Measuring personal networks with daily contacts: a single-item survey question and the contact diary

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Abstract

This paper examines two extreme approaches that are alternatives to measure egocentric networks with network generators. The single-item approach to measure daily contacts differentiates the individuals effectively, corresponds closely with complex network measures, and reveals well how individuals vary in both expressive and instrumental returns, as supported by 14 large-scale probability surveys from three Chinese societies over a decade. This paper also draws upon three sets of sophisticated contact diaries, which yielded rich data about the circumstance of each contact, the alter's characteristics and the ego–alter relationship. Along with the diary approach, which offers sophisticated data about contacts, ties and networks, the single-item survey approach is another extreme yet straightforward measure of daily contacts.
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Keywords: Personal networks; Daily contacts; Contact diary

1. Introduction

The study of personal networks faces a fundamental issue: how to conceptualize and measure a network's size and range. It is difficult to delineate a personal network precisely because, conceptually, there is usually no clear boundary around a network, and many network members change over time. In practice, it is also nearly impossible, or at least impractical, to list all of the members in an egocentric network.

This paper aims to address this basic issue of measuring egocentric networks by exploring and comparing two extreme measures of daily contact. One measure is a simple,

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straightforward, single-item approach that asks survey respondents roughly how many daily contacts they have. The answers typically contain several ordinal categories, ranging, for example, from "0 to 4 persons" to "over 100 persons." The other measure, at the other extreme, requests that a small number of informants provide a detailed daily account of the actual contacts they have made during a specific time period. A typical example of such a research instrument is a diary log that records detailed information about every single contact in a person's daily life. While both of these measures yield information about daily contacts and estimates of personal networks, they require minimal or maximal efforts and provide a crude estimate or rich details.

On the surface, choosing between these two measures, or choosing any other measure of personal networks, would appear to be a matter of balancing between cost and information. The single-item approach incurs minimal cost, but it also provides minimal information. In contrast, the contact diary approach requires maximal efforts, though it helps gather rich information. Common wisdom would indicate a preference for employing the measure that would provide the maximal information—the contact diary measure.

However, objectively, researchers could make the most effective choices, if we were to gain better knowledge about how stable or useful these measures could be. That is, are they reliable in estimating the actual number of daily contacts? And, do they show a differential extent of associations with measures of other concepts in prediction or explanation? If the single-item measure indeed shows a similar extent of association as the contact diary with measures of other critical concepts, perhaps the cost incurred by the latter measure for presumed substantive or conceptual gain would not be justified.

The goals of this paper are two-fold. First, it will assess how well these two different measures function as estimates of the extent of daily contacts, by comparing them with other, more established measures of egocentric networks. Second, it will examine the usefulness of these measures, as they help explain the variation in expressive and instrumental returns.

Data include both large-scale surveys and individual contact diaries. The survey data are taken from 14 large-scale surveys conducted in mainland China, Taiwan and Hong Kong from 1993 to 2002. The diary data include complete sets of contact information recorded by three informants in Taiwan over a period of 3–4 months in 2001.

2. Network generators and alternative measures of daily contacts

As knowledge about personal networks accumulates, it remains unclear how one can confidently measure or estimate the total number of people that an individual knows. It can be extremely difficult and demanding to ask informants to write down or count all of the people they personally know, that is, to literally give a comprehensive and exhaustive list of all of the members in their personal networks. Such a task would be unfeasible because network members are usually too numerous and diverse to recall, while informants may differ greatly in how they define the network boundary. In addition, the task requires enormous time and effort, which would overwhelm most informants (Pool and Kochen, 1978; Freeman and Thompson, 1989; Killworth et al., 1990, p. 290).

Unable to measure the size and content of personal networks in a direct and reliable manner, researchers have employed various devices that aim to refresh subjects' memory in