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Studying Egocentric
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STUDYING EGOCENTRIC NETWORKS BY MASS SURVEY^{*}

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and

Claude S. Fischer

Working Paper No. 284

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Institute of Urban and Regional Development

University of California, Berkeley

January 1978

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Preface

This working paper is the second in a series from the Northern California Community Study. It is intended as a reference source on the methodology we developed for measuring personal social networks in a mass survey. It describes the logic behind the study and the technical issues involved in our final survey. We also report data from two pilot studies that were conducted in order to develop the method. Later working papers will explore the associations between attributes of the respondents' networks as measured by this method and characteristics of their communities and structural positions.

C.S.F.

January 1978

Social network analysis is gaining widespread popularity in many social science disciplines, and is being used with a variety of methods from participant observation to historical demography. The increasing use of mass surveys to study social networks accentuates certain methodological issues that had been relatively ignored or left unresolved in earlier studies. These issues concern technique--how to accurately describe people's networks in a brief interview--and, more importantly, the implications for all research styles of adopting certain conceptual and operational definitions of "network."

This paper discusses some of the theoretical and practical choices confronting the survey researcher in developing a social network survey, and explains the logic behind our decisions for developing such a survey for the Northern California Community Study (NCCS). This paper is intended to serve two purposes: To facilitate interpretation of NCCS findings, and to inform researchers who are developing network surveys for other purposes.

BACKGROUND: THE USE OF NETWORK ANALYSIS IN
THE NORTHERN CALIFORNIA COMMUNITY STUDY

We developed a mass survey technique to describe people's networks for use in a study of the personal consequences of residential environments. The study asks: "What are the effects of attributes of places--attributes like urbanism and accessibility--on social life

and psychological well-being?" To answer that question, we are interviewing about 1,000 individuals living in 50 different communities throughout Northern California.

In this research, we use the concept of "egocentric social network" to describe the social milieu (or "social worlds") of individuals. A social network metaphor is commonly used in sociology to describe a set of *links* joining a set of *actors*, where each link between two actors is composed of one or more *relations*. We use the term "egocentric" (or person-centered) to differentiate our use of "network" from that of another tradition in network analysis. Our focus is on the links and actors surrounding each individual; the other approach defines a bounded group of actors--say, a political elite--and describes the structure of links within that group. (The latter approach--an extension of sociometry--is commonly used to study cliques, coalitions, and paths of influence; the egocentric approach is usually employed in studies of friendship and kinship.)

Sociologists have studied egocentric networks to discover causal associations among structural positions, personal relations, and well-being. Most successful studies of this kind have relied on in-depth interviews with a limited number of respondents (the classic example is Bott, 1971). We could not use this method in the NCCS. In order to fully test hypotheses about variations in social life among communities, it is necessary to gather many interviews in many places. This need for a mass survey forced us to develop a standardized interview that could elicit accurate descriptions of networks, could be administered by professional interviewers as one part--about 20 to 30 minutes--of an hour-long interview, and could be easily translated into machine-readable data.

In order to develop the network questions finally used in the Northern California Community Survey, we conducted two pilot surveys of approximately 80 interviews each--the first consisting solely of network questions and the second including questions on respondents' uses of the environment and on their psychological well-being--as well as a number of pretests over a period of three years. In this paper, we use the results of these surveys to explain and evaluate the strategies that were adopted.

Methods Used in Previous Mass Surveys

Other investigators have used questions about the social networks of individuals in several previous mass surveys. Most often, their strategy was to gather the names of a small number of individuals who were related in some manner to the respondent, and then to obtain detailed information about the characteristics of those persons, the nature of the respondent's relations with them, and their relations with each other. For example, the respondent might be asked to name his or her best friends or the people he or she "feels closest to" (see, for example, Lauman, 1973; Wellman, 1977, Ericksen & Yancey, 1976). Another strategy sometimes used has been to ask the respondent to describe a category of people; for example, "Do most of your friends know each other?" (Bradburn et al., 1970).

We had two major reasons for rejecting these strategies. First, the *definitions* of personal networks used in these studies were too narrow and imprecise for our purposes. In particular, the sets of names obtained in this way seemed likely to exclude one or another of whole categories of important individuals such as kin, co-workers, or co-members of organizations.¹

Our second reason for rejecting previous strategies was that they seemed to invite large and potentially systematic *measurement errors*. People interpret terms such as "best friend" and "feeling close" in a variety of ways. For example, some think of intimate kin or spouses as friends and others do not (see footnote 2). Some define "closeness" in terms of categories of relations (for example, "She is my sister, therefore we must be close."), while others reserve the term for people whom they trust with confidences or with whom they like to spend leisure time.

In addition to inviting errors from variations in interpretation, previous network strategies seemed especially vulnerable to errors in reporting. We found, in pretesting, that interviewees have surprisingly poor recall of the people they know; in the absence of extensive probing they are likely to forget important persons. Also, the sensitivity of this topic (evoking, as it does, a fear of appearing unpopular or unloved) invites respondents to pad their lists of relations with people who do not fit the description given. The result is that people who are relatively inconsequential in their lives may be included.²

Such measurement errors are especially problematic because they are likely to be systematically related to characteristics of the respondents. For example, isolated and lonely respondents are probably more likely to exaggerate, and well-educated people less likely to confuse, "closeness" with role expectations (for example, by saying "She is my sister, and so must be close.").

This paper describes our efforts to design a mass-survey method to study social networks that minimizes these difficulties. The next section discusses our approach to defining a network, and the third second section presents strategies used to describe the .

networks. In the final section we present a preliminary evaluation of the method, using data from the pretests.

DEFINING A NETWORK

Goals

Individuals' social networks are often quite extensive. The set of people that each of us are somehow related to may include distant kin, childhood friends, store clerks, co-workers, clients, people met at a party last week, members of the church, and so on. However, the time limits imposed by mass-survey interviewing permit us to learn about only a small subset of the people the respondents know.

The criteria used to select that part of the social network we are studying will strongly influence our descriptions of the social worlds of the respondents, as well as our findings about the relationships between attributes of an individual's social world and other variables such as structural position and well-being. For NCCS purposes, we wanted to consider those members of respondents' networks who had the most impact on them in two ways: by shaping their attitudes and behavior, and by influencing their well-being. In addition, we wanted to use criteria for inclusion that could be interpreted consistently by respondents, so that the networks would be comparable across them. The first step must be to clearly define "network."

A Preview of the Solution

Before presenting the problems involved in defining "network," we would like to outline the method eventually adopted. We identify the network members by asking respondents to give us the first names of people they participate with in a variety of rewarding

interactions--discussing a personal problem, borrowing money, social recreation, and so on. We try to ask about interactions that are likely to be important to most people, and at the same time are likely to be carried on with people known in a full range of contexts (work, the neighborhood, kin, etc.). These interactions include: emotional support, providing advice, regular socializing, talking about work or a hobby, help with work in the home, housesitting, and the loan of a large sum of money in an emergency.³

Respondents may name up to eight persons in response to each of these "name-eliciting" questions. The interviewer subsequently compiles all these names into one list, and then asks for more information about each person, including their sex, relation to respondent, and whether they share certain characteristics with him or her (type of work, religion, ethnicity, and spare-time activity). The final set of questions appears in Appendix A.

The list of the names of people who are sources of rewarding interactions is, in effect, our measurement of the respondent's network. This approach to measuring networks reflects our decision to define "network" in terms of exchanges. The next sections of this paper present the logic for, and implications of, choosing that particular definition.

Defining a Relation (Conceptual Definition of the Network)

An operational definition of an egocentric network is based on two kinds of choices: how to define an individual's entire social network, and how to select a subset of that network for a particular study.

The definition of "relation" bounds the network; it determines which people are to be included and which ones are to be excluded.

For example, if in a particular study we define a relation as "belonging to the same family," then the network will consist only of kin, and those who are not kin will be excluded.

We can identify three general, analytic approaches to defining a relation:

1. *Affective*: A relation is (as Laumann [1973:3-4] suggests and Wellman [1977] implies) an orientation--love, hate, respect, etc.--of two actors toward one another, a feeling about one another and/or about the *pair* as an entity.
2. *Normative*: A relation is a specific, culturally-defined set of expectations, obligations, and rights between incumbents of two social positions--in other words, a "role relation" (for example, father-son; teacher-student; neighbor-neighbor; etc.).
3. *Interdependence, or Exchange*: A relation is an interdependence between two actors, such that the actions of one affect the outcomes (rewards, punishments) of the other. The relation can be indirect, but of most interest are direct relations, or *exchanges*, so that a relation is an exchange, or a set of exchanges between two actors (see Thibaut and Kelly, 1959; Homans, 1974).

We have adopted an exchange definition of social relations because it permits us to use an exchange theory of behavior to identify the people who shape individuals' attitudes and behaviors and influence their well-being.⁴ Our decision was reinforced by our success in early pretests with questions about social relations that referred to exchanges (see discussion in next section).

Using an exchange approach, we would include among the members of the social network anyone whose behavior rewards or punishes ego, or who is directly rewarded or punished by ego in a personal

interaction. Personal interactions include a broad range of positively- and negatively-valued exchanges such as providing advice or information, going out together, borrowing a cup of sugar, verbal abuse, or a caress. For present purposes, however, we exclude purely impersonal interactions--those in which the actor's influence on ego is solely due to a specific social position and not to any individual characteristic (for example, a sales transaction).⁵

One difficulty is identifying an appropriate time-frame for those interactions that define a relation; this is the problem of dormant, or latent, exchanges. If there are two actors who are not at this moment exchanging anything, yet they did exchange in the past, or there is an expectation--on their parts and/or society's--that they *will* (or *might*) exchange, should we or should we not call this a relation?

Our solution to the problem is both theoretical and practical. We redefine a direct "relation" as the *probability of exchange* between two actors, as perceived by the respondent. Any two people in the world have some, usually infinitesimal, probability of exchanging; it is the pairs with relatively high probabilities of exchanging who interest us, whom we say have a "relation." In that context, past exchanges, probable exchanges, feelings, and roles all provide *indicators* of the subjective expected *probability of exchange*. It is therefore possible for us to exercise the practical expedient of asking about these non-exchange topics, as well as about on-going exchanges, in order to identify relations.⁶

Selecting a Subset of the Network to Study (Operational Definition of the Network)

The network questions in the NCCS survey elicit a description of the people in a respondent's social network who are *high probability sources of rewarding exchanges*. We refer to this set of people as the *core network*.

In the survey interview schedule, we identify the members of respondents' core networks by using four kinds of name-eliciting questions. These questions ask respondents to name either:

- The people they usually go to for some kind of regular exchange (for example, "Sometimes people get together with others to talk about hobbies or spare-time interests they have in common. Do you ever do this? IF YES: Who do you usually do this with?");
- The people they would be likely to go to if they needed a rare but important exchange (for example, "If you needed to get a large sum of money together, what would you do-- would you ask someone you know to lend it to you; go to a bank, savings and loan, or credit union, or do something else?" IF R WOULD ASK SOMEONE: "Who would that be?");
- The people who were recently sources of a valued exchange (for example, "In the past three months, have any friends or relatives helped with any tasks around the home, such as painting, moving furniture, cooking, cleaning, or major or minor repairs? Who helped you?"); or
- A category of people who are likely to be sources of important exchanges we do not ask about (for example, adult members of the respondent's household).⁷

We have chosen to study *core networks* because they come closest to meeting the three criteria for a network definition that we

outlined in the first part of this section (p. 5). First, exchange theory would lead us to expect that people who are high probability sources of rewarding exchanges would be especially likely to shape attitudes and behavior. If we think of the overall value of a relation at any given time as a function of both the rewards and costs of interactions between the two people and the probability of each of those interactions taking place at that time, then we can see that those relations with a high probability of rewarding interactions would be especially important sources of reward, and therefore, of control. It is evident that this core network would also meet our second criterion; that is, the people in it would be especially likely to influence respondents' well-being.

Finally, measures of the core network seem to have relatively high reliability and validity. In part, this assertion is based on extensive informal pretesting. When we compared the initial answers people gave us to their elaborations after further probing, we found that questions about likely sources of rewarding exchanges elicited more complete and consistent answers than did questions about roles or feelings. The explanation seems to be that exchange questions ask people to either describe an actual event or to imagine a situation of real need--rather than to associate names of vague labels. We discovered from in-depth interviews that respondents had more consistent interpretations of the behaviors described in exchange questions than they did of terms such as "best friend," "co-worker," or "feel close." Our first pilot survey, also designed to evaluate the performance of exchange questions, reinforced our preference for an exchange approach. The results showed that we could use a small set of questions about *general* exchanges--exchanges most respondents engaged in with at least a few people--to identify most of the people respondents relied on for important interactions.

Limitations of the Core Network Approach

Despite its advantages, our approach to defining individuals' social worlds has several limitations that readers should keep in mind.

First, not all network members who have important impacts on attitudes, behavior, and well-being will be identified by questions about the likely sources of several kinds of rewarding exchanges. In asking about general exchanges that are important to most people, we inevitably miss specific interactions that are especially important to a few people. Therefore, those who are sources of these unidentified, *specialized* exchanges, but not of the exchanges we do ask about, will tend to be missed by our method. And these important specialists will be missing from the set of people representing respondents' social worlds.

There are other potentially important network members the method systematically fails to identify, including:

- *sources of negative exchanges*: people who are influential because of their power to punish (for example, some employers or church leaders);
- *recipients of exchanges*: people who currently receive things like material aid or emotional support from the respondent, because they have been important sources in the past or will be important sources in the future (for example, aging parents or dependent children); and
- *weak ties*: those acquaintances who, as Granovetter (1973) has argued, sometimes provide key assistance in a rare life-changing event such as finding a job.

In developing our method, we experimented with questions designed to identify important specialists, recipients, and weak ties. We concluded that the costs (in interview time) of these questions exceeded the benefits of including such relations in the network. The questions we tested are presented in Appendices B and C. We found that most of the questions identify relatively few relations, and many of those who are identified by these items are also identified by the core network questions we kept. The few eliminated questions that identify many unique names seem to do so by eliciting relatively trivial network members--getting, for example, "Christmas care lists," and extended family trees. Later in this paper, we use the results of the pilot surveys to evaluate the impact of excluding these names from our final lists.

Our theoretical stance would also lead us to exclude relations that have exclusively affective or normative content, however important the respondent may perceive them to be. Thus, the social worlds we study tend not to include people such as "role models" and "unrequited loves" when they do not participate in valued interactions. (In practice, some such persons are included in the lists.) Researchers who do not share our exchange perspective may choose to interpret this as another source of error.

In addition to these potential limitations in the operational definition of the network, we must also consider errors in measurement. The set of people identified by core network questions may not represent that part of the social world having the most impact on attitudes, behavior, and well-being when respondents either fail to name all likely sources of rewarding exchanges or when they mistakenly name people who are actually *not* sources of these exchanges. These errors will arise when respondents misinterpret a question, fail to recall the "right" people, or misrepresent their network (for example, by exaggerating).⁸ Although

these problems are not unique to our core network questions (and, we argue, may be less of a problem with them than with other kinds of network questions), they may still bias findings about who is in the core network and the exact nature of their relations. The last section of this paper describes our attempts to assess the extent and impact of this kind of error.

DESCRIBING THE NETWORK

The second major task is to describe the people who have been identified as representatives of respondents' social worlds.

Types of Descriptions

The Northern California Community Survey was designed to obtain three kinds of descriptions of social networks:

- 1) *The characteristics of network members*, such as their sex, location of residence, and subcultural memberships;
- 2) *The contents of relations between the respondent and network members*, such as whether or not they are neighbors, whether the respondent feels close to the person, and whether the respondent is likely to talk with the person when he or she is upset about a personal matter;⁹ and
- 3) *The extent of interconnections among network members*, that is, the "density" of the network.

Descriptive Techniques

The most direct approach to obtaining such descriptions would, of course, be to directly ask respondents to characterize their networks. For example, we could ask, "What proportion of your friends live in the neighborhood?" This method has been used in

previous studies (e.g., Bradburn et al., 1965). However, we doubt its accuracy. People do not normally mentally assemble all of the persons they interact with and generalize about them. When asked to do so, they have a number of difficulties: first, they have difficulty immediately remembering who they know. Second, they have difficulty thinking of those individuals as an analytical category. Third, they have difficulty characterizing the group as a whole. Most basically, people do not interpret the terms used in such questions in a consistent or common way. What is meant by, for example, "best friend," or "neighbor," or "person you are close to" varies widely from individual to individual and from one context to another.

Therefore, we chose instead the more common approach of asking respondents to describe specific individuals, and aggregating those descriptions of characteristics and relations ourselves as part of the data analysis.

As we explained in the previous section, respondents identify network members by giving the first names of people who provide rewarding exchanges. These "name-eliciting" questions also provide our first description of the network by indicating some of the contents of the respondents' relations with the people names. (For example, if the name is mentioned in response to, "Who do you talk with about your work?" we can assume that work discussions form one relation binding the two people.) The interviewer then compiles a list of all the names the respondent gave to the name-eliciting questions.¹⁰ With a copy of this list in the respondent's hand, the interviewer asks two types of questions about the names:

- 1) *Questions referring to each name separately:* for particularly important characteristics, the respondent is asked to describe each person on the list (for example, "How is Mary

related to you?").

2) *Questions referring to the list as a whole:* for dichotomous items (e.g., yes-no; same-different), the respondent is asked to choose those names that fit a particular description--for example, "Which of these people are also [SAME OCCUPATION]?" or "Which live in this neighborhood?"¹¹ (In the first pilot survey, we also used these questions as an alternative way to find out about exchanges, by asking, for example, "Which of these people could you ask to lend you a large sum of money in an emergency?").

Asking the respondent to select which names on a list fit a description allows us to rapidly characterize the network in many ways. The cost is that those descriptions are largely simple dichotomies--same occupation (or religion, etc.) as respondent or not, in the neighborhood or not, confidant or not. For some specific purposes, such descriptions are insufficient because the researcher may need to know exact occupation, or exact location, and so forth. For our purposes, such dichotomies are sufficient, and certainly permit many such descriptions. (Furthermore, as a partial remedy, we did seek fuller descriptions of a few names.) A second drawback is that they may be less accurate than questions about each name because respondents may sometimes fail to point out all the names that apply.

Asking Detailed Questions About a Subsample of Names

There were other descriptions of the network members that we wanted, but that were either not of sufficient priority or that would have been too time-consuming to ask about all names. We decided to ask these questions about a subset of the list (five names or less), a subset intended to be representative of the core network and

yet variable in the specific exchanges members of it had with the respondent. The names are chosen by a special procedure: selecting the first name the respondent gives to each of six "key" name-eliciting questions.¹² These questions ask for the people (1) who would take care of the respondent's home when he or she is away; (2) with whom the respondent spends leisure time; (3) with whom the respondent discusses a hobby; (4) with whom the respondent discusses personal problems; (5) to whom the respondent turns for advice; and (6) from whom the respondent can borrow money.

The respondent answers detailed questions about these people--for example, age, how close they feel to them, and how they had met--by *filling out a self-administered questionnaire* (see Appendix D).¹³ We also want to estimate the extent of "network density" (the interconnections among members of the network) and do this by having the interviewer fill out a *matrix form* (see Appendix E). With this form, the interviewer asks the respondent whether each pair of the up-to-five selected persons "know each other well." The ratio of affirmative answers to the total possible is the usual measure of density. At the same time, this gives us, for each of the up-to-five names, a measure of "centrality"--the number of *other* network subset members each one knows well.

Potential Sources of Error

In general, we expect errors in identifying who is in the network to be much more serious than errors in describing characteristics of, and relations with, the individuals who are identified. However, we consider three sources of "description error" in the next section:

- 1) *Errors in describing the characteristics of network members:*
Previous work (e.g., Laumann, 1973; Shulman, 1972) suggests

that at the level of description we seek--for example, same line of work or not, same ethnicity or not, resides nearby or not--the descriptions should be fairly accurate. Therefore, our analysis of this issue was largely restricted to examining, in a sample of seventeen married couples, the similarity of descriptions provided of common associates by husbands and wives.

2) *Errors in describing relations*: respondents may give inaccurate descriptions of relations by either failing to mention one of the sources of an exchange or by mentioning people who are not really sources of the exchange. This kind of error is the basis for "measurement error" in defining the network discussed previously.

3) *Subset-sampling error*: the accuracy of descriptions based on the subsample of five names depends on the representativeness of this sample. This is particularly problematic because the subsample is not random.

EMPIRICAL EVALUATIONS OF THE METHOD.

The remainder of this report presents the findings of two pilot surveys we conducted to test and refine our method for studying social networks.

The first pilot focused almost exclusively on social networks. This survey included a much wider variety of name-eliciting questions than the final instrument did, and thus permitted us to look at larger and more diverse networks than those identified in Pilot II or the final survey. We used the results of Pilot I to choose an "efficient" set of questions--one that would identify most of the "core" names in a short period of time. We also used it to look at how the characteristics of the networks defined by the subset

of questions we chose differed from those defined by the larger set of questions. Finally, we used Pilot I to estimate the error in the descriptions obtained of network members and of their interactions with the respondent.

The interview schedule used in the second pilot survey was a longer draft of what became the final instrument. We used the results of Pilot II to check our expectations about how the set of network questions we had chosen would work, to pare down the set of questions still further, and to make final adjustments in question order and wording.¹⁴ In addition, we used data from Pilot II to assess the representativeness of the subsample of network members concerning whom more detailed descriptions were elicited.

Ideally, we would have liked to test the external validity of the method by conducting a more thorough, in-depth, clinical or ethnographic study of the same respondents' personal networks, and comparing those findings with the results of the structured survey. We did, in fact, use such an approach in the early stages of the instrument design, but only for very limited and unrepresentative samples. We did not have the resources to conduct this kind of evaluation on a larger scale. Therefore, our evaluation of the instrument in the pilots is restricted to assessments of reliability and *face* validity, using the results of the pilot surveys themselves.

The Pilot Samples

Both pilot surveys were conducted in the San Francisco Bay Area by the Survey Research Center (SRC) of the University of California, Berkeley. For Pilot I, SRC randomly chose households from predominantly white census tracts in the "East Bay"--Oakland and its

suburbs. Sixty-nine main respondents were finally interviewed from these households. In addition, the spouses of seventeen of the respondents were interviewed for purposes of cross-checking answers. This yielded a total of eighty-six respondents.

Pilot II was conducted in four specifically chosen Bay Area communities--a low-income, heavily Chicano, San Francisco district; a working-class suburb of Oakland; a new middle-class suburb near Palo Alto; and a very affluent community in suburban Marin County. Twenty respondents, randomly chosen, were interviewed in each place, except the last, where nineteen were interviewed.

Selecting an Efficient Set of Network Questions

As we discussed above, our theoretical considerations led us to use questions for eliciting names that focus on identifying people who are likely sources of a variety of rewarding exchanges for the respondent. To accomplish this, we chose to use questions about general exchanges that are important to many different kinds of people. We decided *not* to use questions about important specialists, recipients of the respondents' largess, "weak ties," or exchanges we considered trivial. We also eliminated questions about behaviors that we did not consider to be exchanges and questions about other types of relations--emotional or role-based ties--except when we felt most of the names they elicited were likely to be sources of important exchanges.¹⁵

The criterion we used for selecting the particular questions for the final instrument was "efficiency." That is, we attempted to develop a set of network questions that would identify the greatest number of sources of rewarding exchanges for each respondent in the shortest possible time.¹⁶

Meeting notes

In developing Pilot I, we attempted to identify network members whose interactions were *highly valued* and who came from a *full variety of social contexts* (such as work, the neighborhood, and the family). We chose questions on the basis of extensive discussions with the NCCS and SRC staffs, using analyses of preliminary in-depth interviews, the sociological literature on social worlds, and common experience. Thus the assumption that the exchange questions we tested represent a wide variety of highly valued exchanges is based largely on the face validity of the items.

We then used the findings of Pilot I to select questions that would identify this set of people as "efficiently" as possible. In choosing among the exchange questions, we looked for items that identified the *greatest number of unique names*. That is, everything else equal, we chose questions that produced (1) as many names as possible, (2) a substantial number of names that were not elicited by other questions in the set, and (3) names from contexts that were not tapped by other questions in the set. In selecting non-exchange questions, we looked for questions that would identify people who were (1) not identified by the subset of exchange questions we had chosen, but (2) were likely to be sources of exchanges we had not asked about.

In order to assess the efficiency of different network questions, we generated from Pilot I a "name file," a data set composed of all the names provided by all the respondents. Attached to each name is a set of variables describing the person and his or her relation to the respondent. Because network members (and *not* respondents) are the units of analysis in this file, it permits us to analyze the characteristics of *individual relations*. Thus we can see whether each name elicited by a given question was elicited or checked in response to any other question, and how the

characteristics of names elicited by one set of questions differed from those elicited by another set.¹⁷

Table 1 presents data on the performance of all the network questions tested in the first pilot survey. The first panel includes the "core" network questions used in the final survey instrument. (The final wording of some questions is slightly different from the wording in Pilot I. The final instrument also includes an additional two items: one on sociability and one on discussants of spare-time activities. The wording of questions included in Pilot I can be found in Appendix B; the final survey questions are in Appendix A.) The final survey also includes the sole remaining non-exchange question--"Is there anyone else important to you?" The remainder of the table contains questions *not* used in the final instrument, both exchange and non-exchange questions.

The first column indicates the total number of names elicited by each question. (This figure, divided by eighty-six, gives the per-respondent average.) The second column shows the number of *unique* names elicited by that question alone. The third column shows how many of the elicited names were *not* selected at all when some of the exchange questions were repeated to respondents looking at a list of all the network members they had identified.¹⁸

We decided that many of the *exchange* questions were "inefficient" and eliminated them from the final instrument because the number of names they contributed to respondents' networks was too small. Looking at the first two columns of Table 1, we can see that questions about specialized exchanges (such as child care and giving rides), about weak ties (such as help finding a job), and about recipients of services, generally produced fewer names and fewer *unique* names than the "core" questions.¹⁹

Four exchange questions were eliminated (at least in part) for other reasons. The "nurse R" question was eliminated because some respondents found it upsetting, as well as because it identified the same people as the "household" and "borrow money" questions. The "lend small things" and "borrow small things" were eliminated because we decided the exchanges were not important enough to be considered core. The "clique" question was eliminated because a more precise sociability question was substituted.

In developing the *non-exchange questions*, we were looking for other ways to identify providers of exchanges that were more efficient than asking about each exchange individually. The data presented in columns two and three show that many names elicited by each of the items we tested were not later checked in response to other questions. These people seem not to do anything.

Principles

This finding can be interpreted in two ways. First, the questions may identify providers of important exchanges that we fail to ask about directly. Second, they may identify other types of relations--sources of unimportant exchanges or relations that have primarily affective or role contents. After much discussion, we decided that the non-exchange questions listed in the last panel (children living elsewhere, ex-spouses, best friends, and people nearby and far away with whom the respondent makes special efforts to keep in touch) probably fell into the latter categories; that is, that they largely identified people who were nominal ties and not sources of valued interactions. Thus, we decided to use a variety of exchange questions to ask about interactions directly, so that we could avoid the inclusion of "peripheral" names in the networks we identified.

We believe that the two non-exchange questions included in the list

of core network questions--Household and Fiancee--did identify sources of important exchanges. Adult members of the same household interact in a variety of important (and often unique) ways, such as helping each other with household work and supporting each other financially.²⁰ People who are described as a fiance(e) or "one best friend you are dating or seeing a lot of," but who are not sources of material aid or emotional support probably share in sexual interactions--a type of exchange about which we did not ask explicitly. We have not yet settled on an interpretation of the "anyone else important" question; therefore we treat it separately from the "core network" questions.²¹

Finally, we used data from Pilot I to ensure that we identified network members from a *variety of contexts* in which respondents participated. Table 1 shows that the "talk about work" question identifies co-workers; the "helped in home" and "care for house" questions identify neighbors; "borrow" identifies extended kin; and "personal discussion" and "rely on judgment" identify close kin and "other" relations--primarily people who are called "friends." The two questions we added to the final instrument are designed to identify people with whom respondents share social entertainment and spare time interests. The combined set of core questions identifies relations from a full range of social contexts.

Characteristics of the Core Network

We used data from both pilot surveys to look at how the "core" networks we are studying differ from networks defined more broadly. We did this by looking at the characteristics of the people identified by the questions in the pilot survey that most closely approximated the "core network" questions in the final survey

instrument and comparing them to characteristics of the people identified by *all* the questions used in that survey.

In Pilot I the "non-core" set of questions included exchange questions about "important specialists," "weak ties," recipients of exchanges, and non-exchange questions about best friends, people kept in touch with, ex-spouses, and children not living at home. The "core" questions in Pilot II did not include two questions used again as core questions in the final survey--the "personal discussion" and "rely on judgment" questions. (The network questions used in Pilot II can be found in Appendix C.) In both cases, the "anyone else important" question is considered separately. Although neither set of core questions exactly matches the set of network questions in the final instrument, they are good enough approximations to permit assessment of the implications of variations in network definition.

It is evident that the networks identified by the core network questions should be smaller than those identified by all the questions combined. In Pilot I we elicited an average of 21.1 names per respondent using all the questions; had we used only the core exchange questions, we would have elicited only 8.2 names per respondent. In Pilot II we elicited 16.5 names per respondent in all, 9.7 of which came from core questions.

Tables 2 and 3 compare the characteristics of the names elicited by three sets of questions--the core questions, the combination of the core questions and the "anyone else" question, and the entire set of questions.

Table 2 shows the distribution of social contexts from which the network memberships were drawn--whether the ties identified were

close kin, extended kin, or neighbors or co-workers. The greatest difference between names elicited by core questions and names elicited by the combined set of questions is that core questions were much less likely to identify extended kin, such as aunts and uncles, nieces and nephews, grandparents or grandchildren. Most of these additional kin seem to be identified by the "anyone else important" question. We suspect that many of these are purely role-based ties--people who are called important because they are kin and not because they are likely to participate in valued interactions. Some, however, may be latent sources of exchanges--people who would be called on for material or emotional support if the need should arise. The difference in proportions of close kin between Pilots I and II--32 versus 18 percent--is due to the automatic inclusion of minor children in Pilot I's networks (see Notes 15 and 21).

The pilot surveys also permitted us to compare how similar to the respondent were the people elicited by different sets of questions, particularly in sex and in sharing the respondent's line of work, religion, ethnicity, and favorite spare-time activity. Table 3 shows that the networks identified by "core" questions were quite similar in these respects to the more broadly defined networks. However, the core set did elicit names that were slightly more similar to the respondents than those elicited by the entire set. (One exception is sex, where the non-core questions elicit more females for both sexes.) Work similarity was relatively much greater in the core set because that set includes the "Talk About Work" item. The core set was slightly more homogeneous on religion and ethnicity. In part, these core relations were more likely to have the same ethnicity and religion as respondents because they were more likely to be close kin.

The data presented in Tables 2 and 3, as well as other results, suggest that the networks described in our final survey--that is, using the "core" questions--are not much different from those that would be described by a much larger set of questions.

Reliability of the Name-Eliciting Exchange Questions

Pilot 1 was also designed to estimate the reliability of the exchange questions we used to identify members of respondents networks. The name-eliciting exchange questions are susceptible to two kinds of error. First, the lists of names each one generates may be incomplete. That is, respondents may fail to mention all the most likely sources of rewarding interactions.²² Second, the questions may elicit the "wrong" names. That is, respondents may mention people who are actually not sources of the specific exchange described, or who are less likely to interact this way than other people whom they have forgotten to mention.

Errors in the name-eliciting questions are particularly important to understand because they not only result in inaccurate descriptions of the particular relation, but they may also create errors in describing overall networks by generating incomplete or inaccurate lists of network members.

We used a "test-retest" procedure in the first pilot survey to estimate the reliability of the name-eliciting questions. Interviewers repeated several name-eliciting questions in almost identical form after the respondent had been given the list compiled from all elicited names. The respondent was asked which of the names on the list, if any, were sources of each exchange. This procedure allows us to measure how many names that were first

mentioned in response to a particular question were later dropped, how many names not originally cited were then added, and for how many names the respondent was consistent.

We can interpret the number of names *added* later as an estimate of the maximum number of names omitted from respondents' answers to the original name-eliciting question. It is probably an *over-*estimate because the request to choose names from a list encourages respondents to exaggerate their personal resources (and because the base includes names which were later dropped by the respondent). The total number of names added to each repeated question and the percents by which the added names increased the sets of recorded²³ names are presented in Table 4 (columns 4 and 7). The added names would increase the lists of elicited names from 35 to 79 percent, or by an average of 54 percent (column 7). This means that respondents may have up to about half again as many sources of rewarding interactions as they mention in response to a particular name-eliciting question. The implication is that the list of names the name-eliciting question produces cannot be considered complete, but only a sample of all the people with whom the respondent engages in a particular exchange (the characteristics of that sample are discussed below).

Table 4 also presents the number and proportion of recorded names that were *not* selected in response to the "list-checking" question (columns 2 and 5). These statistics can be interpreted as estimates of "false positives"--persons originally named as sources of an exchange, but not confirmed later in the interview. Respondents dropped from 14 to 40 percent of the original responses to name-eliciting questions, an average of 28 percent of the names elicited by all the questions we tested. Alternatively, about 75 percent

of the people mentioned in response to a name-eliciting question were confirmed as the most likely sources of that kind of exchange.

Characteristics of Names Added or Dropped

We examined the characteristics of the persons added and dropped in response to various questions. The details of these tables are complex, but suggest the following general pattern: First, the consistent set tends to be made up of names elicited in other core questions as well. Names cited in response to more than one question were least likely to be dropped. Second, although the characteristics of names added and dropped vary greatly from question to question, added names share one feature: they expand the social contexts from which names for each question were drawn. That is, the initial list tends to be narrowly defined in terms of role or context expectations (for example, naming co-workers sources of "Talk About Work"). Later, respondents were more likely to check names of people not immediately in that context.

Together, these findings suggest that specialists are over-represented in the elicited sets of names. When people consider all the members of their networks, they are more likely to mention people they turn to for a variety of interactions, but who are not part of the contexts in which one might expect those interactions to take place.

Accuracy of the Core Lists of Network Members

The whole set of name-eliciting exchange questions identifies and defines the respondents' networks. When a name is mistakenly omitted in answer to a particular question, it will be erroneously omitted from the whole network *unless it is mentioned in response*

to another name-eliciting question. Similarly, names that are included erroneously in response to a particular question will be erroneously included in the entire network *unless they are accurate responses to another name-eliciting question*. Whenever erroneous names are sources of more than one exchange, they are less likely to reduce the accuracy of the test as a whole. Because of the potential for redundancy, we would expect the identification of the *set* of network members to be more accurate than the identification of *individuals* involved in any particular exchange.

Table 5 presents estimates of the accuracy of the core set of network members. Whereas Table 4 compared each question as asked in a name-eliciting form to its list-checking form, this table compares the *set* of questions in each form. Of all the names elicited, 20 percent seem to involve some type of error, either being erroneously excluded or included in the list of providers of core exchanges. The first three rows of the table show the increase in core names produced by having the respondent select names from a full list of network members. The first row shows names added by only one list-checking question. The 26 percent error rate is much lower than the average error of 61 percent for the core questions tested separately. The gain in accuracy can be attributed to the variety of questions included in the core set. Names missed by one question tend to be picked up by another.

In contrast, the proportion of elicited names *dropped* from the core lists--20 percent--is not much smaller than the average proportion of names dropped from each separate question. (The gain in accuracy might have been larger if we had included all of the core questions in the list-checking set. The most important explanation for this small gain in accuracy when using the set of

questions is that most of the dropped names were specialists--people identified by only one name-eliciting question. This means that false positives to one question are not likely to be true positives to any other question. Therefore, their inclusion in the whole list of names will be inaccurate as well.)

In all, a *maximum* of one out of five names elicited by core questions can be considered as inaccurate; that is, they would probably be replaced by other names if respondents had been looking at a complete list of their associates. Roughly speaking, we can claim a "reliability" figure of 80 percent. Furthermore, both the names that would be dropped from the lists and those that would be added to it are likely to be specialists--sources of only one kind of rewarding interaction. Consequently, the method is most reliable in capturing general supporters of the respondents.

Accuracy of Descriptions of the Networks

As we explained above, findings of previous network surveys led us to be much more confident that identified persons are described accurately than that the correct persons are identified. This judgment was reaffirmed by a few limited analyses we made on the reliability of the personal descriptions respondents gave us.

The inclusion of both members of seventeen husband-wife couples in the Pilot I sample permitted us to compare spouses' descriptions of people who were included in both of their networks. In all, we identified twenty-four people who were included on the self-administered questionnaires of both members of a spouse pair. We found that all the spouses agreed on the named persons' marital statuses and on the city in which they lived. The discrepancies between spouses' descriptions of other characteristics were all

small. Spouses disagreed on the ages of the children of three people (12 percent); in each case one spouse did not include one of two age categories mentioned by the other spouse.²⁴ Ten age estimates given by spouse pairs were identical (43 percent), eight estimates (35 percent) differed by only one year, five (13 percent) differed by two or three years and two (7 percent) differed by six and eight years.

Characteristics of Subsample Names

As described earlier, a subset of elicited names are chosen for more detailed questions. Up to five names are picked from a variety of core questions--excluding household members--and the respondent fills out a self-administered questionnaire about each one (Appendix D). To what extent can descriptions of the subsample be applied to the core network? That is, how representative is this subsample of the larger sample? Table 6 provides a comparison of the subsamples to the core networks for each pilot survey.

The results from Pilot II are more generalizable to the final survey, but both sets of results indicate no large discrepancies between the subsamples and the core networks. In Pilot II, subsample names are notably more similar in ethnicity and sex to the respondent than are the core names as a whole. Even there, the largest difference is 11 percentage points. It seems safe to use the subsample as representative of the larger set of names (household members excluded).

Summary of Evaluation

Judging from internal analyses of our two pilot surveys (as well as our informal pretesting), this network methodology identifies most of the people respondents rely on for important personal exchanges such as loans of money, discussion of personal problems, and social entertainment. The people who are in this way identified as members of the respondents' core networks come from a wide range of the social contexts within which respondents participate--family, work, and so on. In addition, the networks appear to be comparable across different kinds of respondents.

However, the goal of identifying broad yet comparable networks has been attained at the cost of some measurable loss of accuracy. Time constraints have excluded questions that identify relations such as weak ties, specialists, and recipients of exchanges. And included questions sometimes pick up people who are less important than those we miss.

These network questions also succeed in describing the members of respondents' networks and the contents of their relations relatively fully. However, we have again been forced to sacrifice some accuracy to attain breadth. By using general questions referring to whole lists of names and detailed questions referring to only a subsample of names, we obtain a more complete picture of respondents' whole social worlds. But in return we must accept some error in describing each person and relation. Because we lack measures of external validity, we cannot give a definitive assessment of this method. However, detailed examination of two pilot surveys leads us to conclude that it succeeds reasonably well in describing the personal networks of many individuals.

CONCLUSION

The mass survey format often forces researchers to make tradeoffs between breadth and precision, and choices between the quality and quantity of descriptions to be elicited are especially common. It also forces researchers to develop precise operational definitions of their theoretical concepts so that the large quantity of information they obtain will be comparable across respondents.

In attempting to develop an operational definition of egocentric networks for use in mass survey instruments, we faced a combination of these two problems. In choosing questions, we had to weigh greater accuracy in measuring networks by using many items against the information we could obtain by using that time for other probes. In short, we faced the problem of developing an *efficient* definition and measure of the network.

We attempted to do this by building as complete a picture as we could of respondents' personal networks, while eliminating some segments of these networks on either theoretical or practical grounds. Our goal was to identify members of respondents' networks who were important in shaping their attitudes and behavior and in influencing their well-being, using as few questions as possible. For theoretical reasons, we defined relations as valued interactions, and chose to eliminate from the networks people who had exclusively normative or affective ties to respondents and those whose interactions were not especially valuable. For practical reasons, we then eliminated from the networks types of ties that could not be identified efficiently: weak ties, important specialists, recipients of exchanges, and sources of negatively valued interactions. We decided to use "name-eliciting" questions

to define the networks (giving up the accuracy we would have attained by separating the eliciting of potential network members from the characterization of those persons as "most important"). Finally, we chose to describe most of the network members by a check-list procedure, reserving detailed descriptive questions for only a subsample of names.

The kinds of theoretical, definitional, and technical problems which this paper has addressed are not unique to the network survey of the Northern California Community Study. While the judgments we made--for example, in using an exchange definition of relation--can be altered to suit other interests or theoretical perspectives, the issues must be faced by all network surveyers.

After all is said, how successful this method is depends on its substantive uses. But it is evident that this technique is a major advance in network surveys. As an illustration, if we had used only the question, "Who are the people you think of as your closest friends?"--an item typical of previous surveys--in Pilot II we would have: identified an average of four network members per respondent, instead of seventeen; thought that the average network was composed of only 14 percent kin, instead of 41 percent kin; missed 72 percent of the people whose advice respondents seek; and concluded that network members were more likely to be homogeneous with respect to hobbies than with respect to ethnicity, instead of the reverse. Yet we retain the ability to describe different subgroups such as close friends, kin, and sources of emotional support.

For researchers who want to describe the general personal network of survey respondents--the wider set of people on whom respondents depend and with whom they interact--this method will be useful because it overcomes the inherent limits of a mass survey, and succeeds in capturing the size, breadth, and diversity of many people's individual social worlds. For those who want to focus on particular kinds of networks--say, professional associates or leisure-time companions--this method can be usefully modified to attain that goal as well.

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FOOTNOTES

¹We suspect that such definitions are inadequate for the purposes of other researchers as well, and that, in particular, conclusions about people's whole social worlds are often inaccurately generalized from data on narrowly defined sets of relations. For example, Irving (1977) asked people to name those whom "they see most of socially." Later he refers to this network in global terms as the "web of friendship" and as an indicator of social integration and anomie. Obviously, this overstates the case since sociable leisure constitutes only one particular kind of shared relation. He also stresses the effect of residing nearby on the density of such networks. But distance is bound to have more effect for frequent social companions than for, say, the set of people one feels fondness for. Researchers ought not to loosely generalize to networks as a whole from any narrow operationalization of "relation."

²The concept of "friend" is especially problematic, empirically and theoretically. We found in our own pretests that, although people named as "close friends" were more likely than others to be selected as persons the respondents felt "especially close" to, only 45 percent of people nominated as best friends were later called "especially close" (in Pilot II). Similarly, although "close friends" were more likely than other network members to be people whose judgment respondents would rely on, this was still true of only 18 percent of "close friends"; and although respondents were somewhat more likely to talk with "close friends" when they were worried about personal matters, they would talk with only 34 percent of those so nominated. Furthermore, 12 percent of the names given in answer to the question, "Who are the people you think of as best friends?" (in Pilot I), were not called "friends" later, when respondents were presented with a list of all the persons they had named and asked to select appropriate descriptions of the relations they had with those persons from a card listing types of relations--with "friend" as one of the types listed. In sum, there was a good deal of unreliability associated with "friends." [Note continues]

More generally, the definition of "friend" is ambiguous and imprecise. Consider, for example, the OED definitions:

- 1) One joined to another in mutual benevolence and intimacy. Not ordinarily applied to lovers or relatives, but cf. senses (3) and (4).
- 2) Used loosely in various ways; e.g., applied to a mere acquaintance, as a mark of goodwill or kindly condescension.
- 3) A kinsman or near relation.
- 4) A lover or paramour, of either sex [indicated as obsolete although current usage seems to have revived this meaning].

Some respondents implicitly accept definitions (3) or (4); others do not. Furthermore, Americans have particular problems with definition (2). The British (and others) use the term "mate" for sociable but not intimate associates ("a habitual companion, an associate, a fellow comrade; a fellow worker or partner"--OED; in French, *copain*), which reserves "friend" for close intimates (Allan, 1977). Americans tend not to make the distinction, or at least they do not make it uniformly or consistently. The result is that when (American) respondents are asked to name friends, the lists of names they present are not comparable.

³This procedure is similar to those used in studies of specific information- or influence-transmission (e.g., Katz & Lazarsfeld, 1955; Coleman et al., 1966). The major difference here is that we used a wide variety of exchanges to get an overall picture of an individual's network instead of studying one specific kind of exchange.

⁴A discussion of the merits of an exchange perspective on the relationships between networks, environmental situations, and individual well-being is included in Fischer et al. (1977).

⁵The reader will recognize that this qualification compromises our theoretical purity (since it invokes normative roles) but it is important given our purposes. We wish to study individuals' social worlds, or subcultures, and including most impersonal relations would be a poor use of resources. For other network studies, it may be useful to include regular impersonal encounters.

⁶To set the time-frame problem in perspective, we briefly note that any definition runs into problems at least as serious. To define relations in terms of affect leads to anomalies where idealized, or even wishful, "relations" are counted at the expense of mundane but consequential ones. Similarly, culturally-prescribed roles, such as siblings or neighbors, may in people's real lives be marked more by the absence of expected interactions than by their presence.

⁷Whenever possible, we asked the respondent to name the people they are likely to go to for an exchange. However, in cases where pretesting showed that many respondents could not easily remember the set of people they rely on for a particular interaction, we designed questions about *past interactions*. In addition, we used the *categorical* questions (the last type listed) to identify sources of exchanges that were too numerous or too sensitive to ask about directly.

Although we tested many questions of types two, three and four, we included only one of each type in the final survey instrument.

⁸Much of the pretesting of the survey instrument consisted of efforts to design question wording, probes, and sequencing that would minimize this kind of error. A brief description of two of the technical problems we encountered may aid the reader in understanding some of the technical difficulties.

1) *Couples*. People occasionally think of their network alters as couples. The go out to dinner with "John-n-Mary," leave their children with "Alice-n-Ted," and so on. Although a theoretical rationale can be constructed for treating the couple as a joint actor, that presents more difficulties than it resolves. (For example, what is the age of John-n-Mary?) Consequently, interviewers are instructed to probe for specific individuals, to ask which member of the couple is actually the confidant, or the person who looks after their house, and so on.

2) *Taken-for-Granted Persons*. There are some members of respondents' networks that they take so much for granted--in the sense that they are so obviously involved in respondents' lives--that they often are not named in response to specific questions. This is particularly true of spouses. Respondents often tacitly assume that our questions imply "who *besides* your spouse...", or simply overlook what to them is obvious. Consequently, if a spouse is not mentioned as a confidant, advisor, helper, etc., we are uncertain whether his or her absence is a comment on the marriage or only an oversight.

⁹These contents correspond to the three definitions of relations--normative, affective, and interdependence.

¹⁰In compiling the list, the interviewer can check to make sure that each person is identified by a distinctive name and consistently identified by the same name.

¹¹The technical procedure used here is to have the respondent look at a strip of paper with a list of names he or she has given. The interviewer has a copy of that same list (made with NCR paper)

attached to an answer form for checking the names the respondent calls out.

¹²This is the procedure used in the final survey; the one used in the pilots was slightly different. Both ensure that names are not duplicated, and that they do not include members of the household. (Key attributes of household members are obtained in the enumeration. Also, certain questions--for example, where the nominee lives--are obviously irrelevant for household members.) The interviewer selects the first *new* person who is not a household member mentioned in response to the "key" question.

¹³The respondent fills the forms out while the interviewer compiles the full list of all elicited names.

¹⁴We also added one untested question to the final survey which we felt would identify important network members we had previously missed--those with whom the respondent regularly discussed a hobby or other spare-time activity.

¹⁵The exception to this principle that remains in the final instrument is the last name-eliciting question. When the respondent is handed the compiled list of names, he or she is asked, "Is there anyone else important to you who doesn't show up on this list?" If there is an affirmative answer, the extra names are added to the list. We confess to some uncertainty about how to interpret this question and the names it produces. On the one hand, its manifest meaning does not concern exchange, but rather, affect. It is in this sense inconsistent with our definition of the network. And indeed, the names it elicits are distinctive--likely to be kin and to be offered by older persons. Many of these names seem "inappropriate"--nominal associates of the respondent who do not actually provide any exchanges. On the other hand, the specific exchanges we ask about certainly do not exhaust the universe of exchanges. Many of the names offered to "anyone else" may be persons who provide other specific exchanges. Perhaps the respondent has learnt the system of the interview and is offering "appropriate" (i.e., exchange-based) relations. For example, grandchildren who send holiday greetings to elderly widows may in this way be providing important psychological support. We explore the empirical implications of the "anyone else" question below (see especially note #21). At this writing, we plan to use the names elicited by the probe in the final survey, but will evaluate it again at that time.

¹⁶We allotted about 20 minutes in the final survey to both identify *and* describe respondents' networks.

¹⁷The drawback to this approach is that findings about individual relations may not always represent findings about whole networks. In part, this is because large networks are given more weight in the name file than small networks. In addition, the proportion of relations in the master list with a particular characteristic will be different from the mean of the proportions of that characteristic in respondents' networks when those proportions are not normally distributed (for another confrontation with this kind of problem, see Laumann & Pappi, 1973).

Given more time and resources, we would have gone on to aggregate data on all the relations of each respondent, and, using the respondent as the unit of analysis, looked at whether our findings were any different for whole networks.

One bit of evidence gleaned from another analysis gives us some confidence that our findings would not be very different for whole networks: the proportion of kin in respondents' networks *is* normally distributed (so that the overall average is equal to the average of network proportions).

¹⁸The questions are also included in Appendix B.

¹⁹Two core questions--"rely on judgment" and "personal discussion"--produce few unique names because they overlap with each other and with household membership. They were kept because of the importance of the names they elicited.

²⁰One of the reasons that many household members do not appear as sources of exchange in Table 1 (the 38 percent "not checked") is that minor children were included on the list as household members in the first pilot survey. In later surveys, only *adult* household members were included in the core networks.

²¹Table 1 shows that 61 percent of the names elicited by "anyone else" were extended kin in Pilot I; in Pilot II, 44 percent were--both disproportionate figures. Other data from Pilot II show that respondent's age--but not other variables-- was notably associated with providing many names to "anyone else" ($\gamma = .37$). Are these names "real," in the sense of being providers, or probable providers, of important exchanges? Or do they represent the sentimental attachments of old people to nieces, grandchildren, and so on? The 56 "percent names not checked" in Table 1 implies that most of these people do not provide exchanges; or that they

provide exchanges other than those we (who were under 30 years old at the time) thought to ask about. The answer is still unclear.

Substantively, what difference does it make? To answer that question, Robert Fitzgerald ran two parallel data analyses on Pilot II--including and excluding the "anyone else" names. In these analyses, several aggregate descriptions of respondents' networks (e.g., number of persons in a respondent's network who were of the same religion) were crosstabulated against several respondent characteristics. In spite of the small sample size (N = 78), the hundreds of tables suggested that it made *little difference* to substantive conclusions about the associations whether the "anyone else" names were included or not. The differences in the measures of association were typically trivial. Appendix F reproduces a sample of the results and indicates that the largest variations between the two runs occurred when age or network size were variables. By and large, however, the underlying patterns were sufficiently robust to withstand this variation.

parent ²²A related source of error, which we cannot estimate, is that definitions of "likelihood" may vary from respondent to respondent.

²³We refer to "recorded" rather than elicited because, given our method, the name may have been elicited but not recorded--if it was the ninth or later name elicited. This did not happen very often.

²⁴The self-administered questionnaire, in its final form, can be found in Appendix D.

APPENDIX A

Network Questions Used in the Northern California Community Study Survey Instrument (Final Version)

1. What is the name of the head of this house? What are the names of all the other adults who live here? Now how about the children? I'd like their names in order of age, beginning with the oldest. Is there anyone else who usually lives here, like a roomer or boarder? (INTERVIEWER SELECTS ALL HOUSEHOLD MEMBERS 16 YEARS OLD AND OVER.)
2. When people go out of town for a while, they sometimes ask someone to take care of their home for them--for example, to water the plants, pick up the mail, feed a pet, or just check on things. If you went out of town, would you ask someone to take care of your home in any of these ways while you were gone? [IF YES:] Who would you ask? Could you give me the first names of the people you would ask? [IF SOMEONE IN HOUSEHOLD NAMED:] Suppose (everyone who lives here/both of you) were away at the same time, who would you ask?
3. Some people never talk with anyone, either on or off the job, about how to do their work. Other people do discuss things like decisions they have to make, work problems they have to solve, and ways to do their work better. Is there anyone you talk with about how to do your work? [IF YES:] Who do you talk with about how to do your work?
4. In the past three months, have any friends or relatives helped with any tasks around the home, such as painting, moving furniture, cooking, cleaning, or major or minor repairs? [IF YES:] Who helped you?

5. Please read through the list of activities on page 5 of the booklet. Which, if any, of these have you done in the last three months?

Had someone to your home for lunch or dinner

Went to someone's home for lunch or dinner

Someone came by your home to visit

Went over to someone's home for a visit

Went out with someone (e.g., a restaurant, bar, movie, park)

Met someone you know outside your home (e.g., a restaurant, bar, park, club)

(R volunteers other activity)

None [Skip Out]

[IF YES:] May I have the first names of the people you do these things with?

6. Sometimes people get together with others to talk about hobbies or spare-time interests they have in common. Do you ever do this? [IF YES:] Who do you usually do this with?
7. Do you have a fiancé(e) or one best friend you are dating or seeing a lot of? [IF YES:] What is (his/her) first name?
8. When you are concerned about a personal matter--for example, about someone you are close to or something you are worried about--how often do you talk about it with someone--usually, sometimes, or hardly ever? When you do talk with someone about personal matters, who do you talk with?
9. Often people rely on the judgment of someone they know in making important decisions about their lives--for example, decisions about their family or their work. Is there anyone whose opinion you consider seriously in making important decisions? [IF YES:] Whose opinion do you consider? [PROBE:] Is there anyone else?

10. If you needed to get a large sum of money together, what would you do--ask someone you know to lend it to you; go to a bank, savings and loan, or credit union, or do something else? [IF YES:] Who would that be? [ASK ALL:] What about in an emergency situation--is there anyone (else) you could probably ask to lend you some or all of the money? [IF YES:] Who would that be?
11. Is there anyone who is important to you who doesn't show up on this list? [IF YES:] Who is that?

APPENDIX B

Network Questions in the First Pilot Survey

NAME ELICITING QUESTIONS

"Core" Questions Included in Final Survey

1. In Household: Please give me the names of all the other adults who live here. Now how about children. I'd like their names in order of age, beginning with the oldest. Is there anyone else who usually lives here, like a roomer or boarder? Have I missed anyone who is away temporarily? Any babies?
2. Talk About Work: Some people never talk with anyone, either on or off the job about how they do their work. Other people do discuss things like decisions they have to make, problems they have to solve, and ways to do their work better. Is there anyone you talk with about how you do your work? [IF YES:] Who do you talk with? [PROBE:] Is there anyone else?
3. Fiance(e)/Steady: [IF NOT MARRIED:] Do you have a fiancée or one best friend you are dating or seeing a lot of? [IF YES:] What is his/her first name?
4. Rely on Judgment: Often people rely on the judgment of someone they know in making important decisions about their lives--for example, decisions about their family or their work. Is there anyone whose opinion you consider seriously in making important decisions? [IF YES:] Whose opinion do you consider? [PROBE:] Is there anyone else?
5. Personal Discussion: When you are upset about a personal matter--for example, about someone you are close to or something you are embarrassed about--how often do you talk about it with someone: usually, sometimes, or hardly ever? When you do talk with someone about personal matters like that, who do you talk with? [PROBE:] Anyone else?
6. Care for House: When families go out of town for awhile, they sometimes ask someone to take care of their home for them, for example, to water the plants, pick up the mail, feed a pet, or just check on things. If you went out of town, would you ask someone to take care of your home in any of these ways while you were gone? [IF YES:] Who would you ask?

7. Helped in Home: In the past three months, has anyone who does not live here with you helped with any other tasks around the home such as painting, moving furniture, major or minor repairs, or preparing for a party, either as a favor or for pay? [IF YES:] Who was that?

8. Could Borrow Money: Normally, if you needed to get a large sum of money together, what would you do, would you ask someone you know to lend it to you, go to a bank, savings and loan or credit union, or do something else? [IF NECESSARY:] About \$1,000 or more. [IF ASK SOMEONE:] Who would that be? What about in an emergency situation--is there anyone (else) you could probably ask to lend you some or all of the money? [IF YES:] Who would that be?

Exchange Questions Not Included in Final Survey

1. Helped R Find Job: [REFERRING TO CURRENT OR MOST RECENT JOB] Did someone you know help you find (your/that) job? [IF YES:] Who is that?

2. Give Ride to Work: How do you usually get to work? Do you drive, get a ride, take the bus, car pool, walk or do something else? [IF GET A RIDE:] Who do you get a ride from?

3. Give Ride to Store: [IF R DOES SOME GROCERY SHOPPING:] How do you usually get to the grocery store? Do you drive, get a ride, take the bus, walk, or something else? [IF GET A RIDE:] Who do you usually get a ride from?

4. Told R of Organization: [IF R JOINED ORGANIZATION IN LAST FIVE YEARS: REFERS TO ORGANIZATION JOINED MOST RECENTLY:] Now I'd like to ask you about joining [NAME OF ORGANIZATION]. Before you joined it, did you get information about it from anyone you know? [IF YES:] Who was that?

5. In Clique: Some people spend a lot of time with one set of friends or relatives--people who all know each other and often get together as a group. Are you part of a group like that? [IF YES:] Who is in the group?

6. Helped R Find Home: Did someone you know help you find this (house/apartment)? [IF YES:] Who was that?
7. Cooks for R: Now I'd like to ask you about the work you do around your home. First of all, who does most of the cooking in your home? [RECORD NAME IF PERSON OUTSIDE THE HOUSEHOLD.]
8. Helps R Cook: Does anyone (else) help with the cooking--say, at least every week or so? [IF YES:] Who is that? [RECORD IF OUTSIDE HOUSEHOLD.]
9. Cleans for R: Who does most of the housecleaning and straightening up? [RECORD IF OUTSIDE HOUSEHOLD.]
10. Helps R Clean: Does anyone help with the housecleaning and straightening up--say at least once a month? [RECORD IF OUTSIDE HOUSEHOLD.]
11. Does Small Repairs: Who takes care of most of the small repairs such as fixing leaky faucets or changing fuses? [RECORD IF OUTSIDE HOUSEHOLD.]
12. Helps With Repairs: Does anyone (else) help with the small repairs--at least once every six months? [RECORD IF OUTSIDE HOUSEHOLD.]
13. Paid to Help in Home: Are any of the people who do the housecleaning, small repairs, or cooking paid for any of the work they do around your home?
14. Helped in Home by R: Have you helped anyone do any jobs around their homes as a favor in the last three months, like cleaning, painting, moving furniture, preparing for a party, or major and minor repairs? [IF YES:] Who did you help? [PROBE:] Is there anyone else?
15. Lends Small Things: When you need something small, like a cup of sugar or a few quick nails, do you usually borrow from someone, do you go to the store, or do you do one or the other depending on the situation? [IF EVER BORROWS:] (When you do borrow) who do you usually borrow from?

16. Borrow Small Things: Has anyone borrowed anything from you to use around their homes in the last month? [IF YES:] Who borrowed from you?
17. Regular Child Care: Do you have a regular child-care arrangement for any of your children during the day, for example nursery school, a day care center, or a regular sitter? [IF SITTER:] Who takes care of your (child/ children)?
18. Babysits for R: Do you usually leave any of your children in someone (else's) care (other than your husband's/ wife's) when you go out for a few hours during the day or evening? [PROBE:] Do your older children help? [IF YES:] Who takes care of them? [PROBE:] Anyone else?
19. Babysat for by R: Have you taken care of anyone's children in the last three months? [IF YES:] Whose children have you taken care of?
20. Would Nurse R: When someone has an emergency operation--like having their appendix taken out--they usually have to spend some time at home in bed. If you had to stay in bed for several days, would any of the people you know take care of you, or would you probably pay someone to take care of you? [IF PEOPLE WOULD TAKE CARE:] Who would probably take care of you?

Other Network Questions Not Included in Final Survey

1. Child Living Elsewhere: Do you have any children who don't live here with you? [IF YES:] Could you tell me their ages [RECORD NAMES IF VOLUNTEERED.]
2. Ex-spouse: Do you keep in touch with (any of) your former (husbands/wives)? [IF YES:] What is (his/her) (are their) first name(s)?
3. Best Friend: Who are the people you think of as best friends? [IF NECESSARY: Anyone else you think of as a best friend?]

4. Person Far Away: Sometimes people have a few friends or relatives living outside the area that they make a special effort to keep in touch with. Are there a few people outside this area you think it is especially important to keep in touch with? [IF YES:] Who are these people?
5. Person Nearby: What about people who live nearby? People sometimes have a few special friends or relatives they don't normally see as part of their everyday activities, but feel it is important to keep in touch with. Are there people nearby that you make special arrangements to see or talk with? [IF YES:] Who is that?

QUESTIONS REFERRING TO THE LIST OF ALL NETWORK MEMBERS

Question Used in the Final Survey

Is there anyone who is important to you who doesn't show up on the list? [IF YES:] Who is that?

Questions Not Used in the Final Survey

1. Please read through the list of activities on this card. [SEE LIST, APPENDIX A, QUESTION 5]. Have you done any of these things in the last three months? [IF ANY:] Which of these people [ON THE LIST] do you do these kinds of things with, at least every few months? [PROBE:] Is there anyone else on the list you do any of these things on the card with, at least every few months?
2. Which (if any) of these people's judgment do you rely on in making important decisions about your life--for example, decisions about your family or your work? [PROBE:] Is there anyone else?
3. IF EMPLOYED: Which people (if any) on the list do you talk to either on or off the job about how to do your work? I mean about decisions you have to make, problems you have to solve, or ways to do your work better? [PROBE]

4. When you are upset about a personal matter--for example, about someone you are close to or something you're worried about--which (if any) of the people on the list do you talk to about it? [PROBE]
5. If you went out of town for awhile, who (if anyone) on this list would you ask to take care of your home while you were gone, for example, by watering your plants, feeding a pet, or just checking on things? [PROBE]
6. Which (if any) of these people do you usually leave your children with when you go out for a few hours during the day or evening?
7. Suppose you needed to visit someone who was ill (and the people you usually left your children with weren't available), who else (if anyone) on the list could you leave your children with that one time?
8. If you had to stay in bed for a few days after an emergency operation--like having your appendix taken out--which (if any) of the people on the list would you probably ask to take care of you? [RECORD] Is there anyone (else either on or) off the list you could ask to take care of you if you really needed to?
9. If you needed to get together a large sum of money in an emergency which (if any) of the people on this list could you probably ask to lend you all or some of it? [IF NECESSARY:] About \$1,000.

APPENDIX C

Network Questions in the Second Pilot Survey

NAME-ELICITING QUESTIONS

"Core" Questions Included in the Final Survey

1. What is the name of the head of this house? What are the names of all the other adults who live here?
Now how about the children? I'd like their names in order of age, beginning with the oldest. Is there anyone else who usually lives here, like a roomer or boarder? Have I missed anyone who is away temporarily?
(INTERVIEWER SELECTS ALL HOUSEHOLD MEMBERS 16 YEARS OLD AND OVER.)
2. Some people never talk with anyone, either on or off the job, about how to do their work. Other people do discuss things like decisions they have to make, problems they have to solve, and ways to do their work better. Is there anyone you talk with about how to do your work?
[IF YES:]
Who do you talk with about how you do your work?
3. Which of these activities have you done in the last three months? [LIST:] Had someone to your home for lunch or dinner? went to someone's home for lunch or dinner; someone came by your home to visit; went over to someone's home for a visit; went out with someone (for example: to a restaurant, a bar, a movie, or a part); met someone you know outside your home. [IF ANY YES:]
Who do you usually do these kinds of things with?
4. Do you have a finace(e) or one best friend you are dating or seeing a lot of? [IF YES:] Who is that?
5. In the past three months, have any friends or relatives helped with any tasks around the home such as painting, moving furniture, cooking, cleaning, or major or minor repairs? [IF YES:] Who was that?

6. When families go out of town for awhile, they sometimes ask someone to take care of their home for them--for example, to water the plants, pick up the mail, feed a pet, or just check on things. If you went out of town, would you ask someone to take care of your home in any of these ways while you were gone? [IF YES:] Who would you ask? [IF SOMEONE IN HOUSEHOLD NAMED, PROBE:] Suppose everyone living here was away at the same time, who would you ask?
7. If you needed to get a large sum of money together, what would you do--would you ask someone you know to lend it to you, go to a bank, savings and loan, or credit union, or do something else? [IF NECESSARY:] About \$1,000 or more. [IF ASK SOMEONE:] What about an emergency situation--is there anyone (else) you could probably ask to lend you some or all of the money?

Name-Eliciting Questions Not Included in Final Survey

1. Did someone you know help you find this (house/apartment)? [IF YES:] Could you please tell me the first name of whoever helped you find this (house/apartment)?
2. [REFERRING TO CURRENT OR MOST RECENT JOB:] Did someone you know help you find (your/that) job?
3. Sometimes people have a few friends or relatives living outside the area that they make a special effort to keep in touch with. Are there a few people outside this area you think it is especially important to keep in touch with? [IF NECESSARY: EXPLAIN THAT FREQUENCY OF CONTACT IS NOT RELEVANT.] [IF YES:] Who are these people?
4. Who are the people you think of as your closest friends? [IF NECESSARY:] Whoever you think of as your closest friends. [IF R MENTIONS COUPLE:] Are they both among your closest friends?

QUESTIONS REFERRING TO THE LIST OF ALL NETWORK MEMBERS

Questions Used in the Final Survey

Is there anyone who is important to you who doesn't show up on this list? [IF YES:] Who is that?

Questions Used to Elicit Names in Final Survey

1. When you are upset about a personal matter--for example, about someone you are close to or something you are concerned about--how often do you talk about it with someone--usually, sometimes, or hardly ever? When you do talk with someone about personal matters like that, which of the people on the list do you talk with? You can just read me the numbers if you want. [PROBE:] Is there anyone (else, either on or) off the list you talk to about personal matters?
2. Often people rely on the judgment of someone they know in making important decisions about their lives--for example, decisions about their family or their work. Is there anyone whose opinion you consider seriously in making important decisions? [IF YES:] Which (if any) of these people's judgment do you rely on in making important decisions about your life? [PROBE:] Is there anyone (else, either on or) off the list whose judgment you rely on?

APPENDIX D

Self-Administered Questionnaire
for Subsample of Names--Final Version

SRC#
(1-4)
Pers. #
(5-6)
7/3
Place:
(8-9)
N:
(10)

(NAME)

1. How did you first meet this person?
 01. We're in the same family 11-12/
 02. Grew up together
 03. In school
 04. At work
 05. As neighbors
 06. In a group or organization
 07. Through a friend
 08. Through my (husband/wife)
 09. Through my child
 10. Other (HOW: _____)
 _____)
2. About how many years have you 13-14/
 known this person?
 _____ years
3. What city does this person live in? 15-17/

 (CITY) (STATE)
4. How often do you usually get together 18/
 with this person?
 1. More than once a week
 2. About once a week
 3. Two or three times a month
 4. About once a month
 5. Several times a year
 6. About once a year
 7. Less often than that

5. What is this person's age? 19-20/
 _____ years
6. Is this person currently
 employed either full-time or
 part-time? 21/
 1. Employed full-time
 2. Employed part-time
 3. Not currently employed
7. Is this person presently 22/
 1. Married
 2. Widowed
 3. Divorced
 4. Separated
 5. Never married
 6. I don't know
8. Does this person have children? (CIRCLE ALL THAT APPLY)
 1. No--no children 23/
 2. Yes--pre-school children 24/
 3. Yes--school-age children 25/
 4. Yes--children over 18 26/
 5. I don't know 27/

MATRIX FORMNAMES FROM STARRED * QUESTIONS

LIST THE 5 SELECTED NAMES DOWN THE COLUMN: LIST THE FIRST 4 OF THEM ACROSS THE TOP, IN THE SAME ORDER. IN THE SPACES PROVIDED. ASK ABOUT ALL RELATIONSHIPS IN COLUMN 1; THEN ABOUT ALL RELATIONSHIPS IN COLUMN 2, ETC.

	Do 1. _____ and (2,3,4,5) know each other well?	Do 2. _____ and (3,4,5) know each other well?	Do 3. _____ and (4,5) know each other well?	Do 4. _____ and (5) know each other well?
1. _____				
2. _____	Yes 1 No. 2			
3. _____	Yes 1 No. 2	Yes 1 No. 2		
4. _____	Yes 1 No. 2	Yes 1 No. 2	Yes 1 No. 2	
5. _____	Yes 1 No. 2	Yes 1 No. 2	Yes 1 No. 2	Yes 1 No. 2

* STARRED QUESTIONS ARE:

TAKE CARE OF HOME p. 9

SOCIALIZE p. 27

LEISURE ACTIVITY p. 27

PERSONAL MATTER p. 28

JUDGMENT p. 28

BORROW MONEY p. 29

APPENDIX F

Associations between Respondent Characteristics and Network Characteristics, Comparing Network Measures Including "Anyone Else" Names to Measures Excluding Them (Pilot II).

Excl. All "Else" Names	Gamma's (N = 78)			
	Respondent Characteristics			
Network Measures	Female	Education	Age	Happiness ^a
# of Persons Would Talk About Problem	.04 / .07	.32 / .27	-.25 / -.22	.03 / .10
# of Persons Labeled Neighbors	-.18 / -.15	.33 / .36	-.06 / -.03	.05 / .10
# Who Share Same Major Sparetime Activity	.03 / -.04	-.03 / .07	-.24 / -.18	.29 / .19
# of Kin (Outside the Household)	-.11 / -.14	-.04 / -.01	.06 / .19	.27 / .14
Total # of Names	-.09 / -.06	.29 / .25	.02 / .21	.35 / .23

a. Four-point scale response to question on "How happy would you say you are?"

Table 1

Characteristics of Names Elicited by Questions: Pilot I
(N = 86 Respondents)

Questions	Total names elicited	Elicited only by Q.	Percent not checked ^a	Relation to respondent			
				Percent close kin ^b	Percent extended kin	Percent neighbor/ worker	Percent other
FINAL SURVEY ITEMS ^c							
"Core"							
In household	160	65	38%	89%	04%	00%	07%
Talk about work	180	120	19	06	03	74	16
Fiance/e-steady	11	6	09	00	00	00	100
Rely on judgment	137	4	07	54	15	12	20
Personal discussion	189	10	05	42	17	08	33
Care for house	151	115	06	18	11	47	24
Helped in home	50	17	28	08	16	20	56
Would borrow \$	22	6	09	32	45	00	23
Could borrow \$	120	12	07	36	32	11	21
(Total:) ^d	(1020)	(335)	(15%)	(38%)	(13%)	(25%)	(23%)
Anyone else important ^e	202	202	56%	11%	61%	07%	21%
NOT IN FINAL							
Other exchange Questions							
Helped find R job	15	8	47%	13%	07%	13%	67%
Give ride to job	2	2	(1)	(0)	(0)	(0)	(2)
Give ride to store	3	0	(0)	(2)	(0)	(0)	(1)
Told R of organization	22	11	36	09	09	23	59
In clique	254	86	24	11	31	17	41
Helped find R home	33	10	36	18	15	21	45
Cooks for R	4	0	(4)	(0)	(2)	(0)	(2)

Table 1 (continued)

Questions	Total names elicited	Elicited only by Q.	Percent not checked ^a	Relation to respondent			
				Percent close kin ^b	Percent extended kin	Percent neighbor/ worker	Percent other
Helps R cook	2	0	(1)	(0)	(0)	(0)	(2)
Cleans for R	4	1	(2)	(1)	(1)	(0)	(2)
Helps R clean	10	2	(3)	(1)	(0)	(1)	(8)
Does small repairs	8	5	(5)	(2)	(1)	(2)	(3)
Helps with repairs	9	3	(4)	(2)	(1)	(4)	(2)
Paid to help in home	9	0	(1)	(4)	(1)	(1)	(3)
Helped in home by R	68	10	16%	12%	16%	32%	40%
Lends small things	87	18	15	06	05	66	24
Borrows small things	74	10	22	08	09	61	22
Regular childcare	4	3	(1)	(0)	(0)	(1)	(3)
Babysits for R	41	14	12	27	22	24	27
Babysat for by R	62	17	16	27	27	23	23
Would nurse R	225	29	07	36	26	16	22
(Total:) ^d	(937)	(229)	(20%)	(19%)	(21%)	(27%)	(33%)
Non-exchange questions							
Child living elsewhere	33	2	27%	100%	00%	00%	00%
Ex-spouse	12	8	58	00	00	00	100
Best friend	403	141	25	04	08	24	64
Person far away	280	173	52	12	48	02	38
Person nearby	178	91	25	07	27	11	54
(Total:) ^d	(906)	(415)	(34%)	(11%)	(24%)	(13%)	(52%)
Added later ^f	75	75	(00%)	01%	27%	19%	53%

NB: Exact wording of questions are in Appendix B.

^a Name not selected in response to any question during name-checking series (see text).^b Spouses, parents, children.^c Approximate set of final items (see Appendix for actual set).^d NB: Names are often counted more than once in these total figures.^e Also included in final set, but not "core."^f Names added during name-checking procedure.

Table 2

Social Contexts of Elicited Names by Set of Questions

	Pilot I				Pilot II			
	Close kin	Ext. kin	Nbr. work	Other	Close kin	Ext. kin	Nbr. work	Other
Core questions alone	32%	14	30	23 (705)	18	17	20	45 (768)
Core plus "anyone else"	27	25	25	23 (907)	18	22	17	43 (945)
All questions	16	26	22	35 (1808)	16	25	13	46 (1296)

Table 3

Similarity of Named Persons to Respondents, by Sets of Questions

Names elicited by	Percent of named persons similar to respondent in: ^a				
	Kind of work	Religion	Ethnicity	Activity	Sex (males)(females)
Pilot I					
Core questions only (N=)	30% (519)	43% (409)	35% (290)	26% (446)	61% (383) 55% (322)
Core plus "anyone else" (N=)	26 (629)	37 (510)	39 (357)	23 (578)	- - -
All questions (N=)	19 (1229)	36 (1035)	33 (762)	22 (1168)	57 (924) 61 (886)
Pilot II					
Core questions only (N=)	22% (568)	44% (578)	46% (336)	23% (524)	59% (319) 62% (443)
Core plus "anyone else" (N=)	19 (694)	42 (722)	45 (422)	23 (633)	- - -
All questions (N=)	17 (943)	44 (996)	47 (592)	20 (876)	57 (530) 63 (750)

^aN of names fluctuates because similarity questions asked only for respondents who identify a line of work, a religion, an ethnicity, or a favorite spare-time activity.

Table 4

Number of Names Elicited and/or Checked in Test-Retest Versions of Name-Eliciting Questions (Pilot I)

Question	Names elicited			Errors ^a		
	And checked--consistent (1)	Not checked--dropped (2)	Total (3)	Not elicited and checked --added (4)	% of elicited dropped (5)	% of checked added increase by added (6) (7)
<u>In final:</u>						
Rely on judgment	102	35	137	94	26%	48%
Talk about work	123	57	180	82	32	40
Personal discussion	133	56	189	107	30	45
Care for house	130	21	151	78	14	38
Could borrow \$ ^b	108	34	142	112	24	51
(Unweighted mean)	(119)	(41)	(160)	(95)	(25)	(44)
<u>Not in final:</u>						
Babysits for R	30	11	41	17	27	36
Would nurse R	134	91	225	79	40	37
(Overall unweighted mean)	(109)	(44)	(152)	(81)	(28)	(42)
						(54)

^aColumn (5) = (2) ÷ (3); Column (6) = (4) ÷ [(1)+(4)]; and Column (7) = (4) ÷ (3)

^bIncludes "would" borrow money from.

Table 5

Estimates of Accuracy of Core Set of Eliciting Questions,
Based on Set of Test-Retest Questions (Pilot I;
household members are excluded)

Kind of error for set	Number of names	As % of names elicited by core Qs	As % of all names elicited
Omissions			
Serious (names not elicited but checked on two or more core list-checking questions)	48	07%	03%
Other (not elicited, added on one core question)	139	19	08
(Total)	(187)	(26%)	(11%)
Erroneous inclusions			
Serious errors (names elicited on 2+ core questions, but checked on none)	8	01%	00%
Other errors (elicited on one and checked on none)	137	19	08
(Total)	(145)	(20%)	(09%)
Total names elicited by Core Qs		732	
Total names elicited by all Qs			1651

Table 6

Comparison of Names Selected for Subsample to All Names
Elicited by Core Set. (NB: Household members
excluded from subsample)

Attribute	Pilot I			Pilot II		
	Sub- sample	Core set	Core + "else"	Sub- sample	Core set	Core + "else"
Social context						
Close kin	18%	32% ^a	27% ^a	14%	18%	18%
Extended kin	27	14	25	22	17	22
Neighbor/co-worker	20	30	25	14	20	17
Other	35	23	23	50	45	43
(N=)	(331)	(705)	(907)	(318)	(768)	(945)
Same line of work	16%	30%	26%	20%	22%	19%
	(219)	(519)	(629)	(225)	(568)	(694)
Same religion	39%	43%	37%	43%	44%	42%
	(194)	(409)	(510)	(250)	(578)	(722)
Same ethnicity	40%	35%	39%	57%	46%	45%
	(146)	(290)	(357)	(141)	(336)	(422)
Same activity	25%	26%	23%	23%	23%	23%
	(210)	(446)	(578)	(210)	(524)	(633)
Same sex: Males	64%	61%	-	69%	59%	-
	(175)	(383)	-	(124)	(319)	-
Same sex: Females	72%	55%	-	72%	62%	-
	(156)	(322)	-	(195)	(443)	-

^aIn Pilot I, all household members, including minors, were automatically part of the core set. In subsequent versions, household members under 16 were not included unless named in response to another question.