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Network Bridging Potential in Later Life:

Life-Course Experiences and Social Network Position

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Abstract

Objectives—Much work in social gerontology has examined older adults' social connectedness, but we know little about the extent to which older adults occupy positions of power and independence in their networks. The author uses health and life-course frameworks to understand older adults' prospects of occupying bridging positions between otherwise unconnected individuals.

Methods—Egocentric social network data were collected from a nationally representative sample of 3,005 older adults between the ages of 57 and 85 in 2005–2006. A series of multivariate regression analyses was used to examine how health and life-course factors relate to bridging.

Results—Age is not significantly associated with bridging. However, retirees and people with poor health are less likely to have bridging potential. At the same time, widows are more likely to serve as bridges.

Discussion—The discusses the need for more dialogue between social network researchers and social gerontologists to help explain older adults' bridging prospects.

Keywords

social networks; aging; life course; health; retirement; widowhood

Over the last two decades, social gerontologists have shifted from conceptualizations of older adults' social integration that focus on roles and activities to network-oriented treatments (e.g., Adams & Torr, 1998; Ajrouch, Blandon, & Antonucci, 2005; Antonucci & Akiyama, 1987; Cornwell, Laumann, & Schumm, 2008; Crosnoe & Elder, 2002; Litwin, 2003; Morgan, 1988; Schnittker, 2007; Shaw, Krause, Liang, & Bennett, 2007). This research tends to emphasize the advantages of being embedded in social capital-rich networks like those described by Coleman (1988), especially in terms of access to social support. Yet some social gerontological perspectives suggest that older adults also value and/or benefit from having access to social resources which are not usually associated with social capital, like power and independence. This issue has not been addressed by network-oriented social gerontologists.

In this article, I focus on one aspect of social network connectedness that may provide older adults with some power and independence—bridging potential. One acts as a bridge in a network when one is connected to at least two individuals who otherwise are not connected to each other. Compared to people whose contacts are already acquainted with each other, those who occupy such bridging positions (a) tend to have access to a wider variety of resources

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from different social domains; (b) have the opportunity to control the flow of information and resources through their networks; (c) can broker resources between others; and (d) are more independent from the control of others (Burt, 1992; Emerson, 1962; Freeman, 1979; Gould & Fernandez, 1989; Granovetter, 1973). These benefits may be particularly attractive to older adults who value their independence in the face of potentially isolating experiences of later life.

There has yet to be a systematic study of the distribution of network bridging potential among older adults, so we do not know to what extent they maintain this form of power and independence in their social lives. Likewise, we do not know what factors shape older adults' bridging opportunities. To explore these issues, I analyze social network data gathered recently for the National Social Life, Health, and Aging Project (NSHAP), a population-based study of 3,005 older adults between the ages of 57 and 85 conducted in 2005–2006. I describe two measures of bridging in these older adults' social networks, and present a series of regression analyses that examine the extent to which factors like age, health problems, and other later-life experiences inform the distribution of bridging among older adults. Analyses suggest that although age itself is not associated with bridging among older adults, some common later-life experiences are. Retirement and health problems are negatively associated with bridging, whereas bereavement is positively associated with bridging. I close by offering interpretations of these findings and by addressing several promising directions for future network-oriented social gerontology.

The Value of Social Networks in Later Life

Social gerontologists have documented numerous benefits of social connectedness for older adults. Large social networks are beneficial because they provide access to a large pool of resources. However, the specific composition and structure of older adults' networks is also important. Whereas younger adults tend to prioritize social ties that yield access to instrumental resources, older adults place a greater emphasis on emotional satisfaction in social relationships (see Carstensen, 1991; Fredrickson & Carstensen, 1990; Lang & Carstensen, 1994). Therefore, older adults may prefer networks that are comprised of kin and strong ties. Similarly, high-density (usually kin-centered) networks, in which one's network members know each other, are valuable because they provide tight-knit contexts in which contacts can triangulate information, share caregiving duties, and pool resources. These networks help to cultivate shared social norms and trust, and often provide access to unconditional social support (Antonucci & Akiyama, 1987; Coleman, 1988; Haines, Hurlbert, & Beggs, 1996; Hurlbert, Haines, & Beggs, 2000; Kelley-Moore, Schumacher, Kahana, & Kahana, 2006). Those who have sparser networks tend to have less access to social support, companionship, and emotional aid (Haines & Hurlbert, 1992). Such structural features of networks are important to consider in social gerontological research because older adults often face personal crises, like severe health problems, which require them to access social capital.

Some research implies that different types of network structures may be equally as important for older adults but for entirely different reasons. Social gerontologists have argued for decades that older adults are devalued in and disenfranchised from modern society, resulting both in lower social status (Burgess, 1960; Cowgill, 1986) and greater dependence on younger adults (see, for example, Townsend, 1981). One criticism of Cumming and Henry's (1961) famous claim that older adults voluntarily "disengage" from society is that they are instead forced to withdrawal from powerful social positions by younger adults (Turner, 1989). Some may counter that older adults' dependency on others is often an unintended consequence of well-meaning (but overbearing) network members' efforts to provide social support (Silverstein, Chen, & Heller, 1996). From these perspectives, what might matter more to some older adults is not how much support, social capital, and emotional satisfaction they derive from their

networks but rather how much *power and independence* their networks grant them. Some evidence that older adults value autonomy and independence exists in the form of research which demonstrates that being dependent on receiving excessive support from network members often leads to emotional distress, feelings of vulnerability, decreased self-esteem, and a feeling of being coerced (Arling, 1987; Cohler, 1983; Coyne, Wortman, & Lehman, 1988; Krause, 1987; Lee, Netzer, & Coward, 1995; Lowenstein, Katz, & Gur-Yaish, 2007; Martire, Stephens, Druley, & Wojno, 2002; Townsend & Poulshock, 1986; Vinokur & Vinokur, 1990). With this in mind, an issue that warrants greater attention in social gerontology is the extent to which older adults derive power and independence from their social networks.

Social Network Bridging

Social network researchers have identified certain positions within networks that grant power and independence. A key concept in this respect is network *bridging*.A network bridge exists wherever an individual serves as a link (i.e., a bridge) between two or more people or groups who otherwise would not be connected to each other. This has been discussed in terms of network betweenness (Freeman, 1979), brokerage (Gould & Fernandez, 1989; Marsden, 1982), boundary spanning (Aldrich & Herker, 1977; Coleman, 1990), and bridging potential (Burt, 1992).

Bridging is antithetical to the notion of social capital as described by Coleman (1988; see Burt, 2005), which depends on triadic closure (where one's network members already know each other). By definition, people who occupy bridging positions are connected to some people who are *not* connected to each other—that is, they cannot directly engage in exchanges with each other, cooperate with each other, establish a common system of norms, or trust each other. Therefore, classic social capital benefits (e.g., triangulation of information, reputation) are not available through bridges.

A different class of benefits is available to those who serve as bridges. Simmel (1908/1950) noted some of the consequences of serving as an intermediary between two parties, such as the ability to mediate conflicts and to play two parties against each other for personal gain (i.e., "*tertius gaudens*"). Advantages of bridging have been explored extensively in research on social exchange and social networks. Having unconnected partners increases bargaining power in social exchanges, since only the intermediary knows what both exchange partners possess, has alternative sources of resources, and can weigh their relative costs (Cook & Emerson, 1978; Marsden, 1982). This increase in exchange power simultaneously reduces dependence on others (Emerson, 1962). Intermediaries in networks also have "brokerage potential" (Burt, 1976; Gould & Fernandez, 1989; Marsden, 1982) meaning that they can transfer resources between parties and extract rents from these transfers (Burt, 1992). If two of a person's network members are not connected because they belong to different clusters, they also likely provide access to distinct pools of resources. This increases flexibility and may give one options when seeking social support or other resources. During a health crisis, for example, bridging positions may make it easier to identify alternative care providers or treatment options and to gather nonredundant health information. In short, people who occupy bridging positions have control over the flow of resources in their networks and have a unique perspective from which to identify alternatives, thus increasing one's power and reducing one's dependence on any single network member.

Bridging positions may be attractive to anyone, but they may be valued particularly highly by older adults who fear loss of control and autonomy in their later years. Researchers have documented declines in sense of independence and control (including control over receipt of social support) with aging, particularly in the case of care recipients (see, for example, Krause, 2007; Mirowsky, 1995; Silverstein, Chen, & Heller, 1996; Wolinsky & Stump, 1996). This is thought to directly increase the risk of negative outcomes such as elder mistreatment (Quinn

& Tomita, 1986). Thus, bridging may be beneficial to older adults regardless of whether they want power or brokerage potential. Unfortunately, little is known about the factors that facilitate or impede the extent to which older adults can maintain positions of power and independence within their social networks (i.e., bridging potential). In the remainder of this article, I examine several factors which may shape older adults' bridging opportunities in social networks, with a particular focus on older adults' health and life-course experiences.[1]

Health, Aging, and Bridging

The conventional wisdom, from structural network research, is that bridging arises largely inadvertently from persons' involvement in less cohesive social groups and nonoverlapping social domains and also from the maintenance of weak social ties (Feld, 1981; Granovetter, 1973). In contrast, others contend that economic motivations and an "entrepreneurial personality" are largely responsible for bridging (Burt, Jannotta, & Mahoney, 1998; Kalish & Robins, 2006). Most of what we know about older adults runs counter to both of these models. Because older adults tend to value close (as opposed to weak) ties and because they seem to value emotional satisfaction over instrumental and entrepreneurial goals (Carstensen, 1991; Fredrickson & Carstensen, 1990), it is reasonable to expect bridging to decline with age.

Certain life-course experiences also may shape older adults' bridging prospects. Researchers have used the life-course perspective (Elder, 1985; George, 1993) to underscore the implications of later-life challenges for older adults' network connectedness and their involvement in the community (see, for example, Adams & Torr, 1998; Morgan & March, 1992). Bereavement, especially widowhood, is one of the most trying experiences that commonly face older adults. Much research has examined the impact of bereavement on emotional and psychological outcomes like depression (e.g., Carr, House, Wortman, Nesse, & Kessler, 2001), although little is known about the network-structural implications of bereavement. Available evidence suggests that although bereavement initially shrinks the size of one's network, it does not initiate an irreversible downward cycle of social withdrawal and isolation. Instead, it prompts greater involvement in the community and stronger connections with friends and family (Cornwell et al., 2008; Hatch & Bulcroft, 1992; Li, 2007; Utz, Carr, Nesse, & Wortman, 2002). This idea dovetails with social compensation and continuity models of aging, which hold that older adults are capable of adapting to the social challenges of later life to sustain their ties to social networks (Atchley, 1989; Ferraro, 1984; Lemon, Bengtson, & Petersen, 1972). When bereavement involves the loss of a close family tie, it will reduce the overall kin and strong-tie composition of one's network which, in turn, may increase bridging potential. At the same time, if compensation and adaptation models are accurate, the loss of a close confidante like a spouse may enhance subsequent preference for kin relations, good friends, and other close contacts (who are likely to know each other). This, in turn, would decrease bridging potential.

Retirement also may affect bridging. There is some evidence that retirement increases volunteerism (Caro & Bass, 1997; Mutchler, Burr, & Caro, 2003), but it is less clear how it affects interpersonal connectedness. Contact with the broader community means access to weak ties. And because retirement reduces contact with the main social domain that is separate from one's family and friends (i.e., the workplace), it is likely to reduce bridging potential. (Not only are most coworkers unlikely to be connected to one's friends, family members, and other close contacts but also most relationships with coworkers are likely to be relatively weak

[1]One reviewer took issue with the fact that there is no direct evidence (in social gerontological research) that bridging yields power and independence. It is not clear, however, why this should come into question when studying older adults more than it would for any other group. Still, it might be useful in the future to test whether Emerson's (1962) power-dependency theory, Granovetter's (1973) weak tie theory, or Burt's (1992) structural hole theory explain less (or more) in older adult samples.

ties.) A recent study by Cornwell et al. (2008) finds that, among older adults, retirees have more confidantes and tend to feel closer to them. This suggests that although retirees lose those weaker ties to their coworkers and may have smaller networks overall (Mor-Barak, Scharlach, Birba, & Sokolov, 1992), they will have the opportunity to invest more in their networks of strong ties. This can be an advantage in terms of access to social capital, but it is likely to reduce bridging potential.

Health also might play an important role in shaping older adults' bridging opportunities. Bridging positions are known to be socially taxing, high-pressure ones. They often involve transmitting high volumes of information and resources between separate groups that may make conflicting demands (Coleman, 1990; Friedman & Podolny, 1992). Greater effort is required to fulfill the social responsibilities associated with bridging positions. Bridging positions may very well be the most inhospitable, high-maintenance, challenging types of social network positions a person can occupy (Burt, 1992). This may help explain Haines and Hurlbert's (1992) finding that greater network range increases stress, and the finding that bridges are more unstable and decay more rapidly than other types of social ties (Burt, 2002; Krackhardt, 1998). In short, people who are in better health may simply be better *able* to occupy bridging positions. The effort that goes into establishing and maintaining contacts, as well as transmitting resources between disconnected groups, is partly physical. There is some evidence that functional health problems reduce involvement in volunteering (Li & Ferraro, 2006; Thoits & Hewitt, 2001), which could then lead to a reduction in weak ties. In addition, the challenges of coordinating communications and the capacity to organize accordingly are partly cognitive. Therefore, cognitive health is likely to matter as well. This potential link between health and bridging has yet to be evaluated in an empirical analysis.

Health problems may reduce bridging potential indirectly as well. Many scholars note surges of social support from network members following the onset of health problems (Antonucci &Akiyama, 1987; Kahn &Antonucci, 1981; Thoits, 1995). Network members who offer support during a health crisis often increase contact with each other to coordinate caregiving duties (Beggs, Haines, & Hurlbert, 1996; Kazak & Marvin, 1984). And this swell of support is most likely to involve kin relations who know each other, as kin are more socially obligated to provide care, are less bothered by the prospect of exchange inequity or care recipients' inabilities to reciprocate, and are less likely to avoid contact with recipients out of respect or to avoid embarrassing caregiving situations, such as helping one go to the toilet (Adams & Blieszner, 1995; Ingersoll-Dayton & Antonucci, 1988; Jang, Haley, Small, & Mortimer, 2002; Schieman & Turner, 1998; Ville, Ravaud, & Tetrafigap Group, 2001; Wentkowski, 1981). These processes may result in a decline in the prevalence of weak ties and an increase in the prevalence of strong, kin-based ties in the networks of older adults who suffer from physical and/or mental health problems (Stoller & Pugliesi, 1991). This, in turn, will reduce bridging potential.

The issue of how factors like bereavement, retirement, and health are associated with bridging is especially relevant to older adults because these factors are more salient in later life. I will spend the remainder of this article exploring the links between these later-life experiences and older adults' bridging potential. This investigation is intended to provide a sense of the relationship between aging and a highly consequential feature of social network connectedness.

Method

I examine these issues using data from NSHAP, a nationally representative study of 3,005 noninstitutionalized older adults between 57 and 85 years of age, conducted in 2005–2006. The NSHAP sample was selected from a multistage area probability design, with oversampling by race/ethnicity, age, and gender. The final response rate is 75.5%.[2]

NSHAP collected extensive information about older adults' egocentric social networks. Interviewers asked respondents the following:

> From time to time, most people discuss things that are important to them with others. For example, these may include good or bad things that happen to you, problems you are having, or important concerns you may have. Looking back over the last 12 months, who are the people with whom you most often discussed things that were important to you?

Respondents could name up to five people (but they also indicated if they had more than five confidantes). They were asked about frequency of interaction with and closeness to their confidantes, the nature of their relationship with each confidante, whether each confidante lives with them, how likely they are to discuss health with each one, and how often each network member interacts with each of the other network members. It is important to note that the "important things" name generator above elicits names of strong, frequently accessed, long-term contacts—ties through which normative pressures and social influence are likely to operate (Marin, 2004; Marsden, 1987; Ruan, 1998). Therefore, respondents' egocentric networks are not likely to contain many weak ties, which will reduce bridging potential.

Bridging Measures

There is no single widely used measure of bridging potential in social network research. Therefore, I consider two closely related measures and analyze how health and life-course variables relate to both of them. A person has the potential to be a bridge whenever a pair of one's network members (i.e., "alters") are not directly connected to each other. The first measure of bridging is a dichotomous indicator of whether one serves as the *sole* intermediary between any two alters—that is, none of the respondent's other network members serve as an alternative intermediary between the unconnected pair. The second measure operationalizes bridging in terms of whether the respondent has at least one network member who is not connected to any of the other network members—that is, whether ego is tied to an alter who is isolated with respect to the other alters. This measure is a more definitive indicator of access to separate social circles. Both of these measures are applicable only to respondents who report having at least two network members (the minimum number required to assess network bridging). [3] There are 2,572 older adults in the NSHAP study who have at least two network members and who provided data on all key variables.

Independent Variables

The key variables used in the analyses are summarized in Table 1. I control for several sociodemographic characteristics including gender, race, and education. Age is measured in years and divided by 10 to yield more meaningful coefficients. I use a dichotomous measure of whether the respondent is retired, as well as an indicator of bereavement (specifically, widowhood). I use a set of dummy variables to capture marital status. Two measures of health are included. Functional health is measured using questions about the respondent's difficulty with five activities of daily living (ADLs): getting in and out of bed, bathing, dressing, eating, and using the toilet. The variable is operationalized as the number of these tasks with which the respondent has no difficulty, so positive values indicate better functional health. Cognitive function is measured using the Short Portable Mental Status Questionnaire (SPMSQ), which

[2]NSHAP is unique for its assessment of a wide range of social, sexual, and health-related factors, including collection of several biomeasures. Additional information about the study can be found at http://www.norc.org/NSHAP.

[3]It can be argued that those who have one or no network members should also be included in the analysis because, technically, they do not link together any core confidantes. But then the dependent variables would be highly confounded with network size. I performed supplementary analyses with this version of the variable, however, and results do not change markedly.

includes questions like "What day of the week is it?" It is scored as a count of the number of such items the respondent answers correctly, with a maximum of 10 (Pfeiffer, 1975).[4]

When examining a structural network variable like bridging, it is important to consider several characteristics of one's networks. Some factors that will reduce bridging potential include (a) frequent contact with network members, since it increases the likelihood that separate alters will have inadvertent contact with each other; (b) closeness to network members, for the same reason; (c) having many kin in the network; and (d) the number of pairs of alters in the network who could be connected or unconnected to each other. In a symmetric egocentric network like those collected from each NSHAP respondent, there will be $\frac{k(k-1)}{2}$ possible pairs of alters, where k is network size. Correlations among the measures of bridging potential and other network characteristics are presented in Table 2.

Analysis

I present a set of nested logistic regression models for both bridging measures. Each is predicted first using sociodemographic characteristics, including age. Health and other later-life factors are entered in the second model, which makes it possible to evaluate the overall explanatory power of this entire set of factors. A postestimation adjusted Wald (F) test is conducted to determine whether the life-course measures as a whole yield a statistically significant improvement to the model. The set of four structural network controls is then entered in the third model. Health problems and other later-life experiences may shape a person's bridging potential only indirectly through network features (e.g., greater kin composition), as suggested by the social support convoy perspective, among others. Model fit is assessed using the Fleiss, Williams, and Dubro (1986) R-squared, which is simply the squared correlation between the observed and predicted values for respondents included in the analysis. All models include weights to account for differential probabilities of selection (with poststratification adjustments for nonresponse) and take into account the clustering and stratification of NSHAP's sample design.

Results

These respondents' networks include 9,776 alters in networks of varying size, and 15,193 potential pairs of alters. For the most part, bridging potential is low in these networks, as about 75% of all alter-pairs are directly connected to each other. This is not surprising, as core discussion networks tend to be dense (Cornwell et al., 2008; Marsden, 1987; McPherson, Smith-Lovin, & Brashears, 2006). Still, about half of these older adults have at least one pair of network members who are not directly connected to each other, which is necessary for bridging.

Another requirement for bridging, however, is that one is the *only* intermediary between the unconnected network members. In the networks of the 2,572 respondents included in this analysis, there are 3,850 pairs of network members who are not directly connected to each other. But there is an alternative intermediary (another network member who links a pair) in 2,093 (54.4%) of these cases. The pairs that make bridging possible are the 1,757 remaining alter-pairs between which there are no intermediaries *except* the respondent. Taking these things into consideration, only 510 (19.8%) of the respondents in this analysis serve as the sole bridge between a pair of otherwise unconnected alters in their social networks.

[4]Most people answered all SPMSQ items correctly. About 5% of the sample missed three items or more, qualifying as mildly impaired in Pfeiffer's (1975) original scoring. Using a dichotomous indicator of whether respondents scored higher than this, the SPMSQ is still significantly associated with bridging.

Table 3 presents results from the logistic regression analysis predicting whether respondents bridge any two network members who otherwise would not have been connected to each other. I am not very interested in the sociodemographic distribution of bridging (Model 1), but several findings are worth pointing out. Older women are 76% more likely than older men to serve as a bridge in their networks. It is not clear why this is the case. Though the coefficients are not shown here, those who have more formal education are also more likely to be bridges. For example, people who have some college education are 50% more likely than those with less than a high school education to serve as a bridge ($p < .05$). This association does not hold when network controls are added, however, suggesting that it may have something to do with less educated persons having more kin-centered networks or more frequent contact with network members. Race is not associated with bridging in any consistent manner.

Age is not significantly associated with bridging among older adults. On the whole, then, we can say that age itself does not pose a major obstacle to maintaining power and independence in one's social network, contrary to some theories. If there were other factors at work here suggesting intergenerational conflict or other processes which systematically constrain older adults' power and independence (e.g., younger adults monopolizing and controlling older adults' core confidantes), then we would expect to see a negative relationship here between age and bridging.

The addition of health and life-course measures does yield a significant contribution to the model, suggesting that age-related factors are indeed important (see the Wald test *F*-statistic at the bottom of column 2). There appears to be a suppression effect operating with respect to retirement. Retirees are 76% as likely as nonretirees to be bridges. This negative relationship between retirement and bridging intensifies somewhat when we control for network structural factors (in Model 3), suggesting that retirees are only 61% as likely to be bridges. This suppression may be due largely to the fact that retired people have less frequent interaction with their core confidantes which, in turn, is associated with greater bridging potential. This could be why, once interaction frequency is controlled for, the negative association between retirement and bridging potential (which is due to the fact that retirement reduces access to a domain that is largely separate from one's family life) becomes more apparent.

Marital status is strongly associated with bridging. Those who are married or live with a partner are the least likely to be bridges, perhaps reflecting the greater network density that comes with having a nuclear family and experiencing dyadic withdrawal. Interestingly, widows are more than twice as likely to be bridges as are married or partnered individuals. This may reflect several things, including a turning toward weaker ties (such as those that can be found through community activity) as a means of compensating for or adapting to bereavement. The strong positive relationship between widowhood and bridging holds even after network structural factors are controlled. (Note that the positive relationship between having a dissolved marriage or not being married at all and bridging are greatly weakened when network structure is considered, probably because married people have more kin-centered networks.)

As for health, cognitive function is positively associated with bridging potential. Each additional question correct on the battery of 10 SPMSQ items (e.g., "What day of the week is it?") is associated with a 22% increment in the likelihood of being a bridge. This association is depicted in Figure 1. Interpreted another way, those who have only mild cognitive impairment according to Pfeiffer's (1975) original scoring—that is, they answer 3 of the 10 items correctly—are only about half (53%) as likely to serve as a bridge as those who answered all items correctly.

Functional health is also positively associated with bridging potential. Those who are able to perform more activities of daily living on their own are more likely to have network members

who are unconnected to each other. Each additional ADL one can perform on one's own is associated with a 15% increment in the likelihood of serving as a bridge. This relationship is depicted in Figure 2. For example, those who can perform all five ADLs without difficulty are 67% more likely to serve as a bridge in their networks than those who experience difficulty with all five ADLs. This association persists despite controlling for network-structural controls, suggesting that it does not have much to do with how functional health relates to network composition, frequency of interaction with network members, or network size. Interpretations of these findings are discussed below.

Table 4 displays results from the analysis of whether respondents have a network member who is not connected to *any* of their other network members ("isolated alter"). The results of this analysis are similar to those shown in Table 3, in part because the two dependent variables are so highly correlated (r=.86). It is worth going over these results, however, at least as a check on the sensitivity of the findings to the choice of bridging measures.

Overall, the findings presented in Table 4 echo the findings described above. In this case, age is significant prior to controlling for network structure, although it becomes nonsignificant once network structure is taken into account. (A supplementary analysis shows that this is due largely to the fact that older adults report having fewer "close" contacts which may reflect the loss of close ties to bereavements that are not captured in the widowhood measure.) The negative association between retirement and bridging potential is apparent again in this analysis, but the suppression effect caused by retirees' less frequent contact with confidantes is more apparent now. This analysis also reiterates the positive association between bereavement and bridging. Widows are more than twice as likely as married and partnered individuals to have an "exclusive" confidante. Finally, both cognitive and functional health have similar relationships with the likelihood of having an exclusive confidante tie as they do with the likelihood of being the sole intermediary between any two network members. This similarity is illustrated nicely in Figure 1 and Figure 2.

Discussion

Social gerontologists have studied the benefits, and to a lesser extent, the determinants, of older adults' enmeshment in supportive, social capital-rich networks. But there has been very little research on older adults' experiences with serving as connections *between others* within social networks. This may be an important issue for older adults who need or want power and autonomy in their social lives. There is little evidence in these data to suggest that there is anything about age itself that reduces the prospect of bridging between network members. If anything, age is positively associated with bridging.

The findings regarding widowhood are particularly interesting in this respect. Most research on bereavement has focused on negative social-psychological outcomes, like depression. But my findings suggest that widow-hood may be one of the few forces in later life that actually increase older adults' bridging opportunities. From a purely structural standpoint, it makes sense that the death of one's spouse or partner would leave one with a less tight-knit network, thereby opening up bridging opportunities for widows (e.g., between one's in-laws and one's friends). Crucial issues for future research are to what extent this potential is actually realized and whether it is valued at all by widows. It is possible that it does more harm than good, however, and widowhood may be a rare situation in which the opening up of bridging potential is actually accompanied by a sense of lack of control and disempowerment.

These analyses do suggest, however, that common later-life experiences will likely present obstacles to most adults' bridging prospects as they grow old. Retirement reduces bridging potential for several reasons. For one, retirement provides older adults with the opportunity to

become more invested in tight-knit networks consisting of close family relations. It also results in an immediate loss of weak ties which previously provided some bridging potential by linking one up to people in a largely disconnected social domain—coworkers in the workplace. Research suggests that retirees adapt to this change, however, by increasing their commitment to the community, such as by volunteering (Cornwell et al., 2008; Mutchler, Burr, & Caro, 2003), but their interpersonal networks still become increasingly anchored in strong ties. An interesting direction for future work in this vein is to determine whether such behavior on the part of retirees reflects deliberate attempts to recover lost bridging potential, as opposed to, say, efforts to occupy leisure time.

Perhaps the most important finding of this study is that good health and bridging potential are positively associated. A clear goal for future work is to understand why it is so. It could be because occupying a bridging position and engaging in bridging behaviors (e.g., acting as a broker) is more stressful than occupying other kinds of positions and thus simply requires better health. Therefore, selection processes might play a role in sorting older adults into bridging positions. But this finding could also be indicative of one's network members' reactions to one's health problems. Severe health problems lead to the disproportionate loss of weaker contacts (usually nonkin) who are less bound by social obligations to help deal with everyday activities (see, for example, Stoller & Pugliesi, 1991). Thus, a hypothesis is that health problems have an indirect effect on bridging potential by reducing the involvement of peripheral network members who are not already embedded in care recipients' strong-tie and kin networks. This idea is consistent with the social support convoy model.

More research is needed to understand the processes through which health and life-course experiences affect bridging. A key limitation of this study is that the cross-sectional nature of the data leaves open the issue of reverse-causation. A counternarrative is that older adults who do not have bridging potential are more likely to develop health problems. Indeed, serving as a bridge may be good for cognitive function. The constant need to coordinate contact and resource flow between unconnected parties could help keep the brain active. We already know that involvement in a broad social environment is protective against cognitive decline (Bassuk, Glass, & Berkman, 1999). There is also evidence that people who have instrumentally supportive network members are more prone to ADL disability, because support reduces self-efficacy and increases dependency on others (see, for example, Mendes de Leon, Gold, Glass, Kaplan, & George, 2001). If true, this would reiterate the importance of maintaining independence in one's social network. Longitudinal analyses will be needed to sort out the causal direction of the relationship between functional health and bridging, but it is reasonable to hypothesize that it works both ways.

As research on the link between health and bridging continues to unfold, it is crucial that we maintain a subtle distinction between bridging *potential* and actual bridging behavior. This part of my discussion is prompted by concerns over how older adults responded to NSHAP's social network name generator (the "important things" question). It is possible that those who have cognitive impairments were more likely to forget to list peripheral network members—for instance, people they speak to less often—which would bias the received picture of their networks toward higher density estimates. To the extent that this occurred, there may be no reliable evidence of a relationship between cognitive function and bridging *potential*. But this should not be viewed as a mere reporting problem. Rather, it would betray cognitively impaired respondents' limited capacities to recall and relate key information about their social network contacts, like who possesses what resources. This, in turn, would be detrimental to one's ability to be an effective bridge—to effectively link one's network members to each other's resources. So although a reporting bias that is correlated with respondents' SPMSQ scores may suggest a spurious link between cognitive function and bridging potential, it still raises the issue of

cognitively impaired individuals' abilities to *realize* bridging potential and to *execute* the actions associated with linking together people who do not know each other.

From a demographic standpoint, the link between health and bridging may become an increasingly important issue over the next several decades. The population is aging, which might increase the overall prevalence of some of the types of health problems that reduce bridging potential. The implications of this shift for both global social network connectivity, and for individuals' control over the flow of resources through social networks, have not been adequately explored. By focusing on the processes and challenges of aging, social network researchers could develop a better understanding of the processes that affect global social networks. This will be an important task for network research because, from a macrosocial standpoint, network bridges provide much-needed pathways between otherwise disconnected and disparate social groups, facilitate the diffusion of innovations and other resources through society, and help create small worlds (Burt, 2004; Granovetter, 1973; Watts, 1999). Whether population aging will somehow impact (perhaps slow) these processes remains to be seen.

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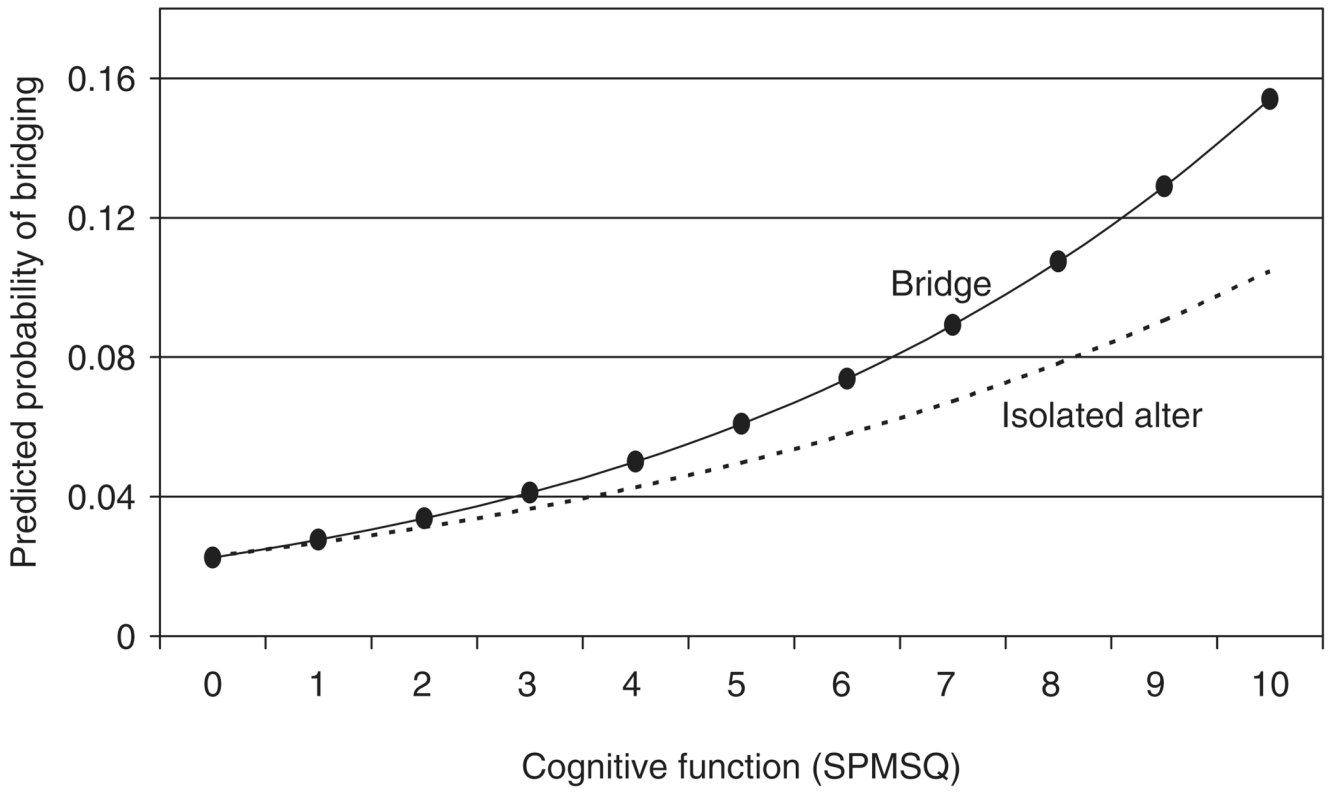

Figure 1.
The Relationship Between Older Adults' Cognitive Function and Bridging

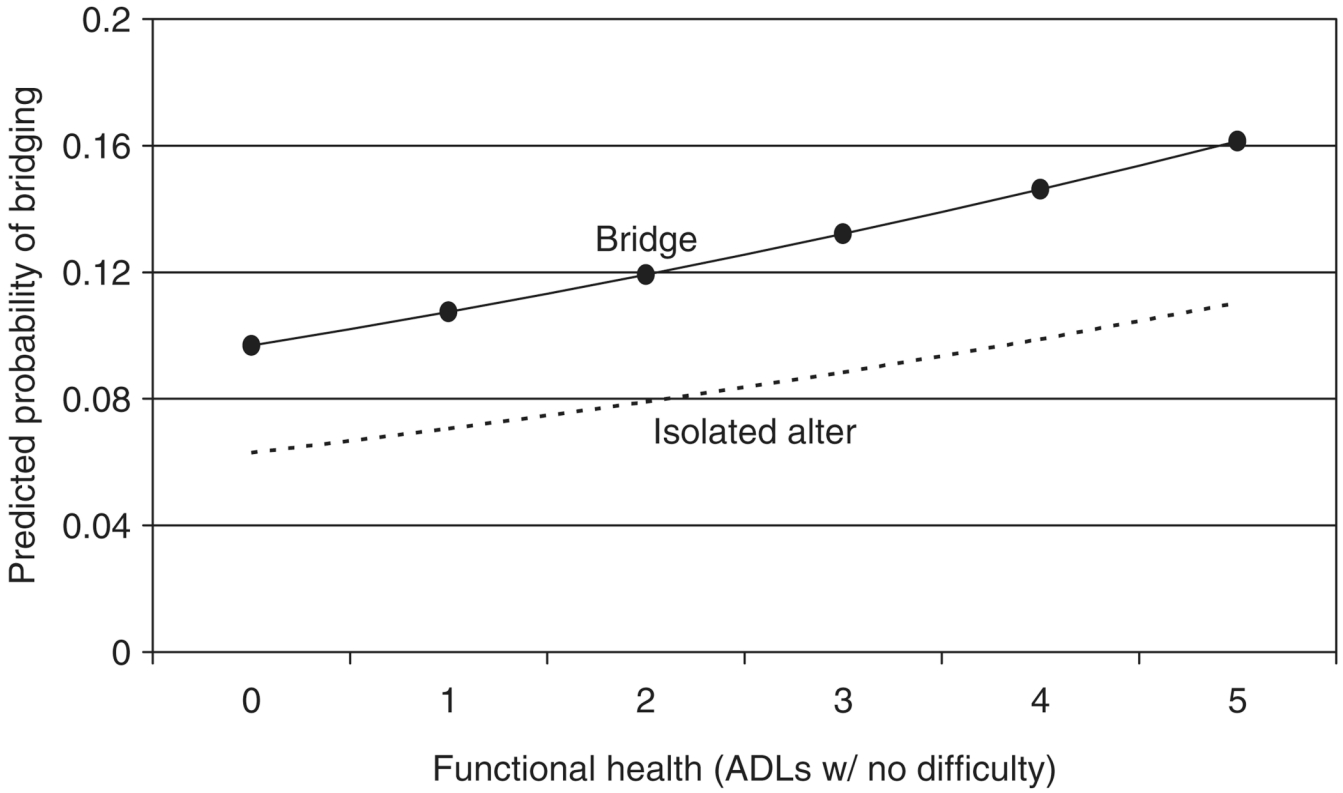

Figure 2.
The Relationship Between Older Adults' Functional Health and Bridging

Table 1

Descriptions of Key Variables (N=2,572)[a]

Variable		Weighted Mean	Standard Deviation
Bridging measures			
Bridging status	Whether R serves as the sole intermediary between alters who otherwise would not be connected to each other. {1 = *yes*, 0 = *no*}	.196	.399
Isolated alter	Whether there are any alters in the network who are connected to R and to no one else. {1 = *yes*, 0 = *no*}	.162	.375
Life-course measures			
Age	R's age in years (divided by 10). Range: 5.7 to 8.5.	6.784	.782
Retired	R is retired {1 = *yes*, 0 = *no*}	.588	.484
Marital status	(*Ref.*) R is married/lives with partner {1 = *yes*, 0 = *no*}		
	R is separated/divorced {1 = *yes*, 0 = *no*}	.112	.329
	R is widowed {1 = *yes*, 0 = *no*}	.170	.416
	R was never married {1 = *yes*, 0 = *no*}	.029	.178
Cognitive function	Number of items from the short portable mental status questionnaire (SPMSQ), such as "What day of the week is it?", that R answered correctly. Range: 0 to 10.	9.490	.996
Functional health	Average of 9 standardized ordinal items (reverse-coded) assessing R's difficulty with activities of daily living (α =.86). Range: −5.418 to .390.	4.526	1.097
Controls			
Female	R is female {1 = *yes*, 0 = *no*}	.542	.498
African American	R is African American {1 = *yes*, 0 = *no*}	.093	.366
Education	(*Ref.*) R had no high school education {1 = *yes*, 0 = *no*}		
	R graduated high school {1 = *yes*, 0 = *no*}	.279	.445
	R had some college {1 = *yes*, 0 = *no*}	.292	.448
	R graduated college {1 = *yes*, 0 = *no*}	.258	.423
Closeness to alters	Average response to: "How close do you feel is your relationship with [name]?" Responses range from 1 (*not very close*) to 4 (*extremely close*).	3.116	.508
Frequency of contact with alters	Rs were asked how often they contact each alter. Eight possible responses range from *less than once a year* to *every day*. We transform responses to estimates of number of days of contact per year with each alter (e.g., *every day* = 365). We then take the average across all alters and divide by 365. Range: 0 to 1.	.543	.234
Proportion kin	Proportion of alters who are kin by blood or marriage.	.653	.322
Number of alter pairs	Number of alter–alter pairs in R's network. Range: 0 to 10.	6.118	3.596

[a] Means incorporate person-level weights, with poststratification adjustments for nonresponse. Estimates are calculated for all cases for which data are available on all key variables.

Table 2

Correlations Among Bridging Potential and Other Network Characteristics (N=2,589)[a]

Variable	(1)	(2)	(3)	(4)	(5)
(1) Bridging status	—				
(2) Isolated alter	.862***	—			
(3) Closeness to alters	−.215***	−.194***	—		
(4) Frequency of contact	−.268***	−.247***	.311***	—	
(5) Proportion kin	−.380***	−.348***	.327***	.237***	—
(6) Number of alter pairs	.112***	.035	−.071***	−.255***	−.083***

[a]This analysis pertains to all respondents who have at least two network members.

***p <.001 (two-tailed tests).

Table 3

Odds Ratios From Logistic Regression Analyses Predicting Older Adults' Bridging (N =2,572)[a]

Predictors	Model 1	Model 2	Model 3
Female	1.765***	1.498**	1.731**
	(.212)	(.190)	(.284)
African American	1.057	.886	1.234
	(.154)	(.136)	(.193)
Age (divided by 10)	1.089	1.164	1.103
	(.080)	(.107)	(.118)
Retired		.761*	.609**
		(.092)	(.087)
Marital status (ref = married/partnered)			
Separated/divorced		4.597***	3.158***
		(.756)	(.590)
Widowed		2.204***	2.191***
		(.333)	(.387)
Never married		4.658***	2.389***
		(1.390)	(.839)
Cognitive function		1.218**	1.229**
		(.079)	(.090)
Functional health		1.149*	1.124*
		(.064)	(.065)
Closeness to network members			.614**
			(.092)
Frequency of interaction with network members			.080***
			(.028)
Proportion kin in network			.088***
			(.018)
Number of alter pairs			1.069**
			(.025)
Model improvement when health/		19.60***	10.11***
life-course variables considered, Wald test		(6, 44)	(6, 44)
Fleiss, Williams, and Dubro R^2	.019	.080	.244

[a] All models include controls for highest level of education achieved, operationalized using three dummies.

* $p < .05$, two-tailed.

** $p < .01$, two-tailed.

*** $p < .001$, two-tailed.

Table 4

Odds Ratios From Logistic Regression Analyses Predicting the Presence of Any Isolated Alters in Older Adults' Egocentric Social Networks (N = 2,572)[a]

Predictors	Model 1	Model 2	Model 3
Female	1.762***	1.488*	1.775**
	(.247)	(.220)	(.306)
African American	1.178	.980	1.339
	(.183)	(.156)	(.207)
Age (divided by 10)	1.154	1.202*	1.138
	(.089)	(.105)	(.110)
Retired		.786	.674*
		(.108)	(.105)
Marital status (ref = married/partnered)			
Separated/divorced		4.228***	2.633***
		(.733)	(.500)
Widowed		2.314***	2.134***
		(.385)	(.389)
Never married		5.943***	2.983**
		(1.670)	(.981)
Cognitive function		1.167*	1.174*
		(.077)	(.090)
Functional health		1.146*	1.130*
		(.060)	(.062)
Closeness to network members			.671*
			(.100)
Frequency of interaction with network members			.081***
			(.029)
Proportion kin in network			.109***
			(.024)
Number of alter pairs			.997
			(.021)
Model improvement when health/life-course		19.60***	10.11***
variables considered, Wald test		(6, 44)	(6, 44)
Fleiss, Williams, and Dubro R^2	.019	.080	.244

[a] All models include controls for highest level of education achieved, operationalized using three dummies.

* $p < .05$, two-tailed.

** $p < .01$, two-tailed.

*** $p < .001$, two-tailed.