron E. Munson, "Attitudes Toward Urban and Suburban Residence in Indianapolis," Social Forces, 35, 1 (October 1956), pp. 76-82; H. Lawrence Ross, "Reasons for Moves to and from a Central City Area," Social Forces 40, 3 (March 1962), pp. 261-63; Basil G. Zimmer and Amos H. Hawley, "Home Owners and Attitudes Toward Tax Increase: Flint Metropolitan Area," Journal of the American Institute of Planners, XXII, 2 (1956), pp. 65-74; Sidney Goldstein and Kurt B. Mayer, "The Impact of Migration on the Socio-Economic Structure of Cities and Suburbs," Sociology and Social Research, 50, 1 (October 1965), pp. 5-23; R. Wilkinson and D.M. Merry, "A Statistical Analysis of Attitudes to Moving (A Survey of Slum Clearance Areas in Leeds)," Urban Studies, 2, 1 (May 1965), pp. 1-14.

given for outmigration from Providence concerned: (1) employment and location of industry, (2) physical conditions and recreation, and (3) housing and rental problems. These, given in order of frequency of mention, accounted for nearly 60% of all responses.

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Table V.

Why People Have Left Providence<sup>1</sup>

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Employment and Location of Industry	22.3
Physical Conditions and Recreation	18.9
Housing and Rental Problems	17.4
Amenities of Suburban Living	14.2
City Services and Government	9.1
Highways and Other Construction	9.1
Differential Migration	4.7
Other	<u>4.3</u>
Total	100.0%
N	597

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<sup>1</sup>Following are some representative quotes which typify each category. Employment and Location of Industry: "There aren't enough jobs," "Not enough industry around here." Physical Conditions and Recreation: "The city is too crowded," "There aren't enough playgrounds for kids." Housing and Rental Problems: "Can't find a nice house to buy," "Rents are too high." Amenities of Suburban Living: "Suburbs are better places to raise kids in," "Suburbs are quieter, prettier." City Services and Government: "Not enough garbage collection," "Taxes are too high." Highway and other Types of Construction: "New highways are forcing people out."

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We found little or no relationship between socio-economic or demographic variables and most reasons given for outmigration. However, the

"push-pull" dimension brought to light some important distinctions. Within the total sample the proportion of "push" to "pull" reasons (for leaving the city) was approximately 3 to 1, indicating the repulsion from an undesirable environment.<sup>1</sup> However, the college-trained and the over-\$10,000 income groups gave "pull" factors as the motivation for outmigration more than twice as frequently as respondents in other groups.

#### Community Facilities and Services

We asked our respondents for an evaluation of basic community facilities and services -- using a simple checklist of good, fair, or poor. By totaling all their individual responses, for each facility or service, we derived the total general ranking (level of satisfaction):

1. Fire Protection
2. Health and Hospital Facilities
3. Garbage and Trash Collection
4. Police Protection
5. Public Schools
6. Cultural Facilities
7. Community Welfare Facilities
8. Recreational Facilities
9. Public Transportation
10. Road and Street Maintenance

#### Urban Renewal Knowledge and Experience

We included a section in the questionnaire on Urban Renewal, because Providence was among the top handful of cities in the country in per

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<sup>1</sup>For example, Push: "There aren't enough jobs here," "the city is in disgraceful condition"; and Pull: "More single-family homes out there," "it's healthier to bring up kids in the suburbs."

capita expenditure for Urban Renewal. At the time (1962) it was one of the few cities with three projects completed; it also had four in execution and three in the planning stage, making a total of ten projects.

The Condition of the City

We felt that measurement of the effectiveness of any program oriented toward changing the environment first required evaluation of the existing conditions in the city. Improvement had to be viewed in relation to the perceived severity of existing problems. Consequently, we were concerned with respondents' evaluations of the slum situation in Providence, slums being the most visible index of "urban decline."

We asked for a general estimate of the number of slum areas in the city.<sup>1</sup>

Question: "About how many slum areas would you say that Providence has -- a great many, quite a few, not very many, or none?"

Table VI.

Number of Slum Areas in Providence

A great many	13.0%
Quite a few	41.2
Not very many	36.7
Other <sup>1</sup>	<u>9.1</u>
TOTAL	100.0%
N	308

<sup>1</sup>Except where otherwise noted, the "other" category covers "don't know" or "not ascertained" responses.

<sup>1</sup>In retrospect, this question is much too broad and general. To adequately ascertain such information, the question would have to be asked in more specific terms, and properly would be the subject of a battery of questions dealing with both the definition of a slum and number of slum areas.

Image of the Program

We assumed that a program as extensive, well-publicized,<sup>1</sup> and physically "obvious" as Urban Renewal would be familiar to most respondents in our sample. However, over two-thirds of the answers to a question asking how much they had heard or read about Urban Renewal fell into the "not very much" or "nothing" categories.<sup>2</sup>

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Table VII.

Knowledge about Urban Renewal

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Great Deal	8.1
Quite a lot	20.5
Not very much	44.2
Nothing	24.7
Other	<u>2.5</u>
TOTAL	100.0%
N	308

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From the informed (those who answered "great deal" or "quite a lot") we attempted to get an idea of the "content" of this knowledge, i.e., something more than a simple measure of how much they thought they knew

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<sup>1</sup>There had been coverage by all the local mass media. The one newspaper in town not only printed frequent features, but also supported it editorially. Radio and television coverage was extensive. In addition, the Providence Redevelopment Agency had an active public information program.

<sup>2</sup>There was a markedly higher percentage (48%) of responses in the "great deal" or "quite a lot" category among those who had some college training. This seemed to bear out the hypothesis that the better educated are generally better informed on public issues.



about the program. We therefore asked them "What kinds of activity do you have in mind when you speak of Urban Renewal?" Though most responses were phrased in terms of generalized physical changes throughout the city, their range extended beyond the legal limits of any Renewal program. In particular, traffic control, parking, and freeway construction were frequently considered to be a part of Renewal.

Other responses gave Urban Renewal jurisdiction over social changes, economic improvement, upgrading of public facilities and aesthetic considerations. Certainly there were a number of factually "correct" responses such as "slum clearance," "improving business areas," and "preventing blight." But even our "informed" respondents had a tendency to include all kinds of changes under the umbrella of Urban Renewal.

#### Social Impact of Urban Renewal:

We were also interested in the human effects of the Renewal program and the degree of community awareness of its impact on various groups. When we inquired (of all respondents) whether there had been any specific group(s) particularly affected by Urban Renewal, approximately one-third of our respondents named Negroes. The economically deprived also received frequent mention.

The overlap between those who are Negro and those who are economically deprived needs no special emphasis -- it was true in Providence as elsewhere. It was also true in Providence that Negroes had been most often affected by Renewal.<sup>1</sup>

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<sup>1</sup>The three Renewal projects most frequently mentioned had been predominantly occupied by Negroes before clearance.

Table VIII.

Specific Groups Affected by Urban Renewal

Negroes	33.0
Economically Deprived	13.9
Other Ethnic Groups	4.9
Older People, the Elderly	4.1
People in Specific Project Areas	5.2
Other Groups	8.2
None, no one	16.8
Don't know	<u>13.9</u>
TOTAL	100.0%
N	367

Considering the lack of information about Renewal shown in the previous question (see Table VII.), it was not surprising to find that 30% of our total sample felt either that no special group had been affected, or that they knew of no such group. Thus, nearly one in three of the respondents had virtually no information about the "human" impact of Urban Renewal.<sup>1</sup>

A follow-up question concerning the Renewal program's impact was asked only of those respondents who were able to name a specific affected

<sup>1</sup>This lack of information is most significant when juxtaposed with the fact that over 60% of the total Negro population of Providence had been forced to move at least once in the previous ten years as a result of the Urban Renewal program (according to Urban League estimates).

group. Of these "informed" respondents, 43% stated that Renewal had "hurt" the groups it affected. Another 21% indicated that it had "hurt now, but would help in the future." The remaining 36% felt that the Renewal program had "helped" these groups.

When asked to explain the ways in which Renewal had helped or hurt, the majority of respondents mentioned physical changes in the environment (rather than social changes).<sup>1</sup> The overall content of responses indicated that most people felt that Urban Renewal had hurt particular groups through forced moves and lack of immediate compensations (better housing and facilities).

Improvements for the City and Neighborhood:

The next questions dealt with the problems respondents felt Urban Renewal should solve. We wanted to see what direction they thought Renewal should take in the future.

Table IX.

What Renewal Could Do To Help the City

Physical aspects	34.2
Economic aspects	16.5
Process and progress	14.9
Facilities and Aesthetics	11.2
Social aspects	6.7
Miscellaneous	8.0
None or nothing	8.5
TOTAL	100.0%
N	375

<sup>1</sup>A sample of these responses were: Hurt -- "Forced them out of their homes," "just moved them from one slum to another," "pushed them out and didn't provide them with decent housing." Helped -- "Got them out of the slums," "gave them good homes."

The major help people felt Renewal could offer the city was improvement of the physical aspects of the environment and the prevention of blight. Respondents suggested that this upgrading include improvement of community facilities and overall "facelifting" of the city. Economic improvement, particularly "industrial development," was also considered a responsibility of the Renewal program. Many responses concerned the timing of such help -- the rate of progress and scope of projects was frequently mentioned.<sup>1</sup> These comments focused on the "unorganized" character of the program, including (a) the time lag between clearance and construction, and (b) the lack of planned housing for those residents who had been displaced by the renewal process. Often respondents saw these problems as examples of governmental and planning inefficiency. Nonetheless, very few respondents felt that Renewal could do "nothing" to help the city as a whole.

We next asked respondents what Renewal could do for the neighborhoods in which they lived to tie this more closely to their immediate situation. In contrast to the city pattern (8.5%), however, over 43% of our respondents asserted that Renewal could do "nothing" to help their neighborhoods. The relative significance of other types of changes also varied.

We considered several explanations for the frequent statement that Renewal could do "nothing" for the respondents' own neighborhoods. Perhaps the fact that all completed projects had involved total clearance

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<sup>1</sup> Discussion of these "procedural" questions (in contrast to answers given in terms of "substantive" help) tended to be related to the respondent's level of education. Thus, the organization and phasing of the program was more often mentioned by those with some college training than other respondents. These respondents were more concerned with how Urban Renewal should be accomplished than with what Renewal could do to help the city.

made respondents fear its possible role in their own neighborhood. Another explanation may be that respondents saw the need for improvement of their neighborhoods, but felt that a technique other than Renewal would be more suitable.

Table X.

What Renewal Can Do To Help Neighborhood

Physical aspects	23.6
Economic aspects	1.4
Process and Progress	1.4
Facilities and Aesthetics	17.7
Social aspects	1.7
Miscellaneous	11.1
None or nothing	<u>43.1</u>
TOTAL	100.0%
N	288

Replacements for Cleared Slums

Since past policy had been oriented toward clearance, we asked respondents what land use they would like to see replace slums which might be cleared. The replacement most frequently mentioned was residential -- particularly single-family homes.

When we combined preferences for various types of residential re-uses (single-family, apartment houses, and public housing) these constituted over half of the total. The next highest preference was

for parks, swimming pools, and playgrounds. This emphasis on housing and recreation parallels preferences expressed elsewhere in the questionnaire.

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Table XI.

Uses to Replace Slums Cleared by Renewal

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Residential areas (single-family mainly)	37.2
Recreation areas (parks, pools, playgrounds)	16.2
Private multi-family (apartment buildings mainly)	10.2
Public multi-family (projects and housing for elderly)	8.0
Industrial uses (heavy and light)	7.6
Commercial uses (shopping centers and office buildings)	7.6
Institutional uses (churches, schools, colleges)	3.7
Other uses	<u>9.5</u>
TOTAL	100.0%
N	462

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PART TWO

SURVEY RESEARCH: TECHNIQUES AND ANALYSIS





## CHAPTER V: INTRODUCTION

For planning future change and development it has become imperative that comprehensive planners have some assessment of the characteristics, motives, and expectations of the general population as well as those persons who will be most drastically affected by the changing environment. Executives and employees; Negroes and whites; those just entering the labor force and those about to retire; families who live in old, high-density areas and those who live in new, one-acre zoned tracts; people with eight years of education and the growing proportion with M.A.'s and Ph.D.'s; commuters who drive two hours a day on the expressways and shoppers who occasionally spend half an hour on the bus -- extensive data on all these types of people, their attitudes and behavior, must become part of the "basic information" of comprehensive planning.

As we have indicated in the General Introduction, the most effective and economical tool for collecting this information is the "sample survey." The following diagram and discussion outline the main phases of activity involved in the planning and execution of a sample survey.

The following diagram suggests the procedural connections among twelve basic tasks which are part of any social survey. They must be organized carefully so that adequate time is allowed to prepare the final research report.

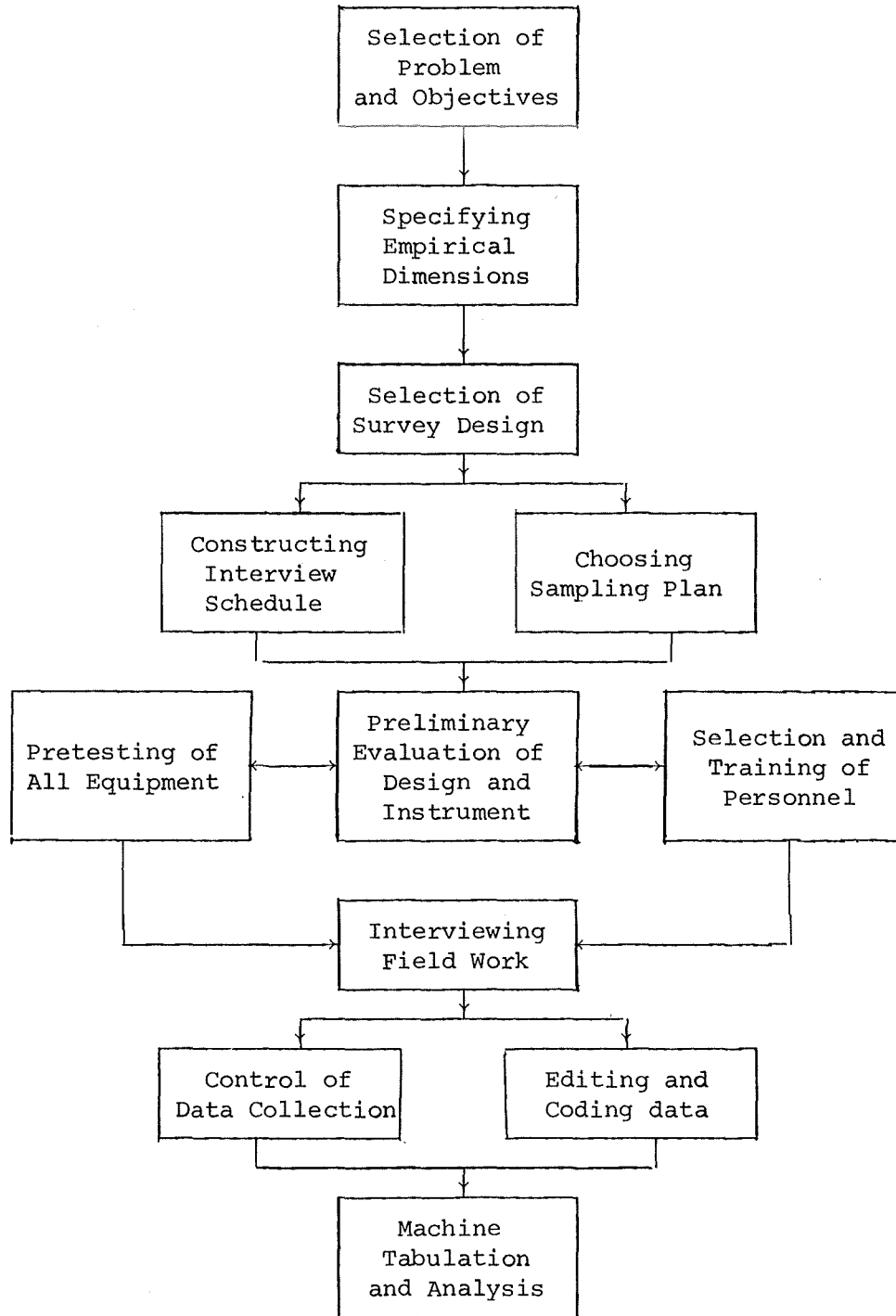
### Major Phases of the Research Process

These tasks can be combined under four headings which specify general

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Diagram 1.

Flow Chart of Twelve Basic Tasks of a Sample Survey



phases of the research process:<sup>1</sup>

1. Research Design
2. Survey Methodology
3. Data Collection
4. Data Processing

In the initial stages of the research design the need for a social survey must be carefully considered. It should not be undertaken unless it is perfectly clear that a survey is the best way to obtain the information required at that point in the planning process. After deciding to conduct this type of study the planning staff must carefully define the problem to be analyzed and discuss the explicit objectives of the research.

Part of the same discussion and debate leads to definitions of the universe to be analyzed and the types of data to be collected. These are the specific empirical dimensions of the study.

All these choices must be thoroughly discussed before decisions are finally made. For these decisions are the basis on which the study will stand (providing new and useful information) or fall (delivering a package of irrelevant facts and statistics).

The next phase in the research process centers on certain methods for obtaining the appropriate sample of persons and designing an effective research instrument. During this phase consultants may be called in to help in deciding when and how the interviewing should be done and who should be sampled.

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<sup>1</sup>We use these as the framework for the following discussion of survey research procedures. These four phases are an effective way of organizing the variety of jobs and techniques which are part of the overall process of designing and implementing a survey.

Construction of the interview schedule can go on simultaneously with the sampling procedure. There are specific techniques for designing an effective schedule which should be used as guides. But the schedule of questions, as an instrument, should be created by all members of the staff who have an interest in the topics to be included in the study.

The preliminary evaluation of the survey design and the instrument (the interview schedule) should come in the early part of the data collection phase. There are various types of studies (pilot study, pretest, trial run) which test out different aspects of the design and instrument until they have been put in their final form.

Since this evaluation is a continuing process, it also becomes the basis for training personnel who will be involved in the field work and processing the data. Once the interviewers and other operational staff have been trained, then full-scale data collection can begin among the sample of respondents designated in the sampling plan.

Throughout the interviewing phase there must be continual scrutiny of the completed schedules to make sure that procedures are being followed accurately and all relevant questions are being asked. This control of data collection must be imposed so that the results are complete and meaningful.

The data processing phase involves two types of procedures which transform the responses written on the interview schedules into statistical results which can be applied to resolving the original research problem. First, the responses must be checked and classified into certain descriptive, numerically coded categories. Then this coded data must be

collated and summated and statistically tested (where appropriate) on the computer to provide the final set of data on which the research report will be based.

Although we treat these four phases separately in the following sections of the manual, it should be emphasized that they are not separated in practice. Each activity tends to overlap in time and must be integrated with all others in order to produce a smoothly functioning research operation.<sup>1</sup>

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<sup>1</sup>A more detailed, specific checklist of 17 points appears in C. Backstrom and G. Hursh, Survey Research (Evanston, Illinois: Northwestern University Press, 1963), p. 19.



## CHAPTER VI: RESEARCH DESIGN

Surveys vary greatly in their scope, their design, and their content. As in any other research, the specific characteristics of any survey will be determined by its basic objectives. The statement of the essential questions which the research is intended to investigate delineates in large part the universe to be studied, the size and nature of the sample, the type of interviewing to be used, the content of the questionnaire, the character of the coding, and the nature of the analysis. Specific survey methods vary according to specific survey objectives.<sup>1</sup>

### Formulating the Problem and Objectives of the Study

As suggested above, the crucial decisions in survey design are those which delineate the problem and objectives of the survey. Suppose that an important aspect of the comprehensive plan involves the question of relocation of industry in a large metropolitan area -- how could one state the problem and specific objectives?

The general problem might be stated simply enough as "The Impact of Industrial Relocation on the Metropolitan Area." But there may be no single "correct" statement of the specific objectives of the project. Desirably, these will be evolved through a number of discussions and decisions on the part of all members of the research and planning staff.

With respect to theoretical objectives the investigators will have to determine whether they are interested in large-scale industry or small-scale or both. Will they focus on primary or secondary industries? Are

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<sup>1</sup>A. Angus Campbell and George Katona, "The Sample Survey: Technique for Social Science Research" in Leon Festinger and Daniel Katz, Research Methods in the Behavioral Sciences (New York: Dryden Press, 1953), p. 17.

they going to study: (1) The factors (social, economic, political) affecting industry decisions to relocate outside cities? (2) Survival rates of businesses forced to relocate by Urban Renewal or highway construction? (3) The impact of new industries on the communities where they relocate? (4) The types of personnel which choose to remain in the city or move to the new locale? (5) The policies and attitudes of unions and professional organizations toward industrial relocation? Decisions on these and other related questions will determine the theoretical scope and depth of the inquiry.

It must be emphasized that these decisions will be closely connected with some more specific, practical (or possibly tactical) objectives of the study. Take the following as an example of this type of situation demanding choice of specific objectives. The planning group has a tentative hypothesis: successful industrial relocation must take place in coordination with housing construction in the "new town" developments at a distance from the core. Will the purpose of the study be to influence decision-makers<sup>1</sup> (in this instance company executives and financial institutions) to consider suburban relocation? Are you interested in checking out the opinion of experts<sup>2</sup> (e.g., economists, industrial

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<sup>1</sup>In discussing types of interviews Madge suggests that there are three types of persons (potentate, expert, and person) who can be interviewed for three types of reasons (enlisting cooperation, gathering facts/opinions, or both) making nine categories in all. See John Madge, The Tools of Social Science (London: Longmans, 1953), pp. 144-53.

<sup>2</sup>For an "examination of experts" within planning itself, see F. Rabinowitz and J.S. Pottinger, "Organization for Local Planning: The Attitude of Directors," Journal of the American Institute of Planners (January 1967), pp. 27-32.



location experts) regarding the validity of the hypothesis relating industrial relocation and housing construction? Or is your major purpose to interview the people who might be most directly affected by any general move to relocate (e.g., the company labor force)?

Choices among these practical objectives will most certainly affect some of the decisions regarding the theoretical scope of the study. For instance, a study involving interviews with decision-makers and/or experts will focus quite directly on the technical issues of growth, relocation, and housing. The resulting data will be a combination of their knowledge and attitudes toward these as economic and financial problems. However, if the population under study is the company labor force, greater emphasis would be put on the actual experiences and expectations of the families involved. And the data collected would include their attitudes toward moving, their various housing and facility needs, commitment to their present neighborhood, etc., as related to their socio-economic background.

Again it must be stressed that no one of these approaches is necessarily "correct." Instead, the investigators must be aware that certain practical choices will preclude obtaining "all" the relevant information. The investigators must set priorities in determining which approach will give them the data most important to solving the problems at hand.

Therefore, it is always the definition of the problem which will determine the kinds of information gathered and the conclusions reached. The research process can never be totally objective (or mentally "sterilized"). Accordingly, every effort should be made to have the choices

(of objectives, population, type of information, etc.) open to discussion and debate before the research framework is put in its final form.

### Translation into Specific Empirical Dimensions

The objectives of the study, both theoretical and practical, will suggest the general outlines of the population to be surveyed and the information to be collected. But a more exacting definition of the specific population to be surveyed, i.e, the universe, and the required data must be agreed upon before the processes of sampling and schedule construction can be put into operation.

### Varieties of Universes:

There are a variety of universes which can be surveyed depending on the problem under study. Many surveys have taken the national population as their universe, since the nation is a basic political, economic, and social unit. Government agencies concerned with overall patterns of demographic, political, and economic behavior are the most frequent sponsors of such national cross-section surveys.<sup>1</sup>

However, where the focus of the research is a more restricted problem, the universe may be defined as an individual city,<sup>2</sup> an

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<sup>1</sup>Most significant is the Current Population Survey carried out by the Bureau of the Census. There is also the Survey of Consumer Finances conducted by the Survey Research Center of the University of Michigan for the Federal Reserve Board since 1946. In England, there are frequent national surveys carried out by the Social Survey, a governmental agency whose function is to collect information through sample surveys for interested departments of the British government. Recent comprehensive planning in Britain has involved increased use of the services of the Social Survey.

<sup>2</sup>Since 1951 the University of Michigan has undertaken a continuing study of the Detroit Metropolitan Area which is based on annual sample surveys. The Detroit Area Study (DAS) serves many functions, among them the training of social scientists and the gathering of data used in planning and policy formation.

occupational group<sup>1</sup> or populations distinguished by some common behavior or experience.

In order to outline the variety of possible universes we can again make use of the relocation example suggested in the previous section. Where the objective is to discover the factors affecting industry decisions to relocate (alternative 1), the universe could be defined as all top level executives of industries in the metropolitan area. Then the researchers would collect the relevant information on social, economic, and political factors from a sample of these high-level decision-makers.

To obtain an estimate of survival rates of businesses forced to relocate by Urban Renewal or highway construction (alternative 2), the universe would have to be defined as all businesses subject to forced relocation during some specified period of time. These businesses are distinguished from others by their common experience of forced relocation, and one can draw a sample from among them to estimate the over-all survival rate.

If the comprehensive planner is concerned with the impact of new industries on the communities where they relocate (alternative 3), then he would want to sample a broader and less specific universe. This might take the form of a general cross-section of all persons employed in the new community.

Where interest is focused on personnel, one could choose to analyze a somewhat different universe. One important personnel problem might

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<sup>1</sup>There are continuing studies of farmers done by the Department of Agriculture. Also during World War II there were the studies done by the U.S. Army which resulted in publication of the volumes by S.A. Stouffer, et al., The American Soldier (Princeton, New Jersey: Princeton University Press, 1949).

be to know which types of employees choose to remain in the city and which move to the new locale (alternative 4). For this question the researcher needs a cross-section sample of those who were employed when the industry was still in the city plus a cross-section of those now employed in the new community.

One other factor involved in this whole situation is that of the policies and attitudes of unions and professional organizations toward industrial relocation (alternative 5). Here the universe might include the leadership of various white-collar and blue-collar organizations which are represented among industry executives and employees. Information from a sample of these leaders could be supplemented by data from a sample of their policy statements and documents.

This detailed discussion of five alternative approaches to the problem of relocation underlines, once more, one important factor of research: the character of the universe will depend largely on the objectives of the study.

#### Types of Content:

These objectives will also suggest the scope of the data to be gathered in the survey design. The content of survey questions can be classified into the following areas:<sup>1</sup> (1) personal data, (2) environmental data, (3) behavioral data, and (4) data on opinions, attitudes, motives, expectations, and levels of information.

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<sup>1</sup>As indicated in Campbell and Katona, op. cit., pp. 30-33. The balance of information collected in each of these categories will be determined by the framework of the study objectives.

Where the unit of analysis of the survey is an individual (or family),<sup>1</sup> the schedule will often include questions regarding age, sex, education, occupation, income, religion, nationality, group membership and many other personal-social characteristics of the respondents. These personal data serve two functions. They are the basic "framework" variables used in analyzing other types of data obtained in the survey, suggesting the patterns of relationship among various pieces of information. In addition, these personal data provide a means of checking out the "representativeness" of the sample which has been chosen.<sup>2</sup>

It is important to know certain facts about the circumstances in which the respondent lives, as described by the respondent. These environmental data might include information about the character of the local neighborhood, size and quality of the dwelling unit, the proximity of relatives and friends, the respondent's opinion of the adequacy of schools, recreation, and other facilities. These facts can be related to social and geographic mobility of individual respondents and can be used to suggest measures of "neighborhood cohesion" and utilization of public facilities.

With the inception of the various "origin-destination" surveys in transportation studies, planning has made use of one type of behavioral data, i.e, travel to and from given points and along certain corridors. But there are many other kinds of behavior which can be successfully

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<sup>1</sup>Where the unit is a business, a welfare agency or other organization, similar types of data on its "corporate person" would be collected.

<sup>2</sup>For further discussion of this issue see the later sections on sampling and the problem of non-response.

surveyed and put to use in comprehensive planning. Questions about past housing moves, voting, changing jobs, buying a house or a car, use of school, hospital and recreational facilities, and more extensive questions about the use of public and private transportation for different kinds of trips (job, shopping, vacation, etc.) could be included in a study of relevant social behavior.

One large area of inquiry which has gone largely unnoticed by comprehensive planners is data on opinions, attitudes, motives, expectation, and levels of information. They go unnoticed for many reasons but chiefly because this is the area in which there is least likelihood of data being available from non-survey sources. It is important that planners know "who" is for or against certain public issues (e.g., neighborhood schools, integrated housing, commercial versus residential development, etc.) and "why" they hold these attitudes and opinions. It is also necessary to determine the level of information about various planning programs and facilities (e.g., Urban Renewal activities, recreation facilities, etc.). Through this process of discovery, the planner can begin to understand why there is apathy in certain parts of the community, while there is full participation or active hostility among other sections.

By obtaining an optimum balance of these four types of data, comprehensive planners can have access to information from the full spectrum of their various "publics." This information can be crucial in practice because one "public" can defeat a particular proposal if planners are unaware of public sentiment.

Survey Design

The priority given to data on different segments or aspects of the community will be contingent upon the objectives of the survey planner and the policies of his agency. But the usefulness of the total survey project is heavily dependent on the choice of the survey design.

By "survey design" we mean the specific pattern which outlines the type of sample to be selected and the data collection procedure to be followed. The most successful survey design for present purposes is one which yields data in a form which is readily transferable to the comprehensive planning process.

Types of Survey Design:

Survey designs have been categorized in many different ways,<sup>1</sup> but the following typology<sup>2</sup> is the clearest for our purposes: (1) Unweighted Cross Section; (2) Weighted Cross Section; (3) Contrasting Samples; and (4) Successive Cross Sections. The term "cross section" implies a sample which gives representation to all elements (in most cases all types of people) in the "population" to be studied.

The single-time unweighted cross section is the most familiar and simplest survey design. It is the best means for determining the characteristics of a population at some specific point in time. For example,

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<sup>1</sup>For a short, concise discussion of the problems of various survey designs which do not meet the requirements of the standard controlled experiment see, S.A. Stouffer, "Some Observations on Study Design," American Journal of Sociology, LV (January 1950), pp. 355-60.

<sup>2</sup>See Campbell and Katona, op. cit., pp. 21-30.

an advisory regional planning commission, comprised of representatives from each of the municipalities within the metropolitan area, may want to gauge public opinion concerning consolidation of existing governmental units. It would then select every Nth person in the metropolitan area to ascertain his attitudes and opinions about governmental reorganization.

There are other types of planning studies which would make use of an unweighted cross section. Part of the comprehensive plan may necessitate mapping the location and characteristics of multi-problem families living in the urban area. Through systematic selection of every "Nth" card from the files of the Department of Welfare, it would be relatively easy to obtain the addresses of an unweighted cross section of these families.

As an additional related study, interviews with this sample of families could provide information on their attitudes to and beliefs about the existing welfare programs which would be correlated with data on the kinds of municipal services they have actually received (obtainable from their Welfare Department files). The principal object of the correlational analysis is to allow planners to draw some inferences about the types of families "best served" and "worst served" by present welfare facilities and programs, or other government services.

A second variation of the basic cross section survey is the weighted cross section. This design involves the deliberate oversampling of some specific group of the designated universe. This group has special importance for the survey, but it is known to be a relatively small fraction of the total population. Thus, if the planning department were interested in the creation of a new cultural center as part of the central business district plan, it would want to obtain suggestions and preferences from



that group in the population who would use these facilities most intensively. It would then be necessary to formulate a survey design which would include a large number of theater, concert, and museum goers. One way of reaching this group would be to double or triple the sampling rate in city blocks having high rentals and/or housing values.<sup>1</sup> This would be done on the assumption that people living in expensive housing would be much more likely to make use of these facilities.<sup>2</sup>

The two preceding types of samples called for representation of persons with all possible types of experiences and backgrounds who form part of the universe to be analyzed. However, in some cases where one has more complete or specific information about a problem, it is more efficient to use a different kind of research design employing contrasting samples. These are samples drawn from groups which are already known to have had different experiences with regard to the variable most important to the study.

Let us take the industrial relocation example again. Here one would be interested in talking to two contrasting samples of the employees in factories which have relocated. The purpose of the survey would be to discover differences in the attitudes and characteristics of those employees who remained in the original location and stopped working for the firm, and those employees who moved and continued working in the relocated factory. Discovery of significant differences between these two groups

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<sup>1</sup>This procedure was used in A. Angus Campbell and C. Metzner, Public Use of the Library and Other Sources of Information, Institute for Social Research, University of Michigan, 1950.

<sup>2</sup>Of course, whenever oversampling is done, it is necessary to weight these cases down to their proper contribution to the total sample when the data are analyzed.

who have been in the situation of having to make a forced choice (to stay or to go) could have many implications for a comprehensive plan.

First, it would give information of direct use in projecting the population composition of newly-developed areas. These kinds of data are vital to functional planning for school size and location, recreational facilities, shopping centers, etc. Also, it would contribute extensive data on the attitudes and expectations which affect the decision to move. This would aid in planning the facilities of "new towns" so that the choice to relocate becomes more attractive to a larger proportion of the population. It could also suggest means for retaining people in redeveloped or rehabilitated neighborhoods in the core city where that is the object to be achieved.

In these three preceding survey designs -- unweighted cross section, weighted cross section, and contrasting samples -- the relevant data is collected only once.<sup>1</sup> However, where the researcher is interested in studying patterns of change it is necessary to have measurements at successive points in time. In survey research, two types of study use the procedure of sampling successive cross sections from the same population: the before-after design and the study of trends.

The before-after design is set up to measure the effect of some stimulus (e.g., a piece of legislation, a new planning program, some economic or political crisis) on a population. To assess accurately the impact of this stimulus one would have to get a measure of the situation

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<sup>1</sup>In time, that is, although it may be gathered from more than one sample. Thus, the contrasting samples design is referred to as simultaneous cross sections by some authors.

both before and after the event has taken place. Suppose the planning department wants to obtain a valid, reliable measure of the effects of a new Rent Supplement or a 221(d)(3) housing program. Then it must have complete information about the living arrangements of people in their old locations as well as once they have moved into the new location.

The need for this type of research design has come up repeatedly in analyses of the impact of Urban Renewal programs.<sup>1</sup> In many reports the data on "relocatees" (individuals and families) indicate that they have moved to similar or improved housing conditions.<sup>2</sup> But critics of these reports (and of present relocation practice) have often pointed out the inadequacy of information gathered after the fact. These inadequacies include: (1) incomplete coverage of all persons concerned (especially single individuals), (2) a simplistic focus on physical amenities, and (3) lack of data on the basic social needs and expectations of those forced to relocate.

All this goes to suggest that evaluations based simply on an "after" measure are not enough. There can be no accurate index of improvement or decline unless there is a baseline from which to measure the changes. And this baseline can best be constructed from data which is gathered

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<sup>1</sup>For general discussion and criticism of these programs see Herbert J. Gans, "The Human Implications of Current Redevelopment and Relocation Planning," Journal of the American Institute of Planners, XXV, 1 (February 1959), pp. 15-25.

<sup>2</sup>However, careful analysis of the "after" measures often indicates that there is a "selective loss" of those cases where housing accommodation is adequate but cost is significantly greater after relocation.

by the researcher before the stimulus (e.g., relocation) enters the scene.<sup>1</sup>

Often the complexity of the events in question makes it necessary to set up the research program on a continuing basis. This becomes an extension, in time, of the before-after design -- the study of trends. In this situation data are gathered more than twice, and measurements are spaced over an extended period of time rather than on each side of a specific event.

Used traditionally to study consumer finances,<sup>2</sup> and patterns of sickness,<sup>3</sup> this technique is applicable to many types of information necessary in planning practice. Data on attitudes toward new highways, education, housing, Community Renewal Program or Model City proposals, or revisions of the zoning ordinance, for example, could become available as continuing "social inputs" in the planning process.

In virtually all the preceding examples of research designs we have discussed stimuli introduced by forces (economic, political) or people (planners, researchers) outside<sup>4</sup> the immediate situation of the people

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<sup>1</sup> Obviously there will be some occasions when it is impossible to gather "before" data directly. In these cases, with some ingenuity, one can find ways of estimating or reconstructing the "before" situation, e.g., through having respondents recall earlier information, by use of other data sources and/or related survey materials. Some of these techniques had to be used by Deutsch and Collins in their study of the impact of integrated housing on race relations. See M. Deutsch and M. E. Collins, Interracial Housing: A Psychological Evaluation of a Social Experiment, University of Minnesota Press, 1951.

<sup>2</sup> There is a Survey of Consumer Finances conducted annually to study fluctuations in the economic status of the population.

<sup>3</sup> The British Survey of Sickness reports each month on prevailing rates of sickness, incapacity, and medical consultation.

<sup>4</sup> But not totally removed as they are all part of a larger social system. This is a fact which too often goes unrecognized by those concerned with planned change.

affected. However, in comprehensive planning one must be just as concerned with the effects of "internal stimuli," i.e., events which are not controlled or manipulated by elements outside the situation. Thus, one should also consider seriously the importance of religious, ethnic, and political organizations as factors of change.

Future comprehensive planning will have to take into account the impact of sit-ins, school and rent strikes, passive resistance among urban minority groups, etc. No amount of praising or damning of the role of these movements in overall social change will substitute for extensive empirical data on their impact. A good deal of this information can only be obtained from surveys of people and areas -- before, during, and after the "action" takes place -- in order to establish the trend line.

#### The Controlled Experiment:

Before closing this outline of certain of the most common types of research designs, it is necessary to make one further point. That is, all these designs are essentially parts of the ideal model of the controlled experiment.<sup>1</sup> This model, shown in the diagram below, indicates what we should have "in theory" and what we are missing "in practice."

Diagram 2 says that one must have measures before and after for the experimental group and a control group (matched with the experimental but not exposed to the stimulus or experimental treatment). Then the test of whether a difference  $\underline{d}$  is attributable to some stimulus (or experimental treatment) depends on whether  $\underline{d}$  is significantly larger than  $\underline{d}'$ .

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<sup>1</sup>This has been taken from S. A. Stouffer, op. cit., p. 356.

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Diagram 2.

Stimulus or  
Experimental Treatment

	Before	After	
Experimental Group	$x_1$	$x_2$	After - Before $d = x_2 - x_1$
Control Group	$x'_1$	$x'_2$	$d' = x'_2 - x'_1$

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Suppose a planning department wants to evaluate the impact of new schools on urban neighborhoods. The objective is to discover whether these schools actually can reduce the outmigration of middle class families to suburbia. Then the research design would have to include data from two neighborhoods at two points in time in order to meet the standards of the model above.

That is, it would be necessary to match two neighborhoods as to socio-economic status (and other relevant characteristics like religious and ethnic-racial background) and interview a sample of parents in each concerning their expectations of moving, evaluation of local schools, etc. The results of these interviews provide the measures called  $x_1$  and  $x'_1$  in the model.

Then a new school would be built in one neighborhood (experimental group) but not in the other (control group). At its completion the same groups of parents in each of the neighborhoods would be interviewed again using the same or similar questions as in the earlier set of interviews.

The data from this second set of interviews gives the measures called  $x_2$  and  $x'_2$  in the model.

If more parents in the control group are planning to move (or have already moved) to suburbia and indicate greater dissatisfaction with the local school than those parents in the experimental group ( $d' > d$ ), then the planning department is justified in concluding that the new school has some marked positive impact. But if results for both groups show similar growth of dissatisfaction and intentions to move out ( $d' \leq d$ ), then all one can say is that the new school has had no impact that is presently measurable.

#### Sampling Techniques

Before discussing the details of sample design and procedure<sup>1</sup> it is important to review some of the reasons for making use of statistical sampling in preference to doing a complete census of the relevant population.

In practical terms the investigator often finds that the cost of interviewing every individual person (or family) becomes prohibitive. Even with the financial assets to support a large, well-trained staff the time span necessary to gather all the interviews would itself introduce many "uncontrolled factors." Different seasons of the year, changes in the tax rate, changes in the party in power, condemnation of some area for Urban Renewal or highway purposes -- all these events might contribute to very different patterns of response.

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<sup>1</sup>The most comprehensive presentation of sampling designs and techniques appears in Leslie Kish, Survey Sampling (New York: John Wiley and Sons, 1965).

Possibly even more important is the factor of oversensitizing the population. The researcher is dealing with people who communicate with one another. And, unless he specifically wishes information about his survey to become part of the neighborhood "grapevine," he will find that later respondents have been "contaminated." That is, they will have received many second-hand accounts of the contents and purposes of the survey which will then affect their own responses in unpredictable ways. In this situation the researcher no longer has X number of independent respondents, but an unmeasurable number of distorted impressions from groups of interdependent respondents. These considerations become particularly important in any type of recurrent annual survey, e.g., the Detroit Area Study.<sup>1</sup>

By interviewing a sample of the population we find that the effects of time lag and oversensitizing can be minimized, while at the same time reducing the cost of the survey to within feasible economic limits.

In any inquiry of statistical importance it will be necessary to enlist the active help of an experienced statistician. In such cases close consultation and cooperation are essential at all stages of planning and execution.<sup>2</sup>

With this caveat firmly in mind, it is necessary to discuss some alternative sample designs and various sampling techniques that have been used most successfully in survey research. A good design is based on the theory of probability sampling which specifies the chance (probability) that any person will be included in the sample. This theory

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<sup>1</sup>The Detroit Area Study is a program of continuing sampling of the Detroit area by the University of Michigan. In addition to gathering information, the Detroit Area Study is utilized as a training ground for social science students in survey sampling techniques.

<sup>2</sup>Madge, op. cit., p. 207.



also provides ways to determine the number of respondents needed to achieve a given level of accuracy<sup>1</sup> in the results. Through the use of probability samples we are able to estimate how much error results from interviewing a sample of people instead of all of them. One of its chief assets is that it permits us to determine the degree of confidence that can be placed in population estimates made from the sample data.<sup>2</sup> Each of these topics -- type of sample, size of sample, estimates of error, and confidence intervals -- will be discussed in the following paragraphs.

#### Types of Samples:

The most elementary form of probability sample, the simple random sample, gives each combination of persons an equal<sup>3</sup> chance to be included. Suppose that the planning department is interested in learning something about the attitudes toward moving and expectations about new housing among the 6,000 persons employed in a factory which is soon to be relocated to a newly-developing suburb. Suppose also that it has been decided that the method of sampling is to be "simple random sampling" and that the size of the sample will be 100 interviews. Then the most direct method of choosing respondents would be to: (1) obtain a list of all employees, (2) assign to each a unique number, and (3) using a table of random numbers select the necessary 100 employees.

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<sup>1</sup>For definitions of precision, accuracy, and bias of samples see Russell Ackoff, The Design of Research (Chicago: University of Chicago Press, 1953), passim; and Kish, op. cit., Chaps. 1, 2, and 13.

<sup>2</sup>M.H. Hansen, W.N. Hurwitz, and W.G. Madow, Sample Survey Methods and Theory. I. Methods and Applications (New York: John Wiley and Sons, 1953), pp. 8-10.

<sup>3</sup>In all other types of probability sample to be discussed each combination has a known but not necessarily equal chance of inclusion. See Kish, op. cit., pp. 36-40.

It would also be relatively easy to use a systematic sample<sup>1</sup> in this case, especially since all employees are already likely to have individual payroll numbers. Using this payroll list ordered from 1 to 6,000, it is essential to select a random starting point<sup>2</sup> between 1 and 60 (this is the nearest integer to the sampling ratio  $N/n = 6,000/100 = 60$ ). Then we would continue to select individual employee numbers at intervals of 60 to the end of the list. We should then have the necessary 100 respondents.

In both these instances the sampling was done in a single "stage," i.e., chosen directly from one listing of units (employees). However, most surveys, especially area surveys, make use of some form of "multi-stage" sampling. The following diagram<sup>3</sup> outlines the different types of

Diagram 3.

Types of Two-Stage Samples

First Stage (Selecting Groups)	Second Stage (Selecting Items)	Name of Sampling Plan
Sample*	Sample*	Two-Stage Random Sampling
Complete Count	Sample*	Stratified Sampling
Sample*	Complete Count	Cluster Sampling

\* Simple random sampling or a variation thereof.

<sup>1</sup>Kish, op. cit., pp. 113-120.

<sup>2</sup>Again making use of table of random numbers, to prevent inclusion or exclusion of any specific element or person.

<sup>3</sup>Ackoff, op. cit., p. 99.

samples which may be obtained from a two-stage sampling procedure.

In two-stage or any multi-stage random sample, we use a form of random sampling in each stage. But in stratified or cluster sampling the procedure is somewhat different, since at one or another stage in the process we take all the elements and not just a selected portion.

In stratified sampling<sup>1</sup> first we divide the population into sub-populations, called STRATA. Every sampling unit is placed in one (and only one) stratum,<sup>2</sup> and all strata are included in our first stage sample. For example, all census tracts within a state would be included in the first stage listing. Then, within each stratum (census tract), a sample is selected from the units in that stratum, e.g., x number of blocks within each census tract. The strata might also be different income groups within an SMSA, various factories within a large company, age groups within the total school population, etc. The principle(s) by which we stratify the population will depend on the research problem and overall design.

In cluster sampling<sup>3</sup> it is the sampling unit, the unit of selection, which contains more than one population element. Thus, one would choose a sample of census tracts within a state at the first stage. Then in the second stage one would plan to obtain data from clusters composed of all blocks within a tract. Often, in a large survey one combines both principles in a multi-stage sample as follows: (1) Take all tracts in an SMSA and stratify by mean income into number of strata; (2) From each

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<sup>1</sup>Kish, op. cit., pp. 75-106.

<sup>2</sup>And the sum of all units in all strata is identical with the total population.

<sup>3</sup>Kish, op. cit., pp. 148-173ff.

stratum choose a proportionate<sup>1</sup> sample of tracts; (3) For each selected tract take a sample of number of blocks; (4) Within each such block choose Z number of dwelling units. There might also be a further stage in which the interviewer selects a specific respondent within the household, by prescribed random procedures.<sup>2</sup>

#### Sample Size:

In the discussion so far sample size has been taken as a "given," but this is never true in actual research. The size of the sample is always a matter of choice based on a number of different factors. Basically sample size is dependent on the HOMOGENEITY of the population one wishes to study. By homogeneity we mean the degree to which the units of analysis (people, D.U.'s, schools, etc.) are alike with respect to the characteristics being studied.

The greater their similarity the smaller the sample can be. In the extreme cases, if each unit were identical in all relevant aspects a sample of one would be sufficient; if each unit were completely different from every other, then the sample would have to be the total population. In reality, populations tend to be well within the limits of those extremes. But it is necessary to have some estimate of the degree

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<sup>1</sup>To have a proportionate sample, the number of elements from each stratum must be made proportionate to the number of elements from each element in the population. Thus, there would be more elements chosen from large strata and fewer elements from smaller strata. For an example, see Leslie Kish, "Selection of the Sample," in Festinger and Katz, op. cit., pp. 193-98, and Kish, op. cit., pp. 82ff.

<sup>2</sup>For a succinct and effective introduction to sampling procedures of various types, their advantages and disadvantages, see Ackoff, op. cit., pp. 83-129. A somewhat more complex discussion appears in Leslie Kish, "Selection of the Sample," in Festinger and Katz, op. cit. Also Parten, op. cit., Kish, op. cit., go through all the technical, mathematical details of these different types of sampling procedures.

of homogeneity (or heterogeneity) in order to decide on the sample size. Where such data are available already (through a pilot survey, census material, welfare or social security files, etc.), one need not have as large a sample as one would need if one knew virtually nothing about the population.

Also, the choice of sampling procedure (simple random sample, stratified, cluster) will be related to the amount of descriptive information available and will affect sample size. In general, when one has enough data so that one can stratify effectively, one will need the fewest number of cases. However, with less descriptive data the simple random sample is necessary, which requires somewhat more cases. Where the researcher uses cluster sampling, he must have at least as many or more cases than the simple random sample.<sup>1</sup>

The analysis plan<sup>2</sup> also will have significant effects on sample size. That is, the larger the number of categories<sup>3</sup> by which collected data are to be analyzed, the larger the sample needed. There will be little return from a complex analysis in which many of the categories contain few or no cases.<sup>4</sup>

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<sup>1</sup>This is due to the fact that clusters are not really composed of independent units. There is usually greater homogeneity within clusters than between them. Where there are greater differences among the primary sampling units (clusters), we must have more units so that the sample may be "representative."

<sup>2</sup>This must be decided, in outline form at least, before you go into the field. See the subsequent discussion of data analysis for further details.

<sup>3</sup>These are often referred to as "breakdowns." Some of the breakdowns used most frequently in social research are: sex, age, race, or ethnicity, religion, marital status, occupation, education, income, political affiliation.

<sup>4</sup>But it is difficult to give a categorical minimum necessary for any and all analyses. Often the "rule of thumb" is no less than 5 per cell. This may be much too few, however, where there is a great variability among units in the sample.

The final set of factors which relate directly to the size of the sample are the time, money, and personnel available for the work. As in all field research, the size and complexity of the undertaking depends on these resources. If you have a 2-hour survey and can spend 2 months in the field with 20 interviewers working a 30-hour week -- then you may, with fantastic efficiency, emerge with 1,500 completed interviews.

However, in an organization devoted to the various phases of comprehensive planning these questions of time, money, and personnel become part of the overall process of agency resource allocation. This has a bearing on the size of samples to be chosen for each research project, and also on the amount of error which will be tolerated in the final results.

Sampling Error:

Even in so-called "descriptive" surveys one often wishes to make some generalizations about the larger population on the basis of data from a sample. But statistical theory indicates that any measure obtained from a sample will be only an estimate of that characteristic in the population.<sup>1</sup> So that if, in a sample, it is found that 75% of Negro children are attending segregated schools, this will not be the exact proportion in the total population for whom schools are being planned.

This discrepancy between the sample estimate and the population value<sup>2</sup> is called sampling error. And the amount of sampling error built into any sample design affects the precision (reliability) of all resulting

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<sup>1</sup>Hansen, Hurwitz, and Madow, op. cit.

<sup>2</sup>Defined as the value that would have been obtained if the entire population had been interviewed rather than just a sample.

estimates. Where judgment<sup>1</sup> or quota<sup>2</sup> samples have been used, there can be no adequate information on how much error is involved. This limits confidence in the reliability of sample estimates and therefore their use is not advised.

But when probability sampling is employed at all stages, there is much greater control over the quality of results. From statistical theory (based on the characteristics of the normal distribution) it is known that the chance of errors is related to sample size.<sup>3</sup> That is, as sample size increases, the chance of such errors is reduced. With smaller sampling error the precision of the estimates increases.<sup>4</sup>

Therefore, one doesn't have to gamble on the precision of the results. One can determine in advance of the field work the level of precision that is necessary and design the sample accordingly. And when work in the field has been completed, certain statistical tests can be used to evaluate the level of precision obtained in the sample.

In some situations it will be possible to tolerate a rather large discrepancy between the sample estimate and the actual value of some characteristic in the population. Especially in an exploratory or pilot study used to obtain rough estimates an error of 10% could be permitted.

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<sup>1</sup>Obtained by selecting some subgroup of the population which, on the basis of available information, can be judged to be representative of the total. There would be a complete count or subsample of this group.

<sup>2</sup>First classify the population by pertinent properties. Then determine the desired proportion of the sample from each class. Fix quotas of types of respondents for each interviewer.

<sup>3</sup>See Hubert H. Blalock, Social Statistics (New York: McGraw Hill, 1960), pp. 135-141, on the Central Limit Theorem and the Law of Large Numbers.

<sup>4</sup>Larger samples offer a greater chance of including all variations in a heterogeneous population. There is a greater likelihood of their being fully "representative" of the total population.

For example, the Redevelopment Agency may want to know how many people have a good working knowledge of what Urban Renewal is. Presume that in the sample only 15% of respondents have a clear notion of the purpose of Urban Renewal and are familiar with any local projects. This means that in the total population the actual percentage lies somewhere between 5 and 25%. Regardless of which is closer to the actual level of information, it is apparent that in general it is quite low. But this basic data is sufficiently precise to tell us that some form of public education program will be necessary if planners wish to inform larger portions of the community about Urban Renewal activity and future plans.

In contrast, suppose it is known that over the past ten years a steady 25% of the city population have made use of existing health and welfare programs, but at the same time another group of potentially eligible clients have not made use of these services for various reasons.<sup>1</sup>

It is important to get a very precise, carefully tested estimate of the "unserved," since budget allocations for these services are closely tied to the exact number of clients. Only a very small error, 2% can be tolerated. It is evident, therefore, that to have such a low sampling error one must (1) take a very large sample of residents of low-income areas and (2) question them quite carefully (but sympathetically) about why they have not made use of these services for which they are supposedly eligible.

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<sup>1</sup>Limitation of budget and personnel at the services themselves and/or hours and location of these services, as well as knowledge of language, bureaucratic procedure, etc. For a general discussion of these and related problems see Janet S. Reiner, Everett Reimer, and Thomas A. Reiner, "Client Analysis and the Planning of Public Programs," Journal of the American Institute of Planners, XXIX, 4 (November 1963), pp. 270-282.



### Confidence Intervals:

Even with a large, carefully designed sample, one can never be absolutely sure that population value is not outside the range of error one has decided to tolerate. But, as a further safeguard, one can also specify to what degree one is confident that the estimate obtained from the sample is reliable. Traditionally, this confidence is expressed in terms of a base of "100 samples identical to ours." And it is specified that in 95 (or 99) of these samples the true value will be within the estimated range of tolerated error. Therefore, in the survey above, where one could permit only 2% error, if confidence limits of 95% are set, one would need a simple random sample of 2,401. But if one wished to be confident at the 99% level one would have to interview a sample of 4,147 respondents.<sup>1</sup>

It must be emphasized that all these questions of sample size, estimates of error and confidence intervals depend upon the overall sampling plan which is chosen and the expected occurrence of the population characteristic(s) that are being estimated.<sup>2</sup> This further underlines the absolute need for close cooperation between planner and statistician which was stressed at the beginning of this section.

### Interview Schedule Construction

The discussion of research design stressed the necessity for a clear statement of the research objectives and their logical translation into

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<sup>1</sup>Parten, op. cit., pp. 305-319.

<sup>2</sup>For further discussion of these issues, see: Ackoff, op. cit.; Backstrom and Hursh, op. cit., pp. 23-66. Festinger and Katz, op. cit., pp. 175-239.

specific empirical dimensions. Careful analysis at these first two stages in the research process results in large-scale "payoffs" later on as the study continues into questionnaire, field work, and analysis phases.

For example, when the time comes to begin construction of the questionnaire, or interview schedule, the basic purposes of this instrument should have already been defined and the significant empirical issues carefully delineated. This makes it only a short step to a listing of more concrete topic areas (e.g., housing preferences, evaluation of public facilities, migration history) which must be covered by specific questions in the main portion of the interview schedule. Construction of the schedule requires that the research staff do a complete listing of these topics, to be added to or deleted as the project continues.

In organizational terms this list becomes the basis for a "division of labor" among the survey staff. Every effort should be made to encourage staff involvement by allowing each member to develop the questions for those topics of greatest interest or professional concern to him. Of course, this would include all members of the planning department staff who work daily with the problems under investigation.

This division of labor on the basis of interest and competence can become the most effective means for resisting, at the outset, one very poor habit of survey research -- a tendency to put together the schedule "piecemeal" using questions or formats which are known to have worked in other settings. There is usually nothing inherently wrong with questions collected this way, and one may even decide to use certain well-tested questions, or batteries of attitude statements, because of their proven reliability to get certain kinds of data. But one must be careful to recognize that they were designed for specific purposes and may not

necessarily get answers which are relevant to the research at hand.<sup>1</sup>

Create special questions for special needs! Where questions are being thoughtfully designed for the present research objectives they are more likely to elicit all the information called for in the study, than when collected from other sources. This also guards against problems of repetitive or irrelevant questions.

Much of this procedure of conscious criticism and reformulation of questions contributes significantly to the overall integration of staff effort in creating the final form of the schedule. It suggests that the formulation of the questionnaire may fulfill two types of functions for the research director-staff relationship. It serves the informational purpose, mentioned previously, of listing and organizing the specific data which must be gathered by the schedule of questions. It also has the second, social function to facilitate staff involvement in the research process through a division of work on the basis of interest.<sup>2</sup>

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<sup>1</sup>Obviously, this does not apply where we attempt to replicate all or part of a study done in some other city or with some other type of population, e.g., attitudes of urban Negroes toward relocation procedures. Then we want the situations to be as similar as possible in order to make valid, reliable comparisons. For these reasons we would make use of an identical schedule or one that is comparable in all crucial areas of information.

<sup>2</sup>Not so curiously, a similar dual purpose can be seen in the function of the questionnaire for the interviewer-respondent relationship. In their analysis of data collection by interviewing, Kahn and Cannell outline these two major purposes of the interview schedule. First, "it must translate the research objectives into specific questions, the answers to which will provide the data necessary to test the hypotheses or explore the area set by the research objectives." (Festinger and Katz, op. cit., p. 340.) That is, it fulfills the information function. It is a means for eliciting a set of attitudes, opinions, beliefs, and/or items of information from each respondent. At the same time, it has a certain social function to "assist the interviewer in motivating the respondent to communicate the required information." (Loc. cit.) Though the motivational skills of the interviewer are of great importance, the questionnaire itself significantly affects the interviewer-respondent relationship, and this in turn determines the quantity and quality of the data collected.

When formulating the questions for each topic area, the research staff must become involved in decisions concerning all the following related issues:<sup>1</sup> language and vocabulary, frame of reference, relevance, information level, and social acceptability. In the design of the questionnaire itself there are further problems of approach, structure and organization of the various types of questions<sup>2</sup> -- all of these affect its informational and motivational effectiveness as a research instrument.

#### Language and Vocabulary:

Turning first to the formulation of questions, the research staff is primarily concerned with the actual choice of words. What do they mean to us? Does the respondent understand them? What do they mean to him? Basically, these problems are related to the ideas of shared vocabulary and similar frame of reference.

"The language of the interview must conform to the shared vocabulary of interviewer and respondent."<sup>3</sup> It must be adequate for communication on the topic of the interview. But there is no need for the interviewer to use the same intonations, colloquialisms, etc., as his respondent. In many cases respondents may consider this as particularly inappropriate for the interviewer.<sup>4</sup> The real bases for effective communication involve:

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<sup>1</sup>Robert L. Kahn and Charles F. Cannell, the Dynamics of Interviewing (New York: John Wiley and Sons, 1957), pp. 106-130.

<sup>2</sup>Ibid., pp. 131-165.

<sup>3</sup>Ibid., p. 108.

<sup>4</sup>This may be considered downright insulting in some cases. Especially so where the white or middle-class interviewer is talking with a Negro or lower-class respondent and attempting to use unfamiliar (to the interviewer) words that are from the respondent's slang vocabulary. The only time "translation" becomes appropriate is when the respondent does not speak English. Then the entire set of questions should be asked by someone who knows the language and can translate the schedule into effective French, Italian, German, etc.

language that is understandable (without being oversimplified and/or condescending), and a manner of expression that is acceptable (by showing empathy and insight into the respondent's situation).

If one were going to interview members of the planning commissions and staffs of the city planning agencies in ten metropolitan areas, one might decide on the following as an effective question: "Do you consider the proposed Urban Renewal project as being in the public interest?" This question might be intended to open a discussion which would define their ideas of the scope of government power to obtain land for public projects, the rights of private property owners, fiscal and social costs of large-scale projects, etc.

But suppose the respondents are people whose homes are directly in the path of the Urban Renewal project. This kind of question quite likely would cause them to "turn off" immediately as sources of attitudes and information. The barriers to response would arise not only from the abstract, technical language and relatively stiff "delivery" that might go along with it, but also from a second problem -- the completely negative "frame of reference" regarding this new change in the landscape.

#### Frame of Reference:

There is a frame of reference attached to all words and phrases used in communication. That is, "each individual, on receiving a communication, must understand and interpret the information in light of his own relevant past experiences. It is this process of providing a context out of experience that gives meaning to the communication."<sup>1</sup> People forced to move as a result of a proposed Urban Renewal project bring

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<sup>1</sup>Kahn and Cannell, op. cit., p. 114.

highly critical, emotionally charged, personal frames of reference to the question. Whereas in the cases of the planning commissioners and staffs the frame of reference is the broader, less immediate (although still emotionally charged) one dictated by certain occupational principles and training.<sup>1</sup>

For many topics the frame of reference will be broader still -- national or regional in extent or characteristic of subgroups within our culture (class, religious, racial, etc.). In these situations there are some alternative research techniques available to get at the various frames of reference. On the one hand, the interviewer can make use of probing questions asking "why" a respondent feels as he does about a topic. These probes must be built into the interview schedule or become standardized procedure for all interviewers. In this way the researcher attempts to discover and make explicit the frame of reference from which the respondent answered the question.

One can, in addition, try to interpret the respondents' frames of reference through use of breakdowns in terms of region, class, age, and other types of categories. This can be done after the data have been collected. But one must have the necessary background information on the respondents and a sufficient number of cases in each category to make this a (statistically) useful procedure.<sup>2</sup>

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<sup>1</sup>However, if any of these respondents own property in the area designated for clearance, they will bring a certain personal frame of reference along with their occupational one, or possibly in conflict with it (private v. public).

<sup>2</sup>And generally most ex post facto results of this kind really need further testing to be considered valid and reliable. Otherwise, they may be only limited to the sample obtained and not be true of the whole population.

Sometimes one wants to control the frame of reference. Since interviewers will be speaking to many respondents, it is necessary to be sure that each respondent is answering the question from the same frame of reference. To achieve this control one can indicate a specific frame of reference.<sup>1</sup>

Question: "What do you expect your son to be when he grows up? I mean what kind of job would you like him to have?"

Here it is specified that the answer is to be framed in occupational terms. As another alternative one can use a question where the whole sample is known to have a common frame of reference.<sup>2</sup>

Question: "Do you think we should spend the money necessary to provide public parking downtown?"

In this case all the respondents are residents of the same city and have a common frame of reference in realizing that the question concerns the downtown of their own city.

However, as suggested previously, controlling the frame of reference becomes difficult where the respondent is under great emotional stress regarding the topic (e.g., the Urban Renewal project). Under these circumstances one cannot impose some other, more "objective" frame of reference as a condition for the answer. There is no perfect technique for making sure that responses are comparable. All one can do is include directions to the interviewer to probe carefully where responses seem tense and unusual, or where there is no response at all to the questions.

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<sup>1</sup>Kahn and Cannell, op. cit., p. 118.

<sup>2</sup>Ibid.

### Relevance of Questions:

Sometimes this lack of response occurs because respondents don't see the relevance of a question. We may consider it logical and necessary to know his income for the preceding year. But he may consider this question irrelevant to the study and, furthermore, an invasion of his privacy. However, we may get this information and more by introducing a request for income data as part of a program to discuss consumer credit, spending, and saving. As Kahn and Cannell suggest,

... The content and substance of the interview, and the interviewer-respondent relationship which has been developed, establish a context within which certain questions appear to the respondent to be appropriate, relevant, and non-threatening. Questions outside this context appear to him at best irrelevant, and possibly threatening.<sup>1</sup>

It is the responsibility of those formulating the questions to minimize the possibilities of irrelevancy and/or threat through careful pretesting of the meaning and impact of questions on different types of respondents.

### Information Level of Respondents:

Not only must questions appear relevant, they must also be adapted to the information level of the respondent. One must be careful to avoid "expert error" -- that is, "the error of ascribing to the respondent a degree of expertness in a particular field which he does not actually possess."<sup>2</sup>

Question: "Do you think that adequate funds are being made available for public housing?"

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<sup>1</sup> Ibid., p. 122.

<sup>2</sup> Ibid., p. 124.



Question: "What do you feel are necessary open space requirements for a city of this size?"

Question: "Do people in this city favor an increase in taxes for new schools?"

These are questions which can only be answered by economists, planners, or civic designers who have available to them the results of research projects and recent referenda. Their content is appropriate to ask of the average respondent, but their form is entirely too complex, too universal in scope. Therefore, it is necessary to translate the concepts, e.g., open space requirements, into a framework which is familiar and more specific to the respondent. One might ask:

Question: "How many parks are there in your neighborhood?"

Question: "How many playgrounds?"

Question: "Do you consider these too many, adequate, or too few for the area?"

These are rather general and they might be followed up with further specific questions about use by different age groups, mothers with children, etc. Then the aggregate results for the city as a whole (gained from the data in the sample) would give the planning department an idea as to how open space and recreation needs are being met and where facilities might be improved.

#### Respondent-Centered Questions:

There are other reasons why questions in their complex and abstract form should not be asked of respondents. Not only do they presume expertness which is lacking, but this very lack may upset, embarrass or threaten the respondent and make him feel inadequate. No question should force responses or confront the respondent with the need to give

a socially uncomfortable response. Therefore, the researcher should try to create a respondent-centered questionnaire which emphasizes the acceptability of a wide range of answers without demanding too much of any respondent.

These problems in the formation of appropriate questions can usually be avoided if one is aware of the basic values and needs of the people one wishes to talk to. And many of the most "sensitive" types of behavior have been surveyed successfully, e.g., birth control and contraception, child training, religious beliefs, race relations, etc., by framing questions so that they are nonjudgmental. This means, for example, that respondents must not be given unfair alternatives when asked questions about any sensitive topic. Therefore, it is better to phrase a question concerning race and public housing like choice A below rather than "loading" it as in choice B.

Choice A: "Many Negro families have had to move because their homes and apartments were in the path of the new expressway. Do you think the city is spending too much, too little, or an appropriate amount of money to rehouse them?"

Choice B: "Some people say that too much money is being spent by the city to rehouse Negro families who have been forced to move because their homes were in the path of the expressway. Do you agree or disagree?"

Further, the interviewer should not, by his voice, facial expression, or gestures, indicate approval or disapproval of the respondents' answers. It becomes clear that well-formulated questions must be combined with an interviewing approach which encourages respondents to feel that their own responses are meaningful and important to the study. Otherwise, why should people be willing to talk to us at all?

Actually, we do know some of the basic reasons why people are willing to communicate in the interview situation. Usually it is a combination of needs for influence on others and gratification for oneself.<sup>1</sup> Therefore, some respondents see the interview as a means to influence other people in positions of power -- "You tell those people in City Hall that I said...." Others are gratified to be given a chance to discuss topics in which they are interested, but usually find no adequate way to express their ideas or sympathetic person to whom they can be expressed -- "I'm so glad you see what I mean, none of my neighbors seem to care what happens...."

One must always keep these reasons for communication in mind when constructing the schedule of questions to be asked in the survey. They will affect a number of major decisions in the formulation of questions, and must be taken into account especially when one has to decide on the form the response will take, "open" or "closed." That is, will the respondent be allowed to reply in his own words, or will he be asked to select from a series of pre-assigned categories the answer that best approximates his own opinions.

#### Form of Questions:

An example of an open-ended question is:

Question: "What kinds of changes are going on here in connection with Urban Renewal?"

The interviewer would record verbatim all the changes and other comments made by the respondent in answer to this question. Preceding this question the interviewer might have asked a closed question:

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<sup>1</sup>Festinger and Katz, op. cit., pp. 336-38.

Question: "Is your present home in an Urban Renewal area?"<sup>1</sup>

The answers could be only "yes" or "no" (or DK, "don't know"), and the respondent would choose among these.

It is also possible to ask a closed question which offers a wider range of alternative answers. For example:

Question: "How much have you heard or read about this Urban Renewal program -- would you say a great deal, quite a lot, not very much, or nothing?"

In this case a respondent would choose the alternative which most closely approximates his level of information. Later these choices allow the researcher to connect various attitudes toward Urban Renewal activity with the amount of information which respondents have about the Renewal program in their city.

There are certain advantages and disadvantages to each type of question, open or closed, depending on the kind of information desired and the number of respondents to be included in the sample.<sup>2</sup> In past years, within the social sciences, the partisans of each type of question have often been adamant in their refusal to admit the usefulness of the alternative technique. However, in recent times the controversy has died down somewhat as the result of refinements in research strategies and the enormous increase in the use of computers to analyze great numbers of complex responses.

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<sup>1</sup>See Appendix B to see a complex question containing both closed- and open-end questions involving contingency choices from the Providence Housing and Environment Survey.

<sup>2</sup>Backstrom and Hursh define these questions as "unstructured" and "structured" and offer a careful listing of the assets and limitations of each form of response. They give many examples of different question formats. Op. cit., pp. 72-84. Also see Festinger and Katz, op. cit., pp. 350-53, and Selltitz, et al., op. cit., pp. 255-263.

Now the appropriateness of open or closed questions can be said to depend upon certain "situational factors." The most important of these are the objectives of the interview (or the specific part under consideration) and certain characteristics of the respondents (information level, attitude structure, motivation, and ability to communicate) which are known in advance of the interview.<sup>1</sup>

In general, one finds that an open question is more appropriate when the objective is to discover the frame of reference from which a respondent is answering the question and to learn something about the basis for his opinion and his level of information; in other words, when one wants to probe deeply and not simply record a positive/negative attitude toward some issue. The open question allows the bases of choice to emerge.

But when the objective is limited to classifying the respondent according to some attitude or characteristic, then the closed question is more appropriate. For example, if it is necessary to learn marital status, there is a known range of possible responses, single, married, divorced, separated, or widowed.

But even where the situation appears as clear-cut as this, one may run into some problems with the use of a closed question. For example, the simple issue of who works and who doesn't became a problem in a Bureau of the Census questionnaire used to ascertain the number of people in the labor market. When asked: "Did you do any work for pay or profit last week?" respondents reported what they considered was their most

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<sup>1</sup>Kahn and Cannell, op. cit., p. 132.

important activity. Students, housewives, etc., considered themselves as "non-workers." When these "non-workers" were asked a follow-up question whether in addition to attending school or keeping house they did any work for pay, the official estimate of employment was raised by more than one million persons.<sup>1</sup>

Therefore, when there are objectives which are complex or involve gaining some understanding of the respondent's frame of reference and level of information, use of an initial open-ended question may be more satisfactory than a battery of closed questions which may obscure the issues or foreclose certain alternatives.<sup>2</sup>

#### Patterning of Questions:

Within each topic area it will often be necessary to make use of several questions, both open and closed. The sequence of these questions, their number and ordering, will frequently determine both the quantity and quality of the information collected. There are various patterns which can be used, the most common of these being a funnel sequence (or inverted funnel) and an attitude or rating scale.

The term funnel sequence refers to a procedure in which one first asks the most general, open, unrestricted question in an area and follows it up with successively more restricted or specific questions. An example of this type of sequence would be:

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<sup>1</sup>G. Bancroft and E. H. Welch, "Recent Experience with Problems of Labor Force Measurement," Journal of the American Statistical Association, 41 (1946), pp. 303-312.

<sup>2</sup>For further discussion, see Kahn and Cannell, op. cit., pp. 135-143. They also present a detailed analysis of the various indirect approaches to difficult material, i.e., material which the respondent may be unable or unwilling to report to the interviewer. Pp. 143-156.

- Question: "What do you think of the plan for a new beltway system around the city?"
- Question: "Do you think there should be some form of public transportation connecting the beltway with the downtown area?"
- Question: "What kind of transportation, subway, bus, or some other form of connection?"
- Question: "Would you use this kind of connection to go downtown rather than your car?"
- Question: "How frequently would you use it?"
- Question: "How much do you think the fare should be for a round trip?"

This limited example indicates roughly the way in which the inquiry is gradually narrowed down to certain precise objectives. In this situation planners are interested in estimating how many people would use connecting mass transit lines, where the stations should be located along the beltway, and how much people would be willing to pay as fare. All these issues could be probed with the funnel sequence, and at the same time one would obtain some basic information on attitudes toward the beltway system itself.

Sometimes it is necessary to invert the funnel, starting out with certain restricted, specific frames of reference and only then moving out to more general issues. This can be especially useful in building up to some general evaluative statement about living conditions. For example, one asks the respondent about his house and lot, local parking and traffic, his neighbors, shopping, school, recreation facilities, etc. After discussing these different characteristics of his living situation, one would conclude the battery of questions by asking: "Now taking all

these factors into consideration, what do you think of this neighborhood as a place to live?"

The purpose of these funnel sequences is to define and explore the characteristics, behavior and/or attitudes of the respondents most systematically. From the resulting data the researcher tries to classify different categories of respondents (or responses). Here distinctions are made on the basis of QUALITY; things are classified as being different from one another.

It is often desirable to make distinctions of DEGREE rather than of quality. The researcher wants to be able to show that neighborhood A is more attractive than neighborhood B, or that the population of suburb X is less opposed to public housing than the population of suburb Y. In these cases, it is necessary to do more than simply classify the responses as being different. The researcher must assign individual respondents (or their responses) to positions along a specific scale in order to make distinctions of degree possible.

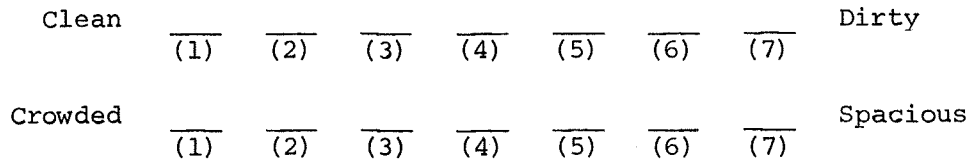
One technique for registering the degree of difference is the rating scale. The respondent is presented with a word, a phrase, or a statement and asked to indicate the extent to which the word, phrase, or statement is descriptive of his feelings. A common type of rating scale is the "semantic differential"<sup>1</sup> which makes use of a set of word pairs and allows seven degrees of response:

"How would you usually describe your neighborhood?"

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<sup>1</sup>Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning (Urbans: University of Illinois Press, 1957).





As is evident, the word pairs used are roughly polar opposites, and the respondent is asked to indicate the direction and intensity of his feelings by placing an (X) in one of the seven positions. The numbers under each position would not appear on the questionnaire but would be used in the coding of the responses.

Another technique which measures degree of difference is the attitude scale. This is generally a series of attitude statements which themselves form a scale on which respondents can be ranked. Often this type of scale is used to indicate the degree to which different respondents are "conservative" or "radical," "authoritarian" or "democratic," "prejudiced" or "tolerant," in relation to others in the sample.<sup>1</sup>

To estimate the degree of tolerance toward heterogeneous neighborhoods, both in terms of land uses and types of people, planners might make use of the following series of attitude statements:

CIRCLE ANSWER

"It is very convenient to have stores, restaurants, and a doctor right here in the neighborhood."      Agree    Disagree

"All types of people can live together in this area without causing any trouble."      Agree    Disagree

Respondents would be asked to indicate whether they agree or disagree with a set of five to ten statements like these. Then the number of agreements

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<sup>1</sup>This is an instance in which a consultant trained in the social sciences can be of considerable assistance in developing criteria for making such classifications.

or disagreements circled by each respondent gives his "tolerance" score. Summing these scores for the sample of respondents in different neighborhoods gives a rough measure of the level of tolerance within a neighborhood. It is important to compare ratings on this attitude scale with the actual degree of heterogeneity/homogeneity in the area.

There are various techniques for rating and attitude measurement (Thurstone, Guttman, Likert, Coombs) which can be adapted to different types of planning problems investigated in the interview schedule. The general approach and details of each technique are best demonstrated in specific books on scaling procedure.<sup>1</sup>

#### Sequence of Topics:

Thus far, the discussion has focused on the problems of sequence and pattern of questions within a particular topic. Now the discussion turns to the organization of various topics and sequences of questions within the interview schedule as a total measurement instrument.

One basic principle is that the schedule start with questions that the respondent can answer without difficulty. This is done in order to relax him and get him in the mood to answer fully and unselfconsciously. However, the opening sequence should not be special "can opener" questions, but a careful selection of items from among those that have been designed for the questionnaire.

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<sup>1</sup>There are general introductions to scaling techniques in Selltitz, et al., op. cit., "Placing Individuals on Scales," Chap. 10; and in Gardner Lindzey (ed.), Handbook on Social Psychology (New York: Addison Wesley, 1954), article by Bert F. Green on "Attitude Measurement." See also the article by Clyde Coombs, "Theory and Methods of Social Measurement," in Festinger and Katz, op. cit.

The sequence of topics after these opening questions should be arranged so that each appears to arise out of the previous one or be related to it. Take the following sequence of topics as an example:

Evaluation of Neighborhood Facilities and Services  
Migration History (past housing and moves)  
Image of the suburbs

These topics lead naturally from one to the other if each battery of questions is effectively framed. The questions about the neighborhood facilities start the respondent thinking about the neighborhood in which he is presently living. The questions about past housing and moves will suggest certain evaluations of different types of dwelling units and neighborhoods. Then the questions about the present neighborhood can be connected to characteristics of past neighborhoods. All of this should lead to ideas about future neighborhoods, most particularly to life in suburbia as an alternative living area to the central city.

Where such transitions cannot be made smoothly by the respondent, there are statements and phrases the interviewer can use to "shift gears" from one area to another:

"Well, that seems to be all we need to talk about in terms of your trip to work. Now let's turn to your job itself. You said you are a (SPECIFY MAIN JOB)."

These shifts are also made easier when the interviewer is instructed to sum up in a sentence or two what has gone before. This is done in order to give the respondent some notion of "where they are" and of "where they will go from there."

Generally, the most challenging questions, those which are difficult or delicate or which might appear threatening, should be scheduled toward the close of the main part of the questionnaire, when there is usually good rapport between the interviewer and respondent.

The final section of the interview schedule should include those demographic and background questions<sup>1</sup> which are necessary for the analysis of the data on beliefs, attitudes, and expectations.

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<sup>1</sup>Backstrom and Hursh, op. cit., include a number of check-lists of these which are helpful in formulating coding categories for one's own particular study. Pp. 97-107.

Preliminary Evaluation of Design and Instrument

A great deal of discussion, rewriting of questions and reorganization of batteries of questions will go on during the process of creating the interview schedule. Similarly, various sampling plans will be suggested and discarded before one arrives at a choice of plan which seems to meet most adequately the objectives of the study. These are all necessary steps in setting up the research design that successfully implements the purpose of the project.

The most effective means for evaluation all these choices is to put the research design into operation -- to see how it actually works in the field. However, it would be a waste of resources to start collecting the total number of interviews required for the overall (or "parent") study immediately. Instead, the research staff must make a preliminary evaluation of sample, instrument, and collection procedures.

This can be accomplished most efficiently by making use of such tools as the pilot study, pretest, and trial run.<sup>1</sup> Often these terms for different types of "offspring" research are used interchangeably. However, Ackoff makes some distinctions among them which are quite useful.<sup>2</sup> In the pilot study the researcher wants to determine what are the alternative situations he will face in actually conducting the full-scale research, what problems he will have to foresee and be able to

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<sup>1</sup>These are comparable to the architects' or planners' sketch plans, maps, and models used in the planning process.

<sup>2</sup>Ackoff, op. cit., pp. 336-345.

handle with respect to interviewers, respondents, call-backs, actual numbers of dwelling units in a cluster, etc. This pilot study can be either: (1) exploratory, e.g., probing to find out what happens if the researcher uses white or Negro interviewers when working in Negro neighborhoods, or (2) estimative, e.g., checking various characteristics of the population and/or environment, such as how many of the sample will be away on vacation during the interview period or how many people will refuse to answer a certain question.

Either way, however, the pilot study is designed basically to show what are possible alternative procedures and problems in the collection and transformation of the data. In this sense, pilot studies are descriptive since their objective is to indicate what can happen when the design is in operation.

On the other hand, the pretest is essentially evaluative in nature. In a pretest the research staff is interested in discovering which of the alternative procedures should be used. This requires that the staff set up criteria of effectiveness beforehand, so that they can decide which alternative is good enough to be employed in the large-scale study.

Suppose that criteria have been set up which specify that the study obtain information on how respondents have developed certain attitudes and expectations. More specifically, the Planning Department wants to get some notion as to how certain low-income groups develop different attitudes toward living in public housing. Then a pretest can help in deciding which topic areas are most useful in providing relevant information, which open-ended questions elicit the fullest responses, etc.

In another instance criteria may be set up which specify that a study obtain large amounts of descriptive information from people living in different areas. For this research the planning staff needs descriptive data on the condition of dwelling units and neighborhood facilities in areas slated for rehabilitation in addition to interviews with a sample of the people living in these areas. This is to be done in ten different Standard Metropolitan Statistical Areas. Here, especially, the pretest can be a significant evaluative tool. It can aid the researchers in deciding: (1) whether they must have data on all dwelling units or whether a carefully chosen sample is sufficient for their purposes, (2) how long the interview schedule has to be for the purpose of eliciting the necessary information without tiring respondents or making them hostile, and (3) which type of interviewers will be most effective and efficient. All these alternatives can be fully evaluated and the most appropriate technique chosen when the pretest has been carefully designed and carried out.

The trial run is used to get a final check as to whether (1) all possible alternatives have been considered, and (2) the most efficient procedures have been chosen. This study is designed to evaluate the operational plan as a whole before the final run.

The trial run also has another important function: it can be used to provide training for all the personnel who will be involved in the final run. The supervisors, interviewers, coders, computer programmers, etc., can all get realistic experience with the tools and materials they are to use in the large-scale study.

As a result, the trial run gives the research director preliminary information on the adequacy of staff and operations. He learns where he may need more or different personnel, where communication needs to be improved, how long it will take from initial contact with respondent to complete coded data on cards or tape. On the basis of the concrete information from the trial run, many procedural problems can be solved before the overall study goes into operation.

Often it is the combination of these tools -- pilot study, pretest, and trial run -- which offers the most effective preliminary evaluation of the quality and relevance of the data which will emerge from the study when it has been completed.

#### Selection and Training of Research Personnel

In the overall timing of a social survey the main research staff must be selected before the design is initiated. This staff should be composed of an appropriate assortment of professional personnel recruited from the existing staff of the planning agency and supplemented by certain outside consultants. This staff could include urban planners, civic designers, sociologists, statisticians, economists, political scientists, etc.

These are the people involved in the primary stages of the research plan: formulating the research objectives, setting up the overall design, choosing the sample, creating the interview schedule, and doing part of the preliminary evaluation of the design.

Once these tasks have been completed, the study moves more directly into the operational phase. It is then necessary to select other types of research personnel who will be involved in the operational stage of the



design. These are the interviewers, coders, and other staff who will be doing the actual collection and transformation of the data.

All personnel, no matter how skilled and experienced, will require a training period in order to accustom them to the particular tasks and routines of a specific study. But especially where skill level has been sacrificed in selection, due to scarcity or high cost,<sup>1</sup> it is necessary to compensate for these limited abilities if possible. This can be accomplished to some satisfactory level through an extensive, careful training program. And with little increase in cost one can make use of different training methods to see which is most effective in closing the "ability gap." A variety of training techniques are available: programmed learning, role-playing, lectures, small group discussion, etc. Where there are a large number of persons to be trained, individuals can be assigned on a random basis to the different training techniques. Then the effectiveness of each can later be checked by examining the quality of the resulting interview schedules or data.

Also, during the training period it is necessary to deal with the problem of motivation. That is, how to involve the interviewers (and other operations staff) in the project so that they want to follow the correct procedures, take down all responses verbatim, and see the need to probe for more information where it is not freely offered.

This pattern of personal involvement and the development of a sense of responsibility for the successful completion of the project must begin during the training and pretesting phase. It is not enough simply to

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<sup>1</sup>See Ackoff, op. cit., pp. 359ff, on personnel selection procedures.

"fill-in" the background and describe the general purposes of the study, and then proceed to the operational tasks at hand. Interviewers, editors, coders, and other members of the operations staff should be encouraged to (1) make constructive criticism of language and directions within the schedule, (2) look for more efficient or less tedious editing and coding procedures, and (3) make their own decisions about working conditions where it does not interfere with any specific objective of the design. As Ackoff stresses, "...those who will follow the directives should be given design responsibilities in preparing the directives."<sup>1</sup>

Similarly, this period of training and pretesting should be used to check the adequacy of various research materials. These are the various papers, forms, furniture, machines, etc., which are required in the process of collection and transformation of the data. And this is the stage for deciding the final forms of the interview schedule.

In addition, there are certain procedural manuals to prepare: a manual on interviewing procedure from initial contact to completed schedule for the entire field staff, and directions for editing and coding for the analysis staff. Furthermore, an outline of the statistical charts and tables which will be necessary at later stages of analysis must be prepared. Through the use of such charts and tables one can double-check that all necessary data are being collected. These aid the analysis by specifying certain machine tabulation requests and computer programs which will be required at a later date.

During the period of training and pretesting, the field supervisory personnel must check transportation times to various locations, cost of making callbacks, the effectiveness of various reporting forms, and even

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<sup>1</sup>Ibid., p. 354.

the adequacy of certain supplies like maps, pencils, etc. At this same time the editing and coding staff goes through the trial run to test out the facilities in which the interview responses will be coded and transformed into "data."

All this emphasis on the preliminary evaluation of personnel and physical resources stems from the fact that there is no tested and accepted theory of selection and training of personnel as there is a theory of sampling and statistical analysis. In the selection of personnel one can only produce some "guesstimates" of the skill level necessary and numbers of people required, along with the cost of hiring persons meeting these standards. But the person(s) in charge of the operational phase must make some of these guesstimates in order to minimize the costs of hiring and training while controlling the expected quality of the resulting data.

Without tested theory to rely on, the researcher must make do with such a set of practical suggestions. The preceding discussion of selection and training is based on techniques which have been empirically effective in various survey situations. Such practical suggestions represent a compilation of the main problems discussed by social science methodologists; and their helpfulness must be assessed by those who are in charge of evaluating the selection and training procedures for each particular project.<sup>1</sup>

#### Control of Data Collection and Transmission

Means must be established for maintaining control of the operations as they are carried out by the field staff and the coding and analysis

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<sup>1</sup>For further analysis and suggested cost equations for certain procedures, see Ackoff, op. cit., pp. 345-349, and Kish, op. cit., "The Economic Design of Surveys," Chap. 8, pp. 254-295.

staffs so that procedures are in accord with the research design. Adequacy of operations cannot be assumed. It must be encouraged and controlled.

Therefore, at some time early in the planning phase the research director should set up a budget-time schedule which lays out the operations as he proposes to accomplish them. For the purpose of maintaining actual control of operations, he can make use of a "progress record."<sup>1</sup> This progress record keeps track of the number of interviews completed, work hours of interviewers and field supervisors, costs of transportation, materials, salaries, etc. The record allows him to determine if:

1. Budget-time schedule and/or specifications require revision;
2. The personnel require additional training or encouragement or should be replaced.

A careful, complete progress report aids him in getting the job done at the budgeted rate and helps him in planning further research of the same nature.

But a progress report does not tell much about the quality of the information which is being received. Quality control can be achieved only through an established procedure of inspection and verification of the data. This involves checking quality at various points in the collection and transmission process. Are all relevant questions being covered by interviewers? Are sampling directives being followed properly? Is there consistency and accuracy in coding? Are cards being punched correctly with all necessary identification of interview number, deck number, etc.?

Only by careful inspection of interviews, code sheets and computer print-out sheets can one determine how closely the research directives

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<sup>1</sup>Ackoff, op. cit., p. 356.

are being followed. Where there is error or misunderstanding, this must be corrected and one must verify repeatedly that the right procedure is being followed.

But it would be impossible to inspect each operation performed or piece of data collected. This would be too lengthy a process and too costly. Therefore, it is necessary to decide the minimum quality level which can be tolerated (in view of research objectives) and how this can be translated into a set of specifications of measurable characteristics.<sup>1</sup>

These are difficult tasks and there will be no right level or obvious set of indices. There is a wide range of possible choices and the optimum decision will be based on objectives and costs involved. But once the quality level and indices have been chosen, one can choose a random sample of operations and data to be inspected to see whether they meet the standards set. Another function of this sample is to provide limited preliminary estimates of the distribution of the results for the overall study.

In this general discussion of the organization of data collection we have stressed the need for ongoing processes of evaluation which provide the "feedback" to shift, replace, and avoid error. Only with constant scrutiny can the researcher expect to arrive at the data analysis phase with data that is "worth" analysis.

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<sup>1</sup>Ibid., p. 357.



## CHAPTER IX: GENERAL PLAN FOR DATA PROCESSING

The term "data processing" generally refers to the recording of information on punchcards, rearranging the information mechanically, compiling new information about the data, and analyzing the results statistically to yield more new information.<sup>1</sup> Therefore, undertaking any large-scale survey presupposes that the investigators have access to punchcards and the computing equipment necessary to process these data.<sup>2</sup> For, without computers, the analysis of such great quantities of material becomes a tedious, time-consuming and generally inefficient process. The use of a computer is strongly recommended for the processing of data gathered in any sample survey having more than 50 respondents and/or taking more than one-half hour to administer (to give a very rough estimate).

### Editing and Coding the Data Collected

The first step in processing the data gathered in the survey is editing the interviews as they are being received from the field staff. Editing means checking each interview for legibility and completeness of recorded answers, clear identification of respondent interviewed, and accuracy in following directions within the schedule.

Then all the responses recorded on the interview schedules must be coded before being punched into cards for the machines. In essence,

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<sup>1</sup>United Nations Handbook on Data Processing Methods, United Nations Statistical Office (New York: Columbia University Press, 1959).

<sup>2</sup>For a clear discussion of data processing and the advantages of punchcards see Kenneth Janda, Data Processing: Applications to Political Research (Evanston, Illinois: Northwestern University Press, 1965), pp. 3-11.

coding involves the mapping of verbal responses into a number system. Thus, the different codes constructed for each question give the rules for translating words and phrases into numbers. This process is reversed when the time comes to re-interpret the results from print-out sheets produced by the computers.

Coding Closed-End Questions:

Where questions are the closed-end type, the process of coding is relatively simple and direct. Codes can be drawn up before the respondents are interviewed since the alternatives are essentially precoded. For example:

Question: "Do you own this home outright, are you still paying a mortgage on it, do you rent, or what?"

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1. Owns
2. Mortgage
3. Renting
4. Shares ownership
- .
- .
7. Other (please specify)
8. Not ascertained
9. Don't Know

Even this relatively straight-forward question shows some of the rules and conventions which go into constructing a code for responses. First, since computers are to be used, there should be no more than one number punched in any single column of the card. Computers have difficulty picking up multiple punches, and there is no reason to squeeze so much information into a single column.

Also, it should be agreed, as a coding convention, that all codes will leave position 8 for those situations where the information was not obtained, and position 9 for situations where the respondent does not



know the answer. This provides for a degree of consistency in coding. In addition, certain code positions should be kept free for responses which were not anticipated.

#### Coding Open-End Questions:

Where an open-end question has been asked the coding of responses is more complex and involves many more decisions. For these questions the project director and the person directing coding operations must go through a sample of answers (sometimes up to 25% of the schedules) to determine the range and variety of responses. Only then is it possible for them to formulate a set of relevant coding categories which will encompass most types of responses without sacrificing significant details.<sup>1</sup>

The following is a sample of the extensive code used for categorizing the responses to an open-end question:

Question: "Now thinking of your present neighborhood, the one that you live in right now -- what features have made you (and your family) want to stay here up until this time?"

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#### Physical Aspects of Neighborhood

11. Close to job
12. Near to schools, churches, libraries
13. Parks and playgrounds nearby
14. Shopping, markets close by
15. Near business
16. Neighborhood is attractive, clean, well-kept-up, nice, pleasant, etc., not-too-congested, open
17. Very little traffic, away from main streets

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<sup>1</sup>See Selltitz, op. cit., pp. 391-406, for an extensive discussion of the principles of coding, training of coders, and coding reliability.

18. Quiet, peaceful, very little noise
19. Convenient -- general -- good location

Social Aspects of Neighborhood

21. Lived here all my life, for years
22. Come from this area, brought up here, don't like moving
23. Relatives live around here
24. Friends/neighbors are here in the neighborhood -- are nice;  
R<sup>1</sup> likes them

Economic Aspects of House and Neighborhood

31. Cheap to live around here -- unspecific
32. Rent is cheap, inexpensive rent
33. Can't afford to move away from here; no choice, job here,  
own home, etc.
34. Income from house

Features of House "per se"

41. Liking for present house -- generalized, e.g., "nice house,"  
"I just like this house," etc.; one-family house

General Liking

51. Just like neighborhood, Providence; good living conditions
61. Privacy
65. Too old to move
71. R says "none" or "nothing"
77. Other (make out card)
88. NA<sup>2</sup>
99. DK<sup>3</sup>
- 00 Inap.,<sup>4</sup> R answered "No" to Q 29, or gave no second, third,  
fourth, or fifth features

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<sup>1</sup>"R" is the abbreviation for Respondent.

<sup>2</sup>"NA" is the abbreviation for "not ascertained."

<sup>3</sup>"DK" is the abbreviation for "doesn't know."

<sup>4</sup>"Inap." is the abbreviation for "inappropriate."

This code was arrived at after we had gone through the necessary sample of responses. The categories were kept as close to the "raw" responses as seemed feasible.

#### Coding Procedures:

After this short, general introduction to coding it is necessary to indicate more specifically the personnel, materials, and procedures which are involved in coding and punching the data from the interview schedules.

Coders can be recruited from the existing (clerical, drafting, etc.) staff of any comprehensive planning agency. When given good training and clear directions these inexperienced people can learn to code survey data quite accurately. One built-in safeguard is a process of double-checking samples of coded material, just as samples of completed interviews were checked in order to control the quality of data collected.

As for the codes themselves, there are some general suggestions<sup>1</sup> which can be made here. But each study will require many codes and categories which must be "tailor-made" for that piece of research. As was suggested above, it is important to use only one punch to a column and only the digits 0-9. However, the researcher should not limit himself to single-column codes where the responses are many and/or complex. It is frequently more efficient to use multiple-column codes, e.g., a code which requires ten columns to record the entire answer (a two-column code which allows the coding of up to 5 different responses). Then these

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<sup>1</sup>See Janda, op. cit., Chap V, "Suggestions for Collecting, Coding and Managing Punchcard Data," pp. 125-150.

multiple-column codes should be planned so that they can be "telescoped" or "collapsed" into a much smaller set of analytical categories. As indicated in the code for the open-end question listed previously, by using only the first column of the code one can "collapse" the responses into four general categories: the physical, social, and economic aspects of the neighborhood, and the features of the dwelling unit itself.

Codes for closed- and open-end questions, along with certain coding decisions and procedures, should be assembled into a manual to be given to each member of the coding staff.<sup>1</sup> This manual should be a guide to the layout of each punchcard. It would therefore indicate the columns in which interview number, deck number and other types of identification should be punched. It also gives specifications for the cards and columns into which data from each question must be coded. Thus the manual becomes a combination atlas, dictionary, and encyclopedia of the coded materials.

In the coding process itself, the numerical translations must be recorded in a form which makes it possible for them to be punched into cards. This requires the use of printed or mimeographed sheets containing 80 columns, rather like large-scale replicas of the punch-cards themselves.

Coders can work directly on these sheets recording the necessary kinds of identification (interview number, deck number, etc.,) and each "field"<sup>2</sup> of information as directed in the coding manual. All decisions

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<sup>1</sup>This would correspond to the manual prepared with and for the interviewing staff.

<sup>2</sup>A "field" is a group of adjacent columns reserved for a given type of information. It may vary in width, but is often determined by the number of responses allowed for any given question. Thus, a "yes" or "no" response can be coded in a field composed of a single column, while the answers to an open-end question may require a field of twelve or more columns.

about code categories should be made by the research director as soon as they arise as problems.

Use of these 80-column coding sheets may seem more time-consuming than coding directly on the interview schedules themselves, but it has certain important consequences for later stages in data processing. In the first place, the keypunch operator can work directly from these sheets without having to make any particular decisions which might slow his speed or affect his accuracy. Also, because the data have been transferred to the sheets, interviews can be kept in the main research office and the chances of their being damaged or lost are lessened. This means that one can re-read the interviews at any time in order to have access to verbatim responses and to re-check the data from any deviant cases.

#### Computer Tabulation and Analysis

There are certain manipulations of the punchcard data which precede the processes of compilation and analysis. These manipulations merely arrange the data in a particular way, adding no additional information. Some typical examples of manipulative operations are: grouping of interviews by census tract, alphabetizing the names of all workers interviewed, or arrangement of sample addresses by house type. These manipulations often reduce the clerical tasks involved in data analysis, but they add no new information to that already gathered.

Compilation is the next stage in processing the data and it does add new information about the coded material. By "compilation" we mean counting, summing, computing percentages and averages for the data.<sup>1</sup>

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<sup>1</sup>U. N. Handbook on Data Processing Methods, op. cit.

Therefore, the first type of "print-outs" to be requested from the computing center would include such figures as: number of respondents by age, sex, income, census tract, percentage of respondents by each of these classifications, and the totals and percentages for other basic variables such as house type, occupation, use of public transportation, etc. The compilations by age, sex, and income can be used to check the representativeness of the sample, while the other totals and percentages can be used as raw material in specific planning programs.<sup>1</sup>

Of course, there is always a compilation of the totals and percentages for each and every question in the interview schedule. This provides the basis for further analysis of the patterns of relationship among the different kinds of responses. Such "cross-classification" is of two types, depending on the kind of information that the researcher has obtained.<sup>2</sup> For the qualitative data (things which are classified as being different from one another) only compilations are performed, followed by a limited number of statistical tests of significance which have been designed specifically for this type of measurement. However, with quantitative data (where there are differences of degree) more complex "statistical analysis" is possible. This involves tests of significance,

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<sup>1</sup>All the tables included in the case study section are basically compilations. However, our data analysis did involve many cross-tabulations not included here.

<sup>2</sup>For a general discussion of cross-classification and multi-variate analysis, see Herbert Hyman, Survey Design and Analysis (Glencoe, Illinois: Free Press, 1955), esp. Chap. V, "Problems in Treating Simple Relations Between Two Variables," pp. 179-241.

correlation and regression analysis, and other types of sophisticated statistical procedures.<sup>1</sup>

Qualitative Data:

Taking the qualitative data first, there is a procedure that can be followed in a simple statistical analysis of material of this type:

1. Obtain a basic set of frequency distributions for each question (the cumulations discussed above).
2. Decide which variables (e.g., characteristics of respondents and their environments) will be the basic framework of the data analysis.
3. Request computer cross-tabulations (called also contingency tables) which group responses by categories for each framework variable and then give response distributions on the other variables of interest.
4. Use contingency tables to indicate existence, direction, and strength of association among these variables.

These "bivariate" distributions (two variables cross-classified) as well as "multi-variate" distributions (two variables cross-classified while a third is held constant) can be obtained quickly and efficiently with many existing computer programs.<sup>2</sup> These programs will also compute various measures of the strength of association among the variables. All this takes very little computer time, but requires a great deal of careful planning on the part of the researcher if he wants to be sure to get the most for his "data-processing dollar."

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<sup>1</sup>For an extensive description of types of data and the problems of measurement and scaling see Hubert M. Blalock, Social Statistics (New York: McGraw Hill, 1960) and Bernard W. Phillips, Social Research: Strategy and Tactics (New York: Macmillan, 1966).

<sup>2</sup>Janda, op. cit., pp. 156-165, gives a selected listing of existing computer programs for cross-classification, and an exposition of Northwestern University's NUCROS program for the IBM 709 using political data.

### Quantitative Data:

The need for careful planning of computer requests is especially important where the researcher is processing quantitative data. Sometimes the analysis of quantitative data is simpler (than qualitative) since standardized statistical methods are applicable. But this means that the researcher must be aware of the type of data he has, its possibilities and limitations, before calling for the whole arsenal of sophisticated statistical techniques.

Therefore, when the interview schedule contains information on respondents' incomes and rent or mortgage payments, the researcher can obtain correlations and tests of significance which are more powerful measures of relationship than the statistics for "high-medium-low" classifications. Other examples of quantitative data amenable to correlation analysis are: years of education, family size, and age -- these are demographic variables; number of rooms, size of lot, value of house -- these are physical/economic variables; percentage of non-whites, density of persons per square mile, percentage of registered voters -- these are physical/social/political variables which are aggregate measures by census tract.

Processing quantitative data begins with simple correlation coefficients (comparable to contingency tables), but goes on to multiple correlation and factor analysis which can be done quite routinely on the computer. All this suggests that some familiarity with computer methods of data processing can be an invaluable tool for planners involved in doing an extensive sample survey.



## CHAPTER X: PREPARATION OF THE FINAL RESEARCH REPORT

Research findings must always be referred back to the original problem to see where they have provided suggestions and solutions and where they have not offered answers. The data do not "speak for themselves." Therefore, as much discussion and debate will go into formulating the connection between findings and the problem under investigation as was necessary at the beginning of the project when formulating the research objectives.

Scientific method demands that the researcher report negative findings (no relationship between variables) along with his positive results, and this has some implications for reporting survey results. Especially where such negative results go against "common sense" and local prejudices it is very important to report them.

One important final note is that research findings can be presented in many different ways. Therefore, various forms of the research report<sup>1</sup> can be set up and presented to different audiences without in any way "compromising" the results.

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<sup>1</sup>See Selltitz, op. cit., Chap. 12, "The Research Report."



APPENDIX A



## APPENDIX A

Question: "What kinds of changes have taken place in your neighborhood in the last five years?  
(IF NEWCOMER GET IMPRESSION)

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### Improvement

#### Physical -- Housing and Yards

01. Exterior of houses improved, painted, etc.
02. Lawns, yards, gardens improved
03. Trees planted
04. Sidewalks fixed
05. Hot water put in houses
06. New houses built
07. Cellars and attics cleaned up
08. People taking better care of property -- generalized
09. Well-kept-up

#### Physical -- Streets and Recreation

11. Streets paved or repaired, new street put in
12. Streets cleaner, plowed more often
13. One-way sign, stop sign, crossing guard put at corners, parking signs
14. More, better street lighting
15. Parking, parking lot provided
16. Better trash and garbage pick-up
17. Playground put in, swimming pool built, park
18. Community center built

#### Social

21. Friendlier, nicer people have moved in
22. Everyone -- all people -- improving

### Neutral

#### Physical

31. Houses moved, demolished
32. Made Urban Renewal area
33. New institutional use; school(s) built or repaired
34. New, different people, neighbors (general)

#### Social

41. Change in occupants of this (R's) house
42. Old families moving out, older people dying
43. Younger families moving in
44. People with kids moving in, more kids
45. Fewer kids, people with kids moved out
46. People from out of state moving in
47. Lots of people moving in and out -- generalized

48. People leaving to go to suburbs
49. Different religious group(s)
50. Negroes moving in

Decline

Physical

51. Houses in disrepair, unpainted, falling down
52. Yards, lots not kept up, full of trash
53. Streets dirty, full of potholes, sidewalks broken, etc.
54. Freeway went through
55. Commercial or industrial land uses filtering in
56. Institutional land use moving in, e.g., Brown University
57. Property values decreasing, neighborhood running down -- generalized
58. Schools, playgrounds, etc.
59. Conversion of houses to apartments; to rooming houses

Social

61. Negroes moving in
62. Lower-class people moving in; not as good as older ones
63. Vandalism by kids in neighborhood; trouble, noise
64. Students, transients moving in
65. People who moved in not friendly
  
71. R answers "no changes" or "nothing," same, stable
  
77. Other (make out card)
88. NA
99. DK
00. Inap., R gives no second -- sixth change

Changes in Neighborhood over Past 5 Years

CODER: To get type of changes take total number of responses and determine approximately the percentage of different kinds of responses and code according to the following categories:

1. Major changes: Improvement
2. Major changes: Neutral
3. Major changes: Decline
  
8. NA
9. DK
0. Inap., R gave no answer to Question

APPENDIX B





APPENDIX B

Question: "Is your present home in an Urban Renewal Area?"

/1. Yes/    /2. No/    /IF NO SKIP TO Q\_\_/

(IF YES)

a. What kinds of changes are going on here in connection with Urban Renewal? \_\_\_\_\_  
\_\_\_\_\_

b. Are you going to have to move from your present home as a result of Renewal?

/1. Yes/    /2. No; SKIP TO Q\_\_/

(IF YES)

c. About how soon do you expect you will have to move?

\_\_\_\_\_ years    \_\_\_\_\_ months

d. Where do you think you will move to? (GET ADDRESS OR GENERAL LOCATION)

\_\_\_\_\_  
\_\_\_\_\_

e. Are you receiving any help in arranging for this move?

/1. Yes/    /2. No/

(IF YES)

f. From what group or agency are you receiving help and what kind of aid has this been so far? \_\_\_\_\_  
\_\_\_\_\_



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