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Field Methods 2007; 19; 194
DOI: 10.1177/1525822X06298590

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Contact Diaries: Building Archives of Actual and Comprehensive Personal Networks

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Many studies of ego-centered networks have aimed to obtain proxies for networks that help estimate their size and nature. As an alternative, the contact diary offers a comprehensive approach that records and yields archives of actual and comprehensive networks. In the long run, the actual and dynamic data from contact diaries can provide researchers with a potential baseline and delineate total or global personal networks within a specific time frame. This article explains how to use the diary approach to collect network data. After a review of studies that have adopted diaries in general and contact diaries in particular, I then discuss a recent diary study’s research design in more practical terms. Finally, I appraise some advantages and limitations of the approach and explore other uses of contact diaries, such as building archives of year-long, active networks.

Keywords: contact diary; ego-centered networks; active networks; daily contact

Social networks, which are composed of a host of actors and a web of relationships, often become too complex and dynamic to observe and measure directly in empirical inquiries. Instead of searching for actual and complete networks, various research designs have aimed to obtain proxies for networks. One popular approach is to generate a subset of networks in large-scale sampling surveys to map out the individuals in respondents’ social circles. For example, the name generator elicits members from one’s core network (Laumann 1973; McCallister and Fischer 1978; Wellman 1979; Burt 1984; Marsden 1987). In contrast, both the position generator (Lin and Dumin 1986; Erickson 1996, 2004; Lin, Fu, and Hsung 2001) and the resource generator (van der Gaag and Snijders 2004, 2005) help reach more diverse subsets of
networks. Another type of proxy measure adopts small-sample experimental designs, such as the small-world study (Milgram 1967) and the reverse small-world experiment, or RSW (Killworth and Bernard 1978). Even with small segments, these designs have helped estimate and explain the size and nature of networks.

Although it has been innovative and illustrative to collect network data by various generators, all of these instruments produce proxy measures of networks rather than actual networks. Thus, several questions arise as researchers reconstruct the network data on which they make estimates and inferences. For example, what is the criterion for evaluating these proxy measures? Are there any field methods that help minimize the respondents’ biases in recall and recollection during data collection? How possible is it to obtain actual and complete network data for a specific period of time? What are the costs and limits to such a comprehensive approach? As useful and illustrative as network proxies are, their limitations are obvious. What are the alternatives to such proxy measures?

Among the limited alternatives, the contact diary offers a very different approach to collecting network data. Instead of relying on network proxies, the contact diary offers a comprehensive approach that records and yields actual information about personal networks. In the long run, such actual details help build an archive and draw a complete and dynamic picture that shows how networks evolve and change. The actual and dynamic data thus provide researchers with a potential baseline and delineate total or global personal networks for a specific time frame, instead of unique network subsets.

In this article, I discuss how to use the diary approach to collect empirical data about individuals’ personal networks. I first review previous diary studies and examine the studies that have used contact diaries as the tool to collect network data. I then look at a recent diary study’s research design in more practical terms. Finally, I rate some of the approach’s advantages and limitations and explore how network researchers can extend it to build archives of actual, dynamic, and comprehensive personal networks.

**DIARY STUDIES AND CONTACT DIARIES: A BRIEF REVIEW**

Researchers use at least three approaches to collect firsthand data of social interactions and personal networks. First, observation gives a direct account of how people interact with one another. Second, intensive interviews and sampling surveys using questionnaires help produce overall indices from respondents’ perceptions and recollections of their own life experiences. Third, diaries
enable people to self-record their own daily practices, which reveal details about how people interact and maintain relationships (Reis and Wheeler 1991).

Diaries refer to any daily event-recording procedures that track “information in relation to the passage of time” (Breakwell and Wood 1995:294) or any method of data collection that “entails respondents to record information about their subjective experiences, cognitions, behaviors and social interactions linked to a temporal framework” (Thiele, Laireiter, and Baumann 2002:2). Properly designed, diaries can be used to collect data in various areas of interests. As the subject of recording gives a name to the diary (e.g., food diary, sleep diary, shopping diary, travel diary, time-use diary, etc.), contact diaries refer to daily procedures that record information about any interactions with other actors. More precisely, contact diaries record situations in which “the behavior of each person is in response to the behavior of the other” (see Duck 1991:157–58; Reis and Wheeler 1991:269–71; Baumann et al. 1996).

By definition, contact diaries contain self-recorded entries of contacts. To standardize recording procedures, however, researchers sometimes interview respondents about the content of daily contacts. For example, Shelley, Bernard, and Killworth (1990) interviewed twenty-one respondents every other day for 30 days to record who they contacted and how long they spent in these contacts. Because the respondents did not need to record the contacts themselves, the researchers had better control over the quality of data collection. By asking the respondents to provide detailed accounts of all contacts, however, the advantages of ensuring their confidentiality may be lost.

Compared with observations and interviews, the diary approach is normally more familiar, natural, and unobtrusive to respondents. Although small events or spontaneous social activities in daily life may seem routine and trivial, they are symbolic representations of people’s lives, and thus, essential for understanding various research issues (Duck 1991; Reis and Wheeler 1991). In contact diaries, such routine and trivial entries reveal the fundamental fabric of social events and actions, which, in turn, nurture relationships and weave social networks.

Qualitative research has widely identified “encounters” as the “smallest-tightest” unit of social situations (Goffman 1961; Loiland 1976:27–28, 99). Likewise, “contacts” have been the “micro-level” building block of social networks (see Lonkila 1999). As the essential element that helps establish and maintain social relations, contacts between actors have been the fundamental unit of social ties, which, in turn, help construct social networks. In other words, relationships emerge from interactions. Only when the actors contact
each other do social relationships emerge and systematic patterns of networking become possible (Reis 1994).

The diary approach has been widely used in experimental designs. Above all, the diary registers covert behaviors in everyday life, thus serving as a key instrument that helps assess and modify the treatment in clinical psychology and psychotherapy (Thiele, Laireiter, and Baumann 2002). But the same diary techniques also help collect valuable data in ethnographies, case studies, and large-scale surveys.

Because the diary approach requires much effort from both researchers and informers, however, only a few scholars have relied on contact diaries as the major tool for collecting network data. The pioneering study using the contact diary was Gurevitch’s (1961) dissertation. In that study, each of eighteen informants (who served as the focal point of his or her network, or “ego”) in the United States recorded each day for 100 days the sociodemographic characteristics of those acquaintances (the contacted persons, or “alters”) with whom he or she had contact. The study was later extended to include diaries kept by twenty-seven informants (de Sola Pool and Kochen 1978). The rich information from these diaries revealed the social structure of acquaintance networks and later helped researchers estimate how many acquaintances one has had over twenty years (Freeman and Thompson 1989).

In another study that used contact diaries extensively, Lonkila (1999) instructed seventy-eight schoolteachers in both Russia and Finland to record nonroutine contacts—those featuring exchanges of significant information—with their acquaintances for 15 days. Three years later, the study was replicated, with fewer teachers’ keeping diaries. Although the period of diary keeping was substantially shorter, the informers recorded each contact in far greater detail. Not only did the teachers write down the contacted persons’ characteristics, they also noted the contact situations and their relationship with each alter. These in-depth records helped researchers interpret the teachers’ network segments in relation to all other social ties and revealed processes of network formation.

Another recent study treated the diary approach as one of the two less common methods for measuring personal networks (Fu 2005). In this study, three survey fieldwork supervisors in Taiwan recorded all kinds of contacts with all types of people, including total strangers, for 3–4 months. The data yielded comprehensive network information, which contained details about each contacted person’s background, the contact situations, and the ties between the informants and all contacted persons (ego–alter ties). The study revealed that the informants’ subjective well-being increased with the total volume of contacts each day, thus highlighting the significant role that interpersonal contacts played in everyday life.
As these studies demonstrate, contact diaries help accumulate empirical and actual data on interpersonal contacts, which, in turn, become the ultimate database of comprehensive personal networks. Like other diary studies, however, contact diaries face a double challenge in designing effective instruments and planning for smooth fieldwork operation. On one hand, most researchers are tempted to collect every detail of daily contact as comprehensively as possible. On the other hand, diary keeping is usually tedious, demanding, and sometimes even overwhelming for informants. Instrument design and fieldwork practices thus become critical to the success of any diary study.

INSTRUMENT DESIGN AND FIELDWORK PRACTICES

For instrument design and fieldwork practice, the key to success lies in maintaining a balanced focus on what researchers want and how informants record their daily contacts. To collect detailed contact data, researchers should aim to design a diary log that covers wide-ranging topics. To facilitate informants and encourage them to fill out the log as correctly and conveniently as possible, however, the log needs to be straightforward and intuitive to use. Any fieldwork practices also should follow the strategies that make the task of diary keeping easier for informants.

Diary Log

The basic diary log covers only the sociodemographic characteristics of contacted persons, which should be relatively easy for informants to identify. As the research interest expands, however, a log can become so sophisticated that it may be quite difficult to keep it. Therefore, it is worth every effort to relieve the informants’ burden by simplifying the log and making it as logical and systematic as possible.

To assist in achieving more comprehensive network analysis, a contact diary log should aim to gather three major types of information: (1) the demographic characteristics and socioeconomic status of each contacted person, (2) the circumstance of each specific contact, and (3) the characteristics of the relationship between ego and each alter (Lonkila 1999). Figure 1 lists an example of a comprehensive diary log that a previous study used and that was later improved and extended (Fu 2004, 2005). The possible responses for the diary log (mostly in categories) appear in Table 1.

The first and the third parts of the diary log provide essential information for social ties and personal networks, whereas the second part reflects the
Please record the following information for every contact that you have made today, including all kinds of one-on-one contacts such as saying hello, chatting, talking, meeting, or sending or receiving a message, that occurred face-to-face, over the phone, on the Internet, or by other means of communication. Please start with a new page for each day.

### A. Individual characteristics of the contacted person

<table>
<thead>
<tr>
<th>Name/Nickname of contact</th>
<th>Relationship to you (01–25)</th>
<th>Duration of acquaintanceship (1–4)</th>
<th>Gender (1,2)</th>
<th>Age (1–7)</th>
<th>Education (1–6)</th>
<th>Occupation (three digits)</th>
<th>Marital status (1–3)</th>
<th>Current residence (three-digit zip code)</th>
</tr>
</thead>
</table>

### B. Contact situations

<table>
<thead>
<tr>
<th>Form (1–4)</th>
<th>Content (1–8)</th>
<th>Duration of contact (1–5)</th>
<th>Place (1–6)</th>
<th>Audience (1–5)</th>
<th>Expected in advance? (1–4)</th>
<th>Who initiated? (1–4)</th>
<th>Feeling (1–4)</th>
<th>Contact again? (1–4)</th>
<th>Significance to you (1–4)</th>
<th>Significance to the contacted person (1–4)</th>
</tr>
</thead>
</table>

### C. Your ties with the contacted person (1–4)

<table>
<thead>
<tr>
<th>Frequency of face contact</th>
<th>Frequency of phone contact</th>
<th>Frequency of (e-)mail contact</th>
<th>Degree of familiarity</th>
<th>Familiarity with family</th>
<th>Importance to you</th>
<th>How well you like the person</th>
</tr>
</thead>
</table>

### D. Others

<table>
<thead>
<tr>
<th>First time in log (1, 2)</th>
<th>Sequence number</th>
</tr>
</thead>
</table>

---

**FIGURE 1**

Diary Log
### A. Individual Characteristics of the Contacted Person

**Relationship to you?**

**Duration of acquaintanceship:**
- (1) less than 1 year, (2) 1–4 years, (3) 5–19 years, (4) 20 years or more, (8) don’t know, (9) no acquaintanceship

**Gender:**
- (1) male, (2) female

**Age (years):**
- (0) 0–9, (1) 10–19, (2) 20–29, (3) 30–39, (4) 40–49, (5) 50–59, (6) 60–69, (7) 70 and above, (8) don’t know

**Education:**
- (1) primary school and below, (2) middle school, (3) high school, (4) junior college, (5) university, (6) graduate school and above, (8) don’t know

**Occupation:** Three digits (Please fill in the codes of occupations. Retirees, please fill in the last occupation before retirement.)
- (998) don’t know

**Marital status:**
- (1) single, (2) married, (3) other, (8) don’t know

**Current residence:** Please fill in the 3-digit zip code
- (998) don’t know

### B. Contact Situations (referring to this contact, not usual relationships or contacts)

**Form:**
- (1) face to face, (2) over the phone, (3) on the Internet, (4) postal mail, (9) other

**Content:**
- (1) nodding or greeting, (2) chatting or talking, (3) you provided the contacted person with information or the contact person asked for information (indicating that the contacted person received information or help from you), (4) the contacted person provided you information or you asked for information (indicating that you received information or help from the contacted person), (5) information exchange or discussion, (6) participation in the same activity, (7) daily routine, (8) trading, (9) other

**Duration of contact:**
- (1) Less than 1 min., (2) 1–5 min., (3) 6–29 min., (4) 30 min.–2 hrs., (5) 2 hrs. or more

**Place (where were you?):**
- (1) residence, (2) working place/school, (3) business place, (4) public place, (5) residence of the contacted person, (6) working place of the contacted person, (9) other

**Audience:**
- (1) family members, (2) colleagues, (3) friends, (4) others, (5) strangers, (9) none
TABLE 1 (continued)

Was this contact expected in advance?
  (1) definitely yes, (2) probably yes, (3) probably not, (4) definitely not

Who initiated the contact?
  (1) myself, (2) the contacted person, (3) both sides together, (4) the third party, (9) N/A

How was the feeling/atmosphere?
  (1) very pleasant, (2) pleasant, (3) unpleasant, (4) very unpleasant, (8) don’t know (no special feeling)

Will there be contacts again?
  (1) definitely will, (2) probably will, (3) probably will not, (4) definitely will not, (8) don’t know

How significant was this contact to you (i.e., the amount of personal gain or the weight of importance)?
  (1) very significant, (2) significant, (3) insignificant, (4) very insignificant, (8) don’t know

In your opinion, how significant was this contact to the contacted person (i.e., the amount of personal gains or the weight of importance)?
  (1) very significant, (2) significant, (3) insignificant, (4) very insignificant, (8) don’t know

C. Your Ties with the Contacted Person (usual contacts and relationships, not this contact)

Frequency of face-to-face/phone/e-mail contact:
  (1) often, (2) sometimes, (3) seldom, (4) never

Degree of familiarity:
  (1) very familiar, (2) familiar, (3) unfamiliar, (4) very unfamiliar, (9) no acquaintanceship

Degree of familiarity with family (either your familiarity with the contacted person’s family or the contacted person’s familiarity with your family):
  (1) very familiar, (2) familiar, (3) unfamiliar, (4) very unfamiliar, (9) no acquaintanceship

How important is this contacted person to you?
  (1) very important, (2) important, (3) unimportant, (4) very unimportant, (8) don’t know

How well do you like the contacted person?
  (1) like very much, (2) like somewhat, (3) dislike somewhat, (4) dislike very much, (8) don’t know

D. Others

First time in log? (Are you recording this contacted person in this log for the first time?)
  (1) yes, (2) no

Sequence number:
  Start from 01 every day (e.g., the first page of the same day was assigned from 01–10; the second page was assigned from 11–20, etc. Code from 01 each day.).

NOTE: One may add “Code of the day” on the upper-left side of each log, which contains eight digits: year, month, and day (each consists of two digits), followed by “day of the week” (one digit, 1–7) and weather: (1) sunny, (2) cloudy, (3) rainy, (4) severe (storm, etc.), (5) mixed.

nature and variation of encounters or interpersonal contacts. For example, some encounters or contacts may have a short life span, whereas others last much longer. Contacts also differ in terms of means of contact, space, audiences, and forms of activity (Lofland 1976). In addition to the individual and
tie characteristics, these situational factors help reveal the circumstances within which daily contacts take place and personal networks form.

According to the instructions in Figure 1, each informant should keep track of all kinds of contacts, with all kinds of people, and by all means of communication (face-to-face, phone, e-mail, etc.). The unit thus is contact-people-means. For example, different contacts with the same person on the same day by the same means are combined into one entry in the log, whereas contacts with the same person by different means appear as separate entries. Such an all-inclusive operative definition of daily contacts meets a specific interest, which pays attention to all the individuals that come across the informants in daily life, thus enabling researchers to understand the fundamental features of personal networks. As individual studies may have different research interests, researchers may want to adjust the requirements and spell them out clearly in the initial statement.

Because the design requires an informant to fill in the instrument regularly, one should bear in mind that this diary accesses specific groups and remains exclusionary on the basis of literacy skills. To accommodate more diverse groups who participate in the study, however, several details in the diary log serve to ease the tasks of diary keeping (and thus, data cleaning). For example, the order of the three major parts and the order of the questions within each part should follow the natural information flow for each contact. The codes listed after each question refer to the range of possible answers (as indicated in Table 1). In addition, each page of the diary log contains ten entries to enable informants and researchers to count and number the contacts more easily. The original diary log used Chinese characters, which allowed a landscape page layout that made the log easier to fill out. Each page of the Chinese diary log contained fifteen entries of contact. However, there is no limit to how many entries one can record each day.

The answering categories also have been adjusted to ease the process of diary keeping, according to what previous informants have suggested as being the best format and layout. For example, the categories of relationships appear as groups, with similar or paired relationships adjacent to each other. Some of the answering categories in this diary log were designed based on previous studies. For example, “relationship” contained twenty-five categories that appeared in a 1997 survey on social networks (Lin, Fu, and Hsung 2001). Most of the categories were self-explanatory (e.g., “close friend” versus “just a friend”). Others required special listings that showed categories in detail, especially the codes for occupation, which were taken from the coding system that the Taiwan Social Change Survey used in the first years of the twenty-first century. That particular coding system was, in
The duration of acquaintanceship contains four categories that reflect roughly equal proportions. The age item asks for the estimated age group to which a contacted person belongs, so the informant only needs to fill in “2” for ages 20–29, “5” for ages 50–59, and so on. Throughout the answering categories, don’t know takes on the value of 8 or 998; others or not applicable are designated as 9. If the contacted person is a stranger, the informant can record “0” for many of the answers (or simply cross out the columns that are inapplicable). Finally, more than half of the items in Part B (contact situations) and all items in Part C (ego-alter relationship) contain answering categories that range from 1 to 4, thus enabling the informants to use a uniform format. It should be noted that this study did not instruct or expect the informants to remember the codes for these answering categories. After keeping the diaries for about 2 weeks, however, most informants had easily memorized most of these codes.

The Fieldwork of Diary Keeping

Once the diary log is ready, the first task of fieldwork is to solicit or sample informants, or the diary keepers. The pioneering study selected the sample group according to occupational status (Gurevitch 1961; de Sola Pool and Kochen 1978). Other studies limited their informants to specific groups, such as college students, university employees, schoolteachers, mothers with preschool children, or survey supervisors (Higgins, McClean, and Conrath 1985; Jennings, Stagg, and Connors 1991; Nezlek 1993; Jennings et al. 1995; Lonkila 1999; Fu 2005). Given that the task of diary keeping may be highly demanding and thus require a strong commitment from the participants, it is not unusual for researchers to recruit their own network members in studies (de Sola Pool and Kochen 1978; Shelley, Bernard, and Killworth 1990). A more extensive study sampled informants from wide-ranging subpopulations (Fu 2004). Although most diary studies have relied on a limited number of informants, researchers tend to prefer a reasonable distribution of informants based on sex, age, region, and occupation.

After selecting candidates for diary keeping, the next steps are to decide (1) what, whom, and when to record and (2) how long the informants should keep the diaries. Although most contacts would seem easy to identify, the informants need clear guidelines as to what kinds of contacts and what kinds of contacted persons they should record, standard rules required in any data collection. Most diary studies have limited the types of interactions and target
persons as the candidates for diary entries. For example, the pioneering studies only included contacts with acquaintances (Gurevitch 1961; de Sola Pool and Kochen 1978) or contacts that featured exchanges of significant information with acquaintances (Lonkila 1999). A more common practice limited the contacts to those lasting more than 10 minutes (Duck 1991; Reis and Wheeler 1991; Nezlek 1993) or those “over 10 minutes and if the contact was meaningful for the person” (Baumann et al. 1996:72). Other studies asked the informants to record only the interactions with “network members” or with “all people that [the informants] regard as important in their life” (Jennings, Stagg, and Connors 1991; Jennings et al. 1995:197).

The most comprehensive coverage extends the targets to all one-on-one contacts with all kinds of persons (Fu 2005). Not only does such an all-inclusive approach help alleviate ambiguities in the definitions and thus provide more straightforward diary keeping, it also facilitates inquiries into broader networking in daily life. First of all, it is highly subjective for different individuals to identify what kinds of interactions or information are significant or meaningful. Likewise, not all the informants use the same standard when they decide which individuals are “important in their life,” “network members,” or “acquaintances.” Thus, entries of contacts may become sporadic and unstable. Finally, some of the brief contacts (that last fewer than 10 minutes) may turn out to be as important as longer contacts. Sometimes, weaker ties help people receive crucial information when they have casual contacts or chance meetings with “individuals whose very existence they have forgotten” (Granovetter 1973:1372, n.17). Thus, adding more restrictions for diary keeping actually increases the informants’ burden for screening targets, and the resulting fewer entries limit further analyses. In contrast, by recording all one-on-one contacts with all kinds of persons, the informants provide rich information about their personal networks in daily life.

When should the informants actually write down what happened during each contact? It seems reasonable to assume that the best way to avoid any biases in recall is to allow the shortest possible time lapse between contact and registration. To be more realistic, however, researchers have adopted different intervals. Three such strategies have been common in conventional diary studies: interval-contingent (to record contacts at regularly scheduled intervals), signal-contingent (to record whenever one receives a signal, such as a beeper signal or a message from researchers), and event-contingent (to record whenever an event occurs; Reis and Wheeler 1991). The event-contingent approach adopts the shortest time lag, thus minimizing bias in recall. However, when the respondents take time to record each contact immediately after it ends, it tends to interrupt the natural flow of
social interactions, thus modifying their future contacts. In other words, the very action of recording contacts instantly may alter the behavior, thoughts, and feelings that are to be recorded (see Breakwell and Wood 1995; Thiele, Laireiter, and Baumann 2002). It is thus important to keep the recording as unobtrusive as possible.

To minimize such interruptions and potential distortion, therefore, the interval-contingent approach is a plausible strategy for recording contacts. For example, some studies have asked informants to record their contacts at the end of each day, when these contacts were still fresh in their minds (or even asked them to hand in their records daily), whereas others have used shorter intervals (e.g., every 6 hours or three times a day) to allow better supervision (Hirsch 1979; Jennings, Stagg, and Connors 1991; Jennings et al. 1995; Baumann et al. 1996; Lonkila 1999).

Because it may be difficult for some people to recall whom they have actually seen or conversed with during just a few hours (de Sola Pool and Kochen 1978), it also helps to urge the keepers to carry the log or a pad (that fits into pockets or purses) with them and jot down each contact as soon as possible (Fu 2005). To avoid interrupting the natural flow of daily life, however, the informants only jotted down a few key items about the contacts when the situations allowed so that they would have something to fall back on if they forgot about these contacts at the end of the day. Such devices help reduce the problems of recall and recollection during diary keeping.

Another option is to use a personal digital assistant (PDA) to program the diary log so a keeper can carry it and input all information about each contact as soon as possible. Depending on the keepers’ education level or lifestyle, these various devices should further help smooth the diary-keeping process. Although none of the pre-existing studies seems to have used the PDA as an instrument, the computer-assisted contact diary has brought some advantages (Baumann et al. 1996).

It may seem straightforward to record all kinds of contacts with all kinds of persons, but such a task is quite tedious, demanding, and time consuming, which leads to the question of how long one should keep the diary. The optimal duration of diary keeping is a trade-off between costs and benefits. On one hand, it is tempting to ask informants to keep diaries as long as possible to obtain an exhaustive list of network members. But the demanding and tedious task of diary keeping prevents many informants from logging the information for a long time. On the other hand, a short diary appeals to a larger number of informants and offers a better basis for inference, but it reveals little information about personal networks and interactions.

The pre-existing contact diaries lasted from 1 week to 100 days, and a “typical” diary usually took 1–2 weeks to finish (Gurevitch 1961; de Sola Pool and
Kochen 1978; Jennings, Stagg, and Connors 1991; Reis and Wheeler 1991; Nezlek 1993; Jennings et al. 1995; Lonkila 1999). One study even asked the informants to keep a diary of one hundred “consecutive interpersonal interactions” instead of setting a goal for a certain number of days (Conrath, Higgins, and McClean 1983).

A diary that lasts less than 2 weeks is apparently too short to assess the entire social network. Even “longer periods of observation” (e.g., up to 4 weeks, as suggested by Baumann et al. 1996:81) may not be enough. The pioneering study used 100 days as the yardstick because an experiment (based on one informant’s diary) indicated that the net increment during the tail end of that period “was small enough to justify termination of the procedure” (Gurevitch 1961:42–43).

However, according to another experiment, even such a long period of diary keeping may not be sufficient to cover the peripheral segments of personal networks. In a recent study in Taiwan that compared three informants’ diary records against the findings from a position generator they filled out at the beginning of diary keeping, 3 months of diary records revealed only about 50–70% of their contacts with the position-generated network members (Fu forthcoming). In other words, in some personal networks, up to half of the remote acquaintances might remain inactive for at least 3 months.

Keeping diaries in so much detail for such a long time requires a great deal of effort and commitment from the informants. For some, diary keeping is a way to help manage emotions and reflect on daily life, thus becoming “a self-initiated coping strategy for life’s hassles” (Breakwell and Wood 1995:297). For others, however, motivation may be low, and the tedious task presents a big challenge.

To ensure that the informants will complete their diaries, researchers need to use various resources, both tangible and intangible, and apply various strategies during data collection. For example, monetary incentives encourage the informants to maintain their diary-keeping routine. Most of the previous diary studies either used monetary incentives or gave gifts to their informants (Gurevitch 1961; Lonkila 1999; Fu 2005). As an average diary keeper spends 20–40 minutes each day for 90 days recording information about all daily contacts, compensating by the number of entries (besides the base payment) apparently helps motivate the informants to contribute their time and effort to diary keeping.

In a recent Taiwanese study (Fu 2005), each informant was paid a fixed amount of money plus a bonus based on the number of entries. An average informant was compensated for an amount equivalent to about US$100 per month, about one-fifth of the minimum wage. The bonus payment raises a
concern that some informants might make up false entries to boost the amount of compensation. Two measures in practice served to minimize such a potential bias. First, the time spent completing a single entry was significant, and the amount of money awarded for each additional entry was comparable to that of the minimum wage for the time expended. Second, the researchers periodically checked the entries for logic and consistency and verified whether the content of entries matched the informant’s work, family, and lifestyle. Therefore, it was no easy task and there was no strong motivation for any informant to produce false information deliberately. In other words, the goal is close to giving a “minimal but nontrivial extrinsic reward” that makes the exchange “feel equitable to subjects, but not so much that unmotivated subjects will enroll solely to receive the reward” (Reis and Wheeler 1991:286). Most importantly, however, the researchers screened the informants at an early stage based on the content of their diary entries, which helped ensure subsequent data quality.

In addition to financial capital, researchers’ enthusiasm, commitment, management, and social capital also may help enhance the informants’ willingness and ability to keep the diaries. In the aforementioned study, the researchers had built good rapport with the survey fieldwork supervisors in a previous survey (who later instructed and supervised the diary keepers), a precious resource that proved useful and productive in helping the informants during the diary-keeping process (see Fu 2004). Above all, the trust embedded in the strong ties between the researchers and the supervisors facilitated the information flow. Not only did the instructions flow to the informants through the supervisors more smoothly, any questions that the informants raised also reached the researchers more quickly and effectively.

Although such an information flow is important in all field methods, it is a more critical factor in diary studies, as the tedious nature of diary keeping requires the informants’ maximum efforts as well as close supervision from researchers and fieldwork supervisors. In a diary study that involves only several informants, the researcher(s) should supervise the informants directly. With larger numbers of informants, the researchers will need help from field supervisors who can ask detailed questions for clarification on the informants’ behalf, particularly at the early stages. By keeping constant contact with the diary keepers, then, the supervisors are more able to answer questions and solve problems.

In sum, different strategies in instrument design and fieldwork practice help smooth the process of diary keeping for informants. A simple, clear format or layout makes the instrument easy to understand. Incentives help motivate the diary keepers. Promising confidentiality and anonymity helps assure
diary keepers that they are protected. Training, instructions, rapport, checking, and following up all facilitate successful fieldwork (see Conrath, Higgins, and McClean 1983; Breakwell and Wood 1995; Thiele, Laireiter, and Baumann 2002). Although a well-designed instrument allows researchers to compare across different groups and various situations, careful practices in the fieldwork ensure that the informants will be cooperative, motivated, and interested in the research (Duck 1991; Reis and Wheeler 1991).

**CONCERNS ABOUT AND EXTENDED USES OF CONTACT DIARIES**

Despite recognizing the advantages of the diary approach, network researchers have expressed at least three concerns or reservations about it. First, the diary has been perceived as a tool to “elicit proxies for the global network” or to provide “an estimate of the subset of a subject’s total acquaintances that are active in a sample time period” (Freeman and Thompson 1989: 154; Bernard et al. 1990:180–81; Killworth et al. 1990:290, emphases added). It is true that the diary method records only people with whom the diary keeper is currently in contact. As it is taken within a short period of time, the diary data can only furnish proxies for the long-term, complete, and global network. Nonetheless, if network researchers want to understand active personal networks within a specific period of time, the diary approach that records all contacts with all kinds of persons yields all necessary and complete contact records. Those excluded from the diary are by definition not part of the active network during the time frame under study. For that reason, the contact diary is probably the only approach that records complete personal networks.

The second concern about the diary method centers on the issue of recall. When recalling, survey respondents normally remember only lengthy or emotionally significant contacts. Even when people recall their contacts during a short period of time, many tend to list a highly select group (de Sola Pool and Kochen 1978). Although recalling contacts cannot be perfect for a day or even a few hours, the contact diary nevertheless remains one of the most reliable instruments for collecting interpersonal contacts. With careful design and practice as discussed above, one should be able to minimize the problems associated with recall.

The third concern focuses on cost and feasibility. As Freeman and Thompson (1989) stated, the diary method may be too cumbersome and too expensive to apply in empirical research. In particular, it is not feasible to ask a large, random sample of respondents to finish the demanding diary keeping
during a long period of time while maintaining a reasonable response rate. As a result, the findings are not inferable to the general population or even to various people across different social groups. With only a small number of long diaries, however, researchers can gain complete information about certain personal networks that may be highly heuristic and illustrative. The use of contact diaries is thus justifiable.

To illustrate the advantages and the potential of diary studies, I next examine the findings from an ongoing diary study in Taiwan. In early 2004, sixty-two informants started to keep contact diaries for all kinds of contacts with all kinds of people. After 3 months, fifty-four informants completed the diary keeping, and eight dropped out, either because they were unable to finish (because of the heavy workload of diary keeping, family obligations, or fatigue) or because they were asked to stop due to the poor quality of their diary keeping.

The study’s diary keepers came from two major sources. First, twenty volunteered to participate in this project when I solicited forty-four respondents who finished the follow-up survey in a previous study (on another subject). Second, thirty-four family members and friends of the five survey fieldwork supervisors in the follow-up survey also volunteered to keep diaries. The fifty-four successful diary keepers were skewed toward individuals who were females (57%), younger (61% younger than age 40), and better educated (91% high school and above; see Fu 2004).

It is not surprising that females and better educated informants were overrepresented in the sample. As in previous network studies that solicited a small number of volunteer participants (particularly in experimental studies), this study relied somewhat on self-selection to recruit informants. Although about 40% of the informants came from a random sample of a previous sampling survey, this was not a representative sample (as in most experimental studies). In fact, one can only claim such representation with a relatively large number of respondents. As the sample size grows, nevertheless, it becomes so complex and cumbersome to manage and supervise that the length of diary keeping often needs to decrease substantially, probably down to a week or even just a few days. In other words, lengthy contact diaries and large surveys can supplement each other, but researchers are very unlikely to use both in the same study.

These fifty-four 3-month diaries yielded 103,016 contacts. Of all the contacts, 84,806 (82.3%) took place with 12,256 acquaintances (Table 2); other contacts were with strangers. During the period, an average diary revealed 227 network members, although the network size ranges between 55 and 790 among the diary keepers.
Such a network size is similar to, albeit a bit smaller than, what other methods have estimated. For example, the RSW method estimates the size of personal networks to be about 250 for United States respondents. Studies using the network scale-up method estimate a size of about 286–291 (Freeman and Thompson 1989; Bernard et al. 1990; Killworth et al. 1990; McCarty et al. 2001). By estimate, the size of personal networks can vary greatly, ranging from fifty to ten thousand (see Rogerson 1997). Thus, although personal networks are smaller in a 3-month study than one would expect in studies that retrieve from a lifetime of contacts, the result comes quite close to these previous studies.

Using contact as the unit of analysis, the study showed that the total number of contacts a day contributed to some informants’ positive feelings and evaluation toward each contact. The informants also regarded a contact as more significant when the contact was the first with a specific person during the recorded period, when they expected the contact to take place, and when they contacted the person by phone (Fu 2005).

TABLE 2
Contacts and Acquaintances in Fifty-Four Diaries

<table>
<thead>
<tr>
<th>Types of Contacts and Contacted Persons</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total contacts in 3 months</td>
<td>103,016</td>
</tr>
<tr>
<td>Contacts per informer</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>691</td>
</tr>
<tr>
<td>Maximum</td>
<td>5,446</td>
</tr>
<tr>
<td>Average</td>
<td>1,908</td>
</tr>
<tr>
<td>Total contacts with acquaintances</td>
<td>84,806</td>
</tr>
<tr>
<td>Contacts with acquaintances per informer</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>615</td>
</tr>
<tr>
<td>Maximum</td>
<td>4,463</td>
</tr>
<tr>
<td>Average</td>
<td>1,570</td>
</tr>
<tr>
<td>Total unique individuals contacted in 3 months</td>
<td>26,503</td>
</tr>
<tr>
<td>Unique individuals contacted per informer</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>92</td>
</tr>
<tr>
<td>Maximum</td>
<td>1,721</td>
</tr>
<tr>
<td>Average</td>
<td>491</td>
</tr>
<tr>
<td>Total unique acquaintances</td>
<td>12,256</td>
</tr>
<tr>
<td>Unique acquaintances contacted per informer</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>55</td>
</tr>
<tr>
<td>Maximum</td>
<td>790</td>
</tr>
<tr>
<td>Average</td>
<td>227</td>
</tr>
</tbody>
</table>
With every detail available at the contact, tie, and individual levels, diary data also allow more complicated analyses. For example, the tie strength among network members themselves serves to identify the extent to which the networks are closed (or the degree of “network closure,” with total closure’s meaning that all members in the same network know one another well). In general, a longer, nonroutine contact with nonkin acquaintances (which indicates a higher investment in time) is positively associated with a more pleasant feeling for the informants afterward (a higher expressive return). When the contacts are divided into three categories by the degree of network closure to which the contacts belong (i.e., open networks, partially closed networks, and closed networks), however, such an association between time investment and pleasant feeling differs significantly.

As Table 3 shows, a multilevel analysis reveals different effects on such perceptions of contacts. In open networks, in which the informant and his or her network member do not know each other’s family, the duration effects on the pleasant feeling remain clear. In closed networks, in which both parties know each other’s family well, such duration effects become less overwhelming. That is, when the networks are highly overlapped, the expressive returns on time investment in each contact decrease. When actors know each other’s family well, they seem to rely less on investing significant time in each contact to gain expressive returns. Based on the finding, one may argue that because overlapped networks are already embedded with richer social capital, the immediate returns on investment are less obvious (Fu 2004). Depending on researchers’ interest, then, diary data offer rich information that accommodates sophisticated analyses at the contact, tie, and individual levels.

CONCLUSION: ADVANTAGES, POTENTIAL, AND LIMITATIONS

The contact diary represents one of the most tedious and difficult means for collecting information about ego-centered networks. With all the details embedded in the rich data, however, the diary also represents one of the most comprehensive research instruments for measuring personal networks. By means of a thoughtful research design, including a diary log that is all-inclusive yet convenient to use, and fieldwork practices that aim to assist diary keepers at all stages, researchers should be able to carry out diary studies according to different research interests.

The advantages of using contact diaries are obvious. Diary keeping is an easy, familiar, nonintrusive, everyday task for many people, who thus tend
FIELD METHODS

It is cost-effective and easily applicable. The rich data are ordered over time so as to map temporal sequences of contact patterns. Moreover, diary entries can be highly structured and readily transformed into systematic data for analyses (Duck 1991; Breakwell and Wood 1995; Thiele, Laireiter, and Baumann 2002).

### TABLE 3
Multilevel Effects on the Perception of Contacts by the Degree of Network Closure
(Unit-specific Bernoulli Logit Models, with Fifty-Two Diaries)

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Open Networks Model 1</th>
<th>Partially Closed Networks Model 2</th>
<th>Closed Networks Model 3</th>
</tr>
</thead>
</table>
| **Dependent variable = feeling about contact**
| (1 = very pleasant, 0 = less pleasant) |
| Contact situations Duration (< 1 min.) | | | |
| 1–5 minutes | .357(.083)*** | .073(.078) | –.055(.141) |
| 6–29 minutes | .595(.085)*** | .309(.082)*** | .231(.144) |
| 30 min.–2 hours | .442(.100)*** | .508(.096)*** | .377(.161)* |
| More than 2 hours | 1.052(.107)*** | .744(.103)*** | .719(.179)*** |
| Media (face-to-face) | | | |
| By phone | –.050(.067) | .027(.064) | .025(.092) |
| By mail | .315(.256) | .122(.275) | .177(.545) |
| Initiated by (alter) | | | |
| By ego | .111(.052)* | .183(.057)** | .399(.089)*** |
| Mutual | .086(.063) | .364(.070)*** | .685(.121)*** |
| By chance | .245(.101)* | .106(.108) | .333(.154)* |
| Content (others) | | | |
| Work/business | –.501(.070)*** | –.482(.073)*** | .183(.136) |
| Leisure/social | .391(.077)*** | .076(.069) | .273(.114)* |
| Expected contact | .145(.027)*** | .125(.029)*** | .103(.045)* |
| Char. ego/alter ties | | | |
| Same age groups | .213(.046)*** | .116(.047)* | –.129(.075) |
| Tie strength | .441(.043)*** | .441(.052)*** | .864(.099)*** |
| Level 2 (diary keepers) | | | |
| Intercept | –3.403(1.12)** | –2.263(.939)* | –2.119(.921)* |
| Age groups | .403(.322) | .168(.268) | .202(.253) |
| Level 1 df | 20,629 | 16,915 | 5,928 |
| Level 2 df | 50 | 50 | 44 |

**NOTE:** Numbers in parentheses are standard errors. After each independent variable, category in parentheses indicates comparison group among dummy variables.

* = p < .05; ** = p < .01; *** = p < .001.
Compared with one-shot surveys or interviews, contact diaries enable researchers to minimize distortion caused by bias in recollecting, selecting, and summarizing across many events (Reis and Collins 2000). Diaries can be more reliable than questionnaires, and they can be used as a yardstick to evaluate the validity of other techniques (Conrath, Higgins, and McClean 1983). As the previous section shows, moreover, incorporating survey questions into the diary can enrich analyses. Thus, combining the contact diary with other approaches further increases its potential as a potent and flexible method for studying personal networks, which, in turn, helps explore “theoretically interesting issues in a novel, unique, or empirically superior fashion” (Reis and Wheeler 1991:310–11).

Keeping track of all contacts for 3 months may sound difficult and challenging at first, but it has proved to be a feasible approach, as the fifty-four diary keepers have demonstrated in the recent study cited earlier. In that study, several other follow-up steps point to more potential for the diary approach. For example, after they finished the initial 3-month diary keeping, fifteen informants kept a shortened version of the diary for 9 more months.

This abridged diary consisted of two parts. First, it recorded only the contacts with acquaintances who were absent from the initial 3-month diary but who came in contact with the informants during the 9-month period. Second, in a separate log, the diary keepers recorded contacts with any new network members with whom they became acquainted during the same 9-month period. Some diary keepers were uncertain about whom to include in this second log, mainly because neither the phrase new network members nor became acquainted with sufficed to give clear-cut definitions. Although the shortened diary gives no information about the contacts with strangers, it merges with the initial diary and adds up the data, revealing actual and comprehensive year-long personal networks.

Moreover, twenty-four initial diary keepers were asked to evaluate the strength of ties among all of the network members who had contact with them within the past 3 months. Another strategy was to ask each network member how well he or she knew each other member on the list. Such an attempt did not succeed, because it proved extremely difficult to locate all network members and ask every one of them to assess their one-on-one relationship with several hundred other members. Combined with such rich information about the tie strength among network members, the contact-level diary data offer even greater details that should help researchers understand how active and comprehensive personal networks form and function.

Thus, on one hand, contact diaries can be extended to cover personal networks that are active during a very long period of time (from which one
is able to identify who also had become less active). On the other hand, not only does the diary provide basic information about the network members and the relationships between the informants and these members (i.e., ego-alter ties), it also can expand to embrace the relationships among these members themselves (i.e., alter-alter ties). By aggregating across observations and contacts over time, therefore, the diary approach has great potential for producing reliable and detailed accounts of daily contact and personal networks based on multilevel as well as longitudinal analyses (see Reis and Wheeler 1991; Breakwell and Wood 1995).

Like any method, contact diaries face obvious limitations. First of all, diary studies often become very labor intensive and overwhelming for participants and researchers. The protocol may be too cumbersome to follow; diary keepers tend to underreport fleeting contacts or contacts received from other persons; they also may not endure the long period of diary keeping; the content is subject to self-selection, social desirability, and manipulation; the keepers’ perceptions may change between contact and recording; data quality and reliability are hard to control; and attrition may be very high (Conrath, Higgins, and McClean 1983; Duck 1991; Breakwell and Wood 1995; Baumann et al. 1996; Reis and Collins 2000; Thiele, Laireiter, and Baumann 2002). In sum, although diaries have been “significantly superior to questionnaires in terms of reliability” (Higgins, McClean, and Conrath 1985:174), they have their own shortcomings. To assure the methodological quality of contact diaries, it is thus essential to implement the various control strategies discussed in the earlier sections.

The most significant limitation to the diary approach may lie in the sampling schemes and the small number of informants. Because the approach imposes a demanding task on diary keepers, researchers usually focus on a small number of cases and may miss a broader picture across various groups of the general population. It is thus likely that part of the findings may be biased because of personal idiosyncrasies. Although the researchers who use the diary approach should be careful not to risk overgeneralization, an in-depth analysis of the diary data advances the overall understanding of the ego-centered networks. As a large amount of network data becomes widely available from more large-scale surveys, moreover, researchers should be able to verify the findings from the diary data against the survey data. In sum, the diary approach is far from perfect. Despite the difficulty in its implementation and its limitation in terms of making general inferences, the contact diary remains a reliable tool that offers a versatile and attractive alternative to the more common approaches to exploring personal networks.
NOTE

1. An “open network” refers to a network within which members are connected with one another only loosely, thus opening up space and holes in the network structure; a “closed network” refers to a network in which members are connected with one another tightly, thus representing a closed structure (see Bott 1957; Burt 1992, 2001).

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