Check the phone book: Testing information and communication technology (ICT) recall aids for personal network surveys

Yuli Patrick Hsieh *

Program on Digital Technology and Society, Survey Research Division, RTI International, United States

A R T I C L E   I N F O

A B S T R A C T

This study tested two recall aids for the name generator procedure via a randomized web experiment with 447 college students, eliciting their personal networks. Compared to participants solely presented with the name generator, participants being prompted and probed to consult records saved in their communication devices provided more comprehensive network data and more weak ties. Furthermore, these data were garnered without either a substantial increase in item nonresponse or a decrease in completion time for subsequent name interpreters. Thus, ICT recall aids are deemed cost-effective and context-neutral techniques to improve the recall accuracy of data collected by the name generator.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

Social scientists have employed the *name generator* procedure to collect self-reported information about individuals' personal networks to examine the implications of interpersonal environments for people's attitudinal and behavioral changes (e.g., Burt, 1984; Fischer, 1982; Hampton et al., 2011b; Katz and Lazarsfeld, 1955; Marsden, 1987; McPherson et al., 2006; Wellman, 1979). This procedure is a crucial and common instrument for studying the size and composition of respondents' personal networks, since respondents themselves are generally the primary source for this information. However, self-reports on personal networks often result in significant underreporting of such information, which impairs the accuracy of findings and inferences drawn from personal network research.

The methodological challenge of the cognitively demanding name generator procedure involves recall accuracy (Freeman et al., 1987), as a substantial body of research has identified that respondents tend to forget and underreport their personal contacts when answering to the name generator (Brewer, 1993, 2000; Brewer and Webster, 1999; Brewer and Yang, 1994; Freeman et al., 1987; Hammer, 1984; Marin, 2004). Consequently, the name generator tends to capture close confidants – a limited subset of personal network members (Marsden, 1987). In addition, some recent studies

(Matzat and Snijders, 2010; Vehovar et al., 2008) have discovered that, not only were respondents likely engaged in satisficing behaviors (Groves et al., 2002; Krosnick, 1991) when answering to the name generator procedure, but they were much more likely to provide inferior quality data or drop out in a self-administered Web survey than other survey modes in the presence of interviewers. Thus far, although a few techniques for delimiting comprehensive personal networks (e.g., Bidart and Charbonneau, 2011; Brewer and Garrett, 2001; Hlebec et al., 2006; Marin, 2004) and reducing the respondent burden (Marin and Hampton, 2007; McCarty et al., 2007) have been proposed, there is little work addressing the use of memory aids (e.g., Glasner and van der Vaart, 2009) that improve the recall accuracy for personal network data collection.

This paper adds to this line of research by developing and testing information and communication technology (ICT) recall aids for use with the name generator procedure. The goal is to improve the quality of the data that the method generates. By drawing on work in information and communication studies (e.g., Haythornthwaite, 2005; Kim et al., 2007; Licoppe and Smoreda, 2005; van Cleemput, 2010), I submit that the contact records saved in a respondent's various ICT devices (such as the "phone book" stored in a mobile phone or the "friends list" on a social network site (SNS) profile) constitute useful references for survey respondents to consult when they are asked about their personal contacts.

The remaining sections start by assessing the name generator procedure and then articulating how ICT recall aids can serve as useful references during personal network data collection. Next, the research methodology is detailed, including the experimental design and analytic procedure, followed by the findings regarding the personal network data and the data quality indicators obtained

* Correspondence to: Program on Digital Technology and Society, Survey Research Division, RTI International, 230 W. Monroe St., Chicago, IL 60606, United States. Tel.: +1 312 777 5234.

E-mail address: yulihsieh2012@u.northwestern.edu

under the different experimental conditions. This paper concludes with a discussion of the limitations and contributions of the study, and recommendations on how ICT recall aids can best be used in empirical personal network surveys.

2. Assessment of the name generator procedure

Although various instruments used to collect information of personal networks were introduced in a few seminal works on interpersonal influences and support (e.g., Coleman et al., 1957; Fischer, 1982; Katz and Lazarsfeld, 1955; Laumann and Pappi, 1973; Wellman, 1979), one of the most widely adopted name generator procedures is the question put forth in the 1985 General Social Survey (GSS) eliciting the contacts with whom respondents have discussed important matters (Burt, 1984, 1985). According to Burt (1984, pp. 294–295), the purpose of the GSS name generator procedure is to collect information describing the extent to which one's interpersonal environment is socially diverse, as well as its implications for one's attributes, attitudes, and behaviors. By re-analyzing the personal network data collected from the participants in a study by Fischer (1982), Burt (1983) found that the question "discuss personal matters" was a stable point of reference with a relatively unambiguous meaning of social relationships for the respondents. He discovered that the contacts enumerated by this question were clearly distinct from, and equally mixed with, the major relationship domains such as kinship, acquaintance, friendship, and work. Consequently, Burt adopted this question and changed the wording to "discuss important matters" for the final instrument of the GSS name generator, while the substance of those matters was left open for respondents' subjective definition. This change reflected his effort to make the question more salient to all respondents and to broaden the "boundary" framing of the question.

In practice, researchers expected the contacts elicited by the GSS name generator to be a small, core set of comparatively strong ties in one's personal networks (Burt, 1984; Marsden, 1987, p. 123). A few methodological studies have shown that, despite the differences in respondents' interpretation of important matters (Bailey and Marsden, 1999) and the variations in the wording of the question (i.e., discuss important matters versus discuss political matters) (Klofstad et al., 2009), the demographic composition of the elicited personal networks from different studies varied only modestly (Campbell and Lee, 1991). The instrument's inability to capture the breadth of the interpersonal environment may be attributed to the intimacy criterion underpinning the meaning of "discuss important matters." In response to such concerns, Burt (1984, pp. 317–320) considered intimacy as a suitable anchor for delimiting the scope of inquiry, since it carries the primary weight of social and normative influence on people's lives. Thus, the GSS name generator serves as an appropriate compromise for collecting personal network data with a short amount of time using only a single question.

2.1. Data quality challenges to personal network data collection

2.1.1. Implications of the inability to obtain weak ties

Just like the importance of strong ties to one's social support, weak ties also serve as conduits of diverse social resources for individuals (e.g., Constant et al., 1996; Crowell, 2004; Friedkin, 1982; Granovetter, 1973; Levin and Cross, 2004). Therefore, collecting data about respondents' weak ties is crucial to the research of interpersonal influence in the social science fields. However, given its limitations, the name generator might fall short in its original purpose of describing various important aspects of individuals' interpersonal environment for studying social support, social integration, civic engagement, and other normative aspects of social

capital (e.g., Coleman, 1988; Hampton et al., 2011b; McPherson et al., 2006).

To address the strong-tie bias of egocentric network data obtained by the name generator, researchers may either employ a battery of context-specific name generators (Bidart and Charbonneau, 2011; Hlebec et al., 2006; Marin and Hampton, 2007; McCallister and Fischer, 1978), a contact diary (Fu, 2007; Fu et al., 2013), or different approaches (Lin et al., 2001; McCarty et al., 1997; van der Gaag and Snijders, 2005) to gather data about weak ties in one's personal networks. However, these techniques also come with other constraints. For instance, using multiple context-specific questions may be impractically resource-consuming for researchers. Respondents may also change their cognitive schemes and draw upon different sets of contacts across generators, making the recall process and response evaluation more difficult. Alternative network generators may also be empirically inapplicable due to either cultural specificity (McCarty et al., 1997), or the inability to obtain structural measures of weak ties beyond crude estimates of counts (i.e., social positions or types of resources) (Lin et al., 2001). More importantly, they do not directly address the underlying methodological challenges, such as recall accuracy, of the name generator. As such, some significant improvements of the name generator could be made to obtain better data concerning both strong and weak ties for examining the dynamics of resource flows and influence (e.g., Aral and Van Alstyne, 2011; Constant et al., 1996; Friedkin, 1982; Haythornthwaite, 2005) in the contexts of personal networks.

2.1.2. Question wording

First, when respondents are asked to report their discussion partners of important matters within a lengthy six-month time frame, the question may implicitly bias responses toward face-to-face communication. As a result, respondents may be more likely to report only the contacts with whom they have had face-to-face conversations, regardless of the topic of discussion (Campbell and Lee, 1991; Hampton et al., 2011b, p. 144). This implicit interpretation of wording can be considered as a systematic bias frequently found during the response formation process to a cognitively complex question (e.g., Tourangeau et al., 2000). Although people are likely to talk about many important matters in person with those to whom they are *not* emotionally close (Small, 2013), the interactions with weaker ties may happen sporadically, and hence, become more difficult to recall correctly for a given time frame. Empirically, researchers may still encounter difficulty in obtaining influential personal contacts beyond the immediate kinship circle, even using multiple well-defined questions to generate the network ties. For example, Katz and Lazarsfeld (1955) found that the respondents' everyday contacts, defined as the people with whom the respondents were inclined to talk about things they learned from the mass media, were predominately strong ties in the family circle (84%). Conversely, they found that a larger portion (51%) of the "general influential" contacts, whose opinions were held in high regard by respondents, were outside of their family circle.

2.1.3. Recall accuracy and forgetting

Respondents' recall accuracy is arguably the most challenging methodological issue that leads to systematic underreporting of personal network information (Brewer, 2000; Freeman et al., 1987). The systematic underreporting associated with the name generator procedure represents respondent-related and instrument-related measurement errors, given that individuals may encounter dozens or hundreds of contacts in their lives. Furthermore, they may have comparatively close relationships with people outside of their immediate social circle.

Prior research has revealed that individuals tend to remember and organize their memory around the people they know based