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Independence Through Social Networks: Bridging Potential Among Older Women and Men

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Objectives. Most studies of older adults' social networks focus on their access to dense networks that yield access to social support. This paper documents gender differences in the extent to which older adults maintain a related, but distinct, form of social capital—bridging potential, which involves serving as a tie between two unconnected parties and thus boosts independence and control of everyday social life.

Methods. I use egocentric social network data from a national sample of 3,005 older adults—collected in 2005–2006 by the National Social Life, Health, and Aging Project—to compare older men's and women's network bridging potential using multivariate regression analysis.

Results. Older women are more likely than older men to have bridging potential in their networks—between both kin and non-kin contacts. These gender differences increase with age. Older women are also more likely to have network members who are not connected to or monopolized by their spouse or partner. Some, but not all, of these gender differences are due to the fact that older women have larger social networks and maintain more ties to people outside of the household.

Discussion. These findings raise important questions about the relational advantages older women have over older men, including greater autonomy, and contradict stereotypes about women having more closely knit, kin-centered networks than men.

Key Words: Aging—Gender—Social networks—Social capital—Marriage.

SOCIAL gerontologists often emphasize the importance of older adults' embeddedness in dense, kin-centered social networks. Such networks—in which individuals know and interact with each other frequently—make it easier to pool resources and coordinate caregiving duties when necessary (Ashida & Heaney, 2008; Haines, Hurlbert, & Beggs, 1996; Kelley-Moore, Schumacher, Kahana, & Kahana, 2006). Those who have network members who know each other have more access to social support, companionship, and emotional aid (Haines & Hurlbert, 1992). And embeddedness in a dense network yields "social capital" which increases network members' capacities to monitor and share information about a person (Coleman, 1988).

A key motivation behind this paper is the idea that these aspects of dense social networks may not always benefit or appeal to older adults. Although dense networks are often beneficial, they can present obstacles to privacy and autonomy. They facilitate higher levels of monitoring by one's network members, more stringent enforcement of norms, and greater pressure toward group conformity (Coleman, 1988; Marsden, 1987). That is, dense networks can be oppressive for the same reasons that they are effective at delivering support (Fischer, 1982). This side of social capital may be more evident to older adults, whose networks tend to be relatively dense (Adams, 1987; Cornwell, Laumann, & Schumm, 2008; Fiori, Antonucci, & Cortina, 2006; Fiori, Smith, & Antonucci, 2007).

As such, it might be important for older adults to maintain some *bridging* potential in their networks—that is, ties to people who are otherwise poorly connected to each other. For example, if Brenda talks to both Anne and Carroll frequently, but Anne does not know Carroll, then Brenda is a bridge between them. Chances are that Anne and Carroll are in separate networks that do not overlap much. This gives rise to a different class of network structural benefits. For one, it gives Brenda access to more diverse pools of resources that may be suited to different purposes and activated under different circumstances (Granovetter, 1973; Lin, 2001; Wellman & Wortley, 1990). Furthermore, Anne and Carroll may constitute *alternatives* to each other, which bolsters Brenda's exchange power and insulates her from dependence on either one of the pair (Emerson, 1962). In some circumstances, serving as a bridge between others can also yield brokerage potential or the ability to transfer resources between two parties (Burt, 1992; Gould & Fernandez, 1989).

This is an important issue in later life, as many older adults place a high value on independence—especially when faced with the prospect of being dependent on others for support (Cohler, 1983; Silverstein, Chen, & Heller, 1996). Evidence that older adults value independence is available in research which demonstrates that being dependent on or receiving excessive support often leads to emotional distress, feelings of vulnerability, decreased self

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esteem, and a feeling of being coerced (Coyne, Wortman, & Lehman, 1988; Lee, Netzer, & Coward, 1995; Martire, Stephens, Druley, & Wojno, 2002; Vinokur & Vinokur, 1990). This represents a key tension in many older adults' social lives: Older adults cherish and benefit from their connections to tight-knit groups (e.g., their families), but they also value autonomy. The work that has been done on this issue finds that network density increases (and bridging potential decreases) with age and that this is partly due to later life-course experiences (Adams, 1987; Cornwell, 2009; Cornwell et al., 2008). However, people can have bridging potential and still be embedded in a dense network (Burt, 2005). Unfortunately, we know relatively little about the factors that affect older adults' bridging opportunities.

Gendered Social Resources

The concern over bridging potential in social networks maps onto larger concerns regarding gendered access to independence and power. Some scholars point to gender differences in network composition to explain men's more rapid advancement in the workplace, labor market outcomes, and entrepreneurial success (e.g., Renzulli, Aldrich, & Moody, 2000; van Emmerik, 2006). More pertinent to older adults, bridging in social networks also has implications for gendered independence. A classic hypothesis holds that tight-knit, kin-centered networks serve to maintain more rigid, gender-segregated conjugal roles in which men are dominant within the household (Bott, 1957). This is partly because dense networks facilitate monitoring and thereby help to enforce strict adherence to local social norms (see also Burt, 1992; Hill, 1988).

The dominant perception is that women have less bridging potential in their networks than men. Although women's networks are usually larger than men's, some work shows that women maintain more strong, kin-based connections that are less conducive to bridging than men's weaker instrumental ties (see McLaughlin, Vagenas, Pachana, Begum, & Dobson, 2010; McPherson, Smith-Lovin, & Brashears, 2006; Moore, 1990; Ridgeway & Smith-Lovin, 1999; van Emmerik, 2006). But it is unclear whether the gender differences in network structure that are evident among young and middle-aged adults persist in later life. Research does find that older women have larger networks than older men—which would increase women's bridging potential—but the evidence regarding gender differences in network composition is mixed (Ajrouch, Blandon, & Antonucci, 2005; Antonucci & Akiyama, 1987; McLaughlin et al., 2010; Rasulo, Christensen, & Tomassini, 2005; Shye, Mullooly, Freeborn, & Pope, 1995).

Beyond this, men and women have different life-course experiences, which could have major implications for gender differences in bridging potential in later life. For one, older men are more likely to experience retirement, so they are more likely to experience a sudden drop in their access to weak and non-kin ties (e.g., Mor-Barak, Scharlach, Birba, & Sokolov, 1992). Beyond this, bridging is dependent on functional and cognitive health and is often compromised when one's network members increase communication and coordination with each other to provide social support for health problems (Cornwell, 2009; McLaughlin et al., 2010). Close friends and family members in particular often "tighten" an infirm person's network by rallying around and coordinating caregiving duties (Stoller & Pugliesi, 1991). And because older men are more likely to (be able to) rely on their partners for caregiver support than are older women (Antonucci & Akiyama, 1987; Schwarzer & Gutiérrez-Doña, 2005), older men may face more constraints on bridging potential than older women.

Finally, socioemotional selectivity theory holds that people become increasingly oriented to strong, emotionally rewarding relationships as they age (Charles & Carstensen, 2010), which leads to the loss of weaker (especially non-kin) contacts. This increased selectivity appears to be more pronounced among men than women (Shaw, Krause, Liang, & Bennett, 2007). Gendered life-course perspectives explain that men adopt a more emotional approach to relationships as they age, focusing less on instrumental ties that facilitate individual accomplishments and more on ties that provide emotional fulfillment (Adams & Ueno, 2006). The realities and challenges of later life—including retirement and health decline—make traditionally masculine priorities on power and autonomy less appealing and more difficult to sustain. Furthermore, old age elicits more nurturance from men, which yields closer relationships with family (Mann, 2007; Ribeiro, Paúl, & Nogueira, 2007). These ideas yield two related hypotheses:

> *Hypothesis 1a* Older women have more potential to bridge between contacts—including non-kin—within their social networks than older men.
> *Hypothesis 1b* Gender differences in bridging potential increase with age.

Independence from Intimate Partners

A key condition on many individuals' abilities to exercise influence and maintain independence in their everyday lives is their involvement in an intimate relationship. Partners in long-term intimate relationships usually share joint contacts, which can help them forge stronger, more committed partnerships (e.g., see Kalmijn & Bernasco, 2001; Stein, Bush, Ross, & Ward, 1992). Some scholars have shown that because of their extensive access to each other's network contacts, partners inadvertently constrain each other's bridging potential (Bott, 1957; Burt, 1992). And as partners share in more of each other's social experiences, they become more integrated in each other's networks as time goes on (Kalmijn, 2003; Milardo, 1982). Some of this increasing overlap is attributable to later life experiences like retirement and health problems that require partners to play a greater role in each other's lives. A recent study

(Cornwell & Laumann, 2011) suggested that this can be so bothersome to some older men that it reduces their satisfaction with their partners and can lead to sexual problems in their relationships. Unfortunately, little is known about the extent to which older adults' partners "constrain" their bridging potential or whether such constraint is experienced differently by men and women. But the existing work on joint partner networks suggests the following:

> *Hypothesis 2* Having a spouse or partner reduces both men's and women's bridging potential in later life.

Separation, divorce, and widowhood imply the loss of the one social contact who is the most highly embedded within one's network and poses the greatest (inadvertent) constraint on bridging potential (Burt, 1992; Kalmijn, 2003). It is important to acknowledge that the loss of one's spouse increases loneliness and sense of isolation in older adults (e.g., Paúl & Ribeiro, 2009), but it is also crucial to recognize that such losses are an important part of the process through which many older adults' networks are transformed. Because women are more likely than men to become widowed (Waite & Das, 2010), this will increase women's bridging potential relative to men, not only because they are automatically left with fewer strong ties in their networks but also because widowhood tends to increase community involvement and thus increases access to weak ties (see Cornwell et al., 2008; Donnelly & Hinterlong, 2010; Li, 2007; Utz, Carr, Nesse, & Wortman, 2002). This could also exacerbate gender differences in bridging potential in later life.

In addition, there are several reasons to expect that older women are more likely than older men to maintain connections to people to whom their spouses are not well connected. Social network research shows that, in general, women are more likely than men to have such people in their networks (Kalmijn, 2003). Kearns & Leonard (2004) offer one explanation for this, arguing that women's expectations of being embedded in their spouses' networks increase over time, whereas men are less likely to seek involvement in their spouses' external network ties. This effectively preserves women's independent network contacts. Furthermore, this gender difference in partner-independent ties may increase with age. As discussed earlier, older men's weaker contacts are more likely than older women's to be lost to retirement or abandoned due to increasing preferences for emotionally fulfilling relationships (Shaw et al., 2007). For these reasons, I expect that:

> *Hypothesis 3* Older women are more likely to maintain ties that are independent of their spouse/partner than older men.

To recap, positions within social networks that yield bridging potential can provide older adults with opportunities to exercise informal forms of power and independence. But the experiences of later life may reduce some individuals' bridging potential. Older men are especially likely to experience life-course transitions that reduce bridging potential, especially retirement, health problems, and heightened socioemotional selectivity. Given the potential relevance of this issue to older adults, I examine the structure of older adults' social networks using recent nationally representative data.

Data and Methods

I conduct my analysis using network data collected by the National Social Life, Health, and Aging Project (NSHAP) in 2005–2006. This study includes a nationally representative sample of 3,005 community-dwelling adults between the ages of 57–85. Interviews were conducted in respondents' homes by the National Opinion Research Center. NSHAP used a multistage area probability design that oversampled by race and ethnicity, age, and gender. The final response rate is 75.5%.

Social Network Data

NSHAP collected information about older adults' confidant networks. To develop the network data, NSHAP interviewers began by asking 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, who were recorded in Roster A. (In network research, the respondent is often referred to as "ego," so self-reported network data such as this is often referred to as "egocentric" network data.) Respondents were asked to describe the nature of their relationship to each network member (e.g., friend). If, after these five network members (referred to as "alters") were enumerated respondents had not yet named a partner, they were asked if they had one. If so, the partner was recorded in a Roster B. (I include a control in all models for whether the respondent failed to list their partner in the initial confidant roster.) Respondents were also asked if there was any other person to whom they are especially close. If so, this person was added in Roster C. Respondents reported both how often they interact with each of their network members and how often each network member (including the spouse/partner) interacts with each of the other network members. This information is collected from all respondents, regardless of the respondent's age or other characteristics.

Network Bridging Potential

I use the data provided by respondents regarding their ties to network members as well as their reports of how these network members are connected to each other to measure respondents' bridging potential within their networks.

Bridging potential refers to the extent to which an individual is tied to people who are not directly (or who are only poorly) connected to each other (Burt, 1992). The "important things" question above elicits names of strong, frequently accessed, long-term contacts (Marin, 2004; Marsden, 1987)—ties through which normative pressures and social influence are likely to operate and which are thought to be particularly important to older adults. Therefore, overall bridging potential may be underestimated by these data.

There is no universally accepted measure of bridging potential. In his foundational work, Burt (1992) proposed a technical measure of bridging that he called "effective size," which is the number of social contacts a person has, adjusted downward to the extent that those network members are also tied to each other. Borgatti (1997) showed that this measure is equivalent to network density, scaled by a factor of $k - 1$, where k is the number of alters named by the respondent. I am mainly interested in individuals' capacities to connect people. Therefore, I simplify matters by measuring bridging potential as the number of pairs of alters in a respondent's network who are not directly connected to each other. My first measure of bridging therefore captures a respondent's overall opportunity to serve as an intermediary between unconnected parties. This measure is distinct from Burt's (1992) measure of effective size because it does not take into account the extent to which the respondent is the only network member who has access to unconnected pairs of alters within the network. However, it does correlate with Burt's measure at $r = .87$, which yields similar results when used as the dependent variable in the multivariate regression analysis (see Table A2). Hypothesis 1a suggests that older women have more overall bridging potential than older men and asserts that this holds for non-kin ties as well. Therefore, I also calculate a parallel count of the number of unconnected alter-pairs that involve at least one non-kin contact.

Partner-related bridging.—I employ two additional measures that are intended to capture respondents' autonomy from the spouse or partner. One can maintain independence from one's partner by having contacts who are not connected to that partner. One dichotomous measure of this is whether a respondent has at least one confidant with whom one's partner has little contact (only once or twice a year, or less often), which I refer to as a *partner-independent* tie. Perhaps the greatest threats to autonomy are instances in which one's partner has greater contact with one's confidants than oneself has. A final measure of bridging potential, then, is a dichotomous indicator of whether the respondent has more contact with all of his or her other confidants than his or her partner does—that is, whether the respondent's network is free of *partner betweenness* (Cornwell & Laumann, 2011). This allows respondents to retain control over resources to which their partners do not have as much access. Although these last two indicators of bridging potential are significantly associated with each other ($\chi^2 = 28.51$, $P < .001$), they are not highly correlated ($r = .12$), suggesting that they tap different but related dimensions of bridging. These and other key variables in the analysis are described in Table A1.

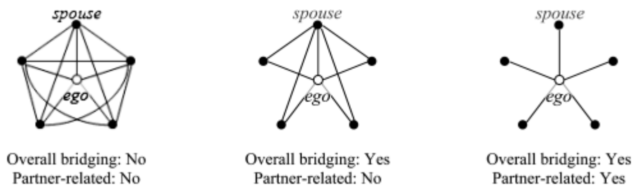

Figure 1. Three hypothetical egocentric networks that have different implications for ego's overall and partner-related bridging potential.
Note. The empty circle in the middle of each network represents the focal individual ("ego"), black circles represent network members ("alters"), and lines are drawn where a relationship exists.

To clarify the distinction between overall and partner-related bridging potential, Figure 1 illustrates three hypothetical networks as derived from an individual's ("ego's") reports of whom she/he is connected to and how those people ("alters") are connected to each other. Each network represents a case where ego has a spouse and four other network members. In the left panel, all of ego's network members are connected to each other. This network does not afford ego any bridging potential. There are 10 possible connections among the alters, and they are all realized (i.e., 0 out of 10 alter-pairs are unconnected). Ego's spouse is connected to each of the four other alters as well, so ego has no partner-related bridging potential. In the center network diagram, ego has considerable overall bridging potential, as 6 of the 10 possible alter-pairs are unconnected. On the other hand, ego's spouse is equally connected to the other four alters, so ego has no partner-related bridging potential in that case. In the right-most diagram, ego's bridging potential is maximized. None of ego's network members are connected to each other, including ego's spouse, thus yielding overall and partner-related bridging potential.

Analysis

I begin by examining bivariate differences in bridging by gender. I then use multivariate regression analysis to predict each of the bridging measures using a variety of covariates. The first set of models for each outcome includes gender as well as race and education as sociodemographic controls. I am mainly interested in factors that help explain any gender differences in bridging potential. One possibility is that gender differences emerge as a result of men's and women's different life-course experiences. The second model for each outcome thus includes: (a) whether the respondent is separated/divorced with no current partner, whether she/he is widowed with no partner, and whether she/he has never been married—with "has a current spouse/partner" as the reference category. (When predicting the measures of partner-specific bridging potential, I instead use a single indicator of whether the respondent is married to the partner.); (b) employment status (i.e., retired); and (c) functional health and cognitive function. Functional health is measured using an index of nine questions about respondents' difficulty with activities of daily living, such as: "How much difficulty do you have bathing or showering?" I reverse-code and standardize these responses, then average them together to create a functional health index ($\alpha = .86$). Positive values indicate better function. Cognitive function is measured using the Short Portable Mental Status Questionnaire, which includes ten questions like "What day of the week is it?" It is scored as the number of items answered correctly (Pfeiffer, 1975).

The third model for each outcome rotates out the life-course measures and enters measures of network structure. Factors that may affect bridging potential include: (a) closeness to network members because strong ties with alters increase the likelihood that alters will be acquainted (Granovetter, 1973); (b) proportion of alters who are kin; (c) proportion of alters who live in R's household; and (d) network size, which is included as a series of dummy variables that represent different-sized networks (to allow for nonlinear associations between network size and bridging, which are evident in the data). This step is useful in determining whether any gender differences in bridging result from the types of networks men and women have (Moore, 1990). A final model for each outcome includes both the life-course and network structure variables together.

The two measures of partner-related bridging potential are dichotomous indicators, so logistic regression is appropriate in those cases (Cox & Snell, 1989). The measure of overall bridging potential—the count of the number of pairs of unconnected alter-pairs—and the measure of bridging involving non-kin contacts are predicted using negative binomial regression. Negative binomial models are like Poisson models in that they predict counts, but negative binomial models also include a parameter, σ^2, that accounts for overdispersion (high variation) in the dependent variable (McCullagh & Nelder, 1989). I also take into account the fact that some respondents have more bridging potential merely by virtue of the fact that they have larger networks. In networks like those collected by NSHAP, there are $\frac{k(k-1)}{2}$ possible pairs of alters, where k is the number of network members. When predicting the counts of unconnected alter-pairs, I include a count of the total number of *possible* unconnected alter-pairs as an "exposure" variable. This is an additional parameter by which the dependent variable is divided, thus expressing it not as a count but as a rate or proportion. This means that the negative binomial model expresses the coefficient for a given predictor in terms of its association, not with the number but with the prevalence of unconnected pairs of alters within one's network.

All models include person-level weights to account for differential probabilities of selection, as well as poststratification adjustments for nonresponse by age and urbanicity. Analyses are conducted using Stata's survey ("svy") commands that, in addition to weighting, incorporate the clusters and strata of NSHAP's sample design and employ Taylor linearized variance estimation.

Selection Issues

The regression analyses pertain only to respondents who have at least two network members. Analysis of the partner-related bridging measures is further restricted to those who have a spouse/partner, yielding a sample of 1,889 for these analyses. To adjust for selection that could result from these restrictions, I first create a set of dichotomous measures that indicate whether a given respondent is present in a given model (e.g., the model predicting the presence of a partner-independent tie). Next, I predict this indicator using a logistic regression model that includes gender, age, race, education, marital status (except for models pertaining only to those with a partner), retirement, whether the respondent has offspring, household size, and health as predictors. I then take the inverse of the predicted probability that is derived from this model (i.e., the probability that the respondent did *not* make it into the presented models), multiply it by the supplied NSHAP survey weight for that respondent, and use the product as the person-weight in the subsequent models predicting that particular bridging measure (see Cornwell & Laumann, 2011; Morgan & Todd, 2008). This procedure effectively gives greater weight to cases that were less likely to be included in the models, thus attenuating any potential selection effects that were introduced as a result of missing data or other sample restrictions.

Results

I begin by analyzing older adults' overall bridging potential. The first measure of bridging potential is the total number of pairs of network members who are not connected to each other. On average, respondents report that 23.1% of their network members are not connected to each other, yielding an average of 2.35 unconnected pairs of network members per respondent.

Bivariate associations between gender and measures of bridging potential (Table 1) provide preliminary evidence that older men's and women's networks are structurally different in ways that yield greater bridging potential for women. For one, women's networks are larger than men's. Older women's networks are no more kin-centered than older men's networks are. Women also have significantly fewer coresident network members. These particular trends are favorable to women's bridging prospects. Indeed, the number of unconnected pairs of network members is greater in women's networks (2.70 unconnected pairs) than in men's (1.96 unconnected pairs; $F = 44.15$, $p < .001$).

Table 2 presents results from negative binomial regression analyses predicting overall bridging potential. Based on the initial model in Table 2, older women have about

Table 1. Differences Between Older Men's and Older Women's Social Networks[a]

Network characteristic	Men	Women	Adjusted Wald test of gender difference (*F*)[b]	*N*
Network bridging				
Overall bridging potential[c]	1.958	2.703	44.15***	2,785
Non-kin bridging potential[c]	1.770	2.454	40.33***	2,785
Partner-independent tie[d]	0.389	0.448	5.39*	1,897
No partner betweenness[d]	0.677	0.831	45.72***	1,897
Structure controls				
Overall network size	3.912	4.446	78.82***	3,004
Number of non-partner confidants[d]	3.226	3.819	69.20***	1,897
Closeness to network members	3.095	3.175	14.83***	2,980
Proportion coresident	0.291	0.182	149.56***	2,985
Proportion kin	0.700	0.676	2.20	2,985

[a] Includes all cases for which data are available for a given measure. Estimates are weighted to adjust for probability of selection and differential nonresponse by age and urbanicity.

[b] This is a survey-adjusted postestimation test that the two estimates are equal ($df = 1, 50$).

[c] Applies only to respondents who have at least two network members.

[d] Applies only to respondents who have a spouse/partner and who have at least one other network member.

$^*p < .05$; $^{**}p < .01$; $^{***}p < .001$ (two-tailed tests).

51.5% more unconnected pairs of network members than men, providing initial support for hypothesis 1a. This estimate is marginally smaller in the second model ($F = 3.60$, $p < .07$), providing some evidence that a portion of older women's bridging potential derives from their life-course experiences. For example, the older women in this sample are much less likely to be married than the older men (56.0% vs. 78.3%, respectively), lifting what is usually a major constraint on married individuals' bridging potential.

A greater reduction in the gender coefficient ($F = 31.08$, $p < .001$) occurs when network structural measures are considered (model 3). People who are closer to their network members, whose networks are comprised of more kin and/or coresidents, and whose networks are larger tend to have more bridging potential. The reduction in the gender coefficient between models 1 and 3 is most closely tied to the influence of network size and the presence of coresident alters. If I only include network size in model 3, the incidence rate ratio associated with gender is cut in half, from 1.44 to 1.22 ($F = 39.59$, $p < .001$). This is because women have larger networks than men, which increases bridging potential automatically. Likewise, if I only include the presence of coresident network members in model 3, the incidence rate ratio associated with gender is cut from 1.44 to 1.17 ($F = 74.50$, $p < .001$). This is because women draw fewer of their network members from the household, which inevitably means that they have fewer network members who see each other every day. In the end, when all variables are considered together (model 4), we find that older women have 15.9% more bridging opportunities than older men.

Table 2. Incidence Rate Ratios From Negative Binomial Regression Analyses Predicting the Number of Unconnected Dyads in Older Adults' Social Networks (N = 2,772)[a]

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Female	1.515*** (.072)	1.439*** (.072)	1.152** (.047)	1.159*** (.044)	0.588 (.179)
Age (divided by 10)		1.059 (.0490)		1.023 (.032)	0.968 (.039)
Separated/divorced		1.742*** (.183)		1.072 (.099)	1.073 (.100)
Widowed		1.165 (.113)		0.932 (.078)	0.916 (.078)
Never married		1.414* (.218)		0.941 (.104)	0.045 (.105)
Retired		0.992 (.073)		0.948 (.048)	0.950 (.048)
Functional health		1.150 (.095)		1.044 (.052)	1.049 (.052)
Cognitive function		1.142*** (.034)		1.064** (.023)	1.065** (.023)
Closeness to alters			0.771*** (.039)	0.766*** (.040)	0.766*** (.028)
Proportion kin			0.207*** (.023)	0.211*** (.024)	0.211*** (.024)
Proportion coresident			0.225*** (.037)	0.217*** (.041)	0.217*** (.041)
Two alters (ref: ≥6)			0.029*** (.004)	0.030*** (.005)	0.038*** (.009)
Three alters			0.136*** (.008)	0.138*** (.009)	0.138*** (.009)
Four alters			0.344*** (.027)	0.346*** (.026)	0.345*** (.025)
Five alters			0.619*** (.038)	0.621*** (.039)	0.619*** (.038)
Female × Age					1.106* (.048)
F(*df*)	27.78*** (7, 44)	21.48*** (14, 37)	176.96*** (14, 37)	167.02*** (21, 30)	181.37*** (22, 29)

[a] Estimates are weighted to adjust for probability of selection, inclusion in the analysis, and differential nonresponse by age and urbanicity. All models are survey adjusted. Models also control for race/ethnicity, education, and whether the respondent forgot to include the partner in the initial list of confidants.

$^*p < .05$; $^{**}p < .01$; $^{***}p < .001$ (two-tailed tests).

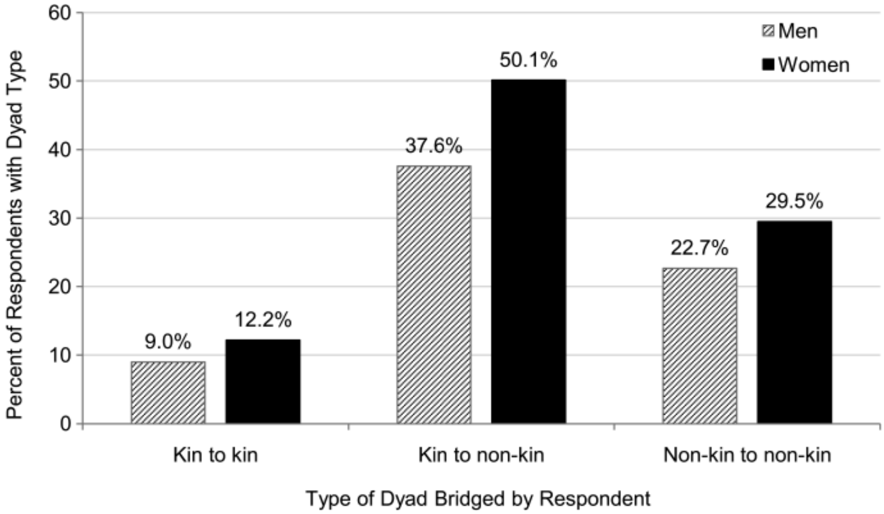

Figure 2. Percent of respondents who serve as bridges between different kinds of confidants, by gender.

Not only do older women have more bridging potential but also that potential extends beyond their family ties. As shown in Figure 2, although 50.1% of older women serve as a bridge between kin and non-kin ties, only 37.6% of men do ($F = 41.39$, $p < .001$). Women are also 30% more likely than older men to serve as a link between two non-kin confidants (29.5% vs. 22.7%; $F = 13.59$, $p < .001$). The first model of Table 3 shows that older women have 53.8% more opportunities than older men to serve as a bridge between pairs of alters in which at least one is a non-kin contact (providing further support for hypothesis 1a). Once all the life-course and network structural determinants of bridging are included (model 4), we see that older women have 18.6% more opportunities than men to serve as a bridge that involves non-kin contacts. As above, when I include network size and the prevalence of coresident network members separately in model 3, I find that older women's bridging potential advantage derives especially from their larger networks ($F = 40.52$, $p < .001$) and from their greater propensity to be connected to non-coresidents ($F = 85.06$, $p < .001$).

It is worth noting before I move onto tests of the other hypotheses that older women's greater bridging potential does not come to them at the cost of their having less access to other forms of social capital. For example, older women are just as likely as older men to have network members

Table 3. Incidence Rate Ratios From Negative Binomial Regression Analyses Predicting the Number of Unconnected Dyads Involving Non-Kin Alters in Older Adults' Social Networks (N = 2,772)[a]

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Female	1.538*** (.084)	1.470*** (.082)	1.167** (.051)	1.186*** (.048)	0.613 (.181)
Age (divided by 10)		1.057 (.053)		1.015 (.035)	0.962 (.041)
Separated/divorced		1.783*** (.207)		0.960 (.095)	0.961 (.096)
Widowed		1.103 (.107)		0.848 (.072)	0.833*** (.071)
Never married		1.501* (.253)		0.834 (.107)	0.837 (.108)
Retired		0.942 (.071)		0.911 (.046)	0.913 (.046)
Functional health		1.173 (.103)		1.039 (.055)	1.045 (.055)
Cognitive function		1.142*** (.037)		1.067* (.026)	1.068 (.026)
Closeness to alters			0.811*** (.040)	0.800*** (.040)	0.800*** (.040)
Proportion coresident			0.286*** (.053)	0.214*** (.045)	0.215*** (.046)
Proportion kin			0.102*** (.012)	0.104*** (.012)	0.104*** (.012)
Two alters (ref: ≥ 6)			0.027*** (.005)	0.029*** (.005)	0.029*** (.005)
Three alters			0.129*** (.010)	0.136*** (.011)	0.135*** (.011)
Four alters			0.344*** (.028)	0.352*** (.027)	0.351*** (.027)
Five alters			0.630*** (.039)	0.638*** (.041)	0.636*** (.041)
Female × Age					1.103* (.048)
F(*df*)	29.73*** (7, 44)	22.5*** (14, 37)	174.97*** (14, 37)	176.52*** (21, 30)	203.12*** (22, 29)

[a] Estimates are weighted to adjust for probability of selection, inclusion in the analysis, and differential nonresponse by age and urbanicity. All models are survey adjusted. Models also control for race/ethnicity, education, and whether the respondent forgot to include the partner in the initial list of confidants.

*$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed tests).

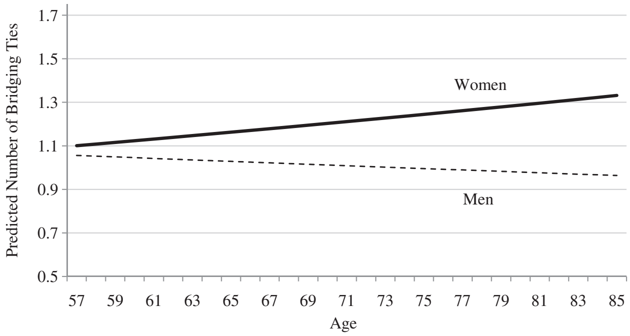

Figure 3. Predicted number of bridging ties (open triads) in respondents' confidant networks, by gender.
Note. Predicted values are derived from the final model presented in Table 2. Covariates are held at their means.

who have *strong* ties to each other. About 77.0% of older men and 79.0% of older women have at least one pair of network members who interact with each other on at least a weekly basis (F = 1.77, p = .19). Broken down by dyad type, older women are actually more likely than older men to have at least two family members in their networks who talk to each other at least once a week (66.8% vs. 61.2%, respectively; F = 6.57, p = .014). In this sense, older women have the best of both worlds—bridging potential as well as access to robust social capital.

Gender Interaction

I also explore whether age conditions the association between gender and bridging potential. Hypothesis 1b states that gender differences in bridging potential increase with age. The final model of Table 2 includes an interaction between age and gender. The interaction is significant and positive. Interactions can be difficult to interpret, so I display the nature of this conditional relationship in Figure 3. As shown in the figure, the gender difference in overall bridging potential is greatest among the oldest adults in the sample, with a slight upward trend for women by age and a slight downward trend for men. For example, the predicted number of bridging ties (disconnected pairs of alters) for a 60-year-old woman is 1.12, compared to 1.05 for a 60-year-old man. The predicted number of bridging ties for a 80-year-old woman is 1.29, compared to .98 among a 80-year-old man. There is also an interaction between gender and age in the analysis of non-kin bridging potential (see the final model of Table 3), suggesting that gender differences in the potential to serve as a bridge between a non-kin contact and any other type of contact are greater in later life. These results support hypothesis 1b.

Bridging and Intimate Partners

I now consider the difference in bridging potential between those who have a spouse/partner and those who do not. First, the data show that an average of 20.6% of partnered respondents' alter-pairs are unconnected, compared to 30.5% of non-partnered respondents' alter-pairs (F = 35.01, p < .001). In addition, partners are more likely than non-partners to be connected to the rest of one's network. For example, the spouses/partners of partnered respondents know an average of 92.5% of the other network members in those respondents' networks. The non-partner contacts of respondents who have a spouse/partner know an average of 76.8% of those respondents' other network members (unadjusted paired-samples t test: t = 29.88, p < .001). Furthermore, among partnered older adults, only 9.9% have a network member who is not connected to anyone in the confidant network aside from the respondent, compared with 30.5% among non-partnered older adults (F = 79.10, p < .001). This provides preliminary evidence that the presence of a partner constrains bridging potential.

Model 2 in Table 2 confirms that older adults who have a spouse or partner have less bridging potential than others (hypothesis 2). In particular, those who are separated/divorced or who never married and do not have a current partner have significantly more bridging potential in their networks than those who are married or have a coresident partner. Model 2 in Table 3 shows that the same is true with respect to bridging that involves non-kin contacts (also see Table A2). But the association between partner status and bridging potential is tied up with other aspects of network structure. The fourth model in Table 2, for example, shows that having a spouse or partner is not significantly associated with bridging potential once network structure is taken into account. This suggests that individuals who are partnered have less bridging potential in part because they have different kinds of networks (e.g., more kin-centered) than individuals who are not partnered.

Partner-Independent Ties

Finally, I turn to the analysis of partner-related bridging potential. Table 4 presents results from multivariate logistic regression analyses predicting whether partnered respondents have at least one network member to whom the partner is not connected. About 42% of these respondents report having at least one such confidant. From model 1, older women are 21.7% more likely than older men to maintain such a contact, but this is not statistically significant. However, it is necessary to control for health and life-course experiences because they are related to both gender and network structure. When I do this, the gender association becomes significant (model 2), revealing that women are 36.0% more likely than men to have an external network member who is not in contact with the partner. This result holds when network structure is taken into account (model 4). The increase in the gender estimate when life-course factors are taken into account is significant (F = 8.43, p < .01). It turns out that health is the main factor at work here. Older women have more functional health difficulties, which can

Table 4. Odds Ratios From Logistic Regression Analyses Predicting Whether the Respondent Has a Core Confidant With Whom R's Partner Has Little or No Contact (N = 1,889)[a,b]

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Female	1.217 (.152)	1.360* (.167)	1.142 (.142)	1.353* (.178)	0.561 (.656)
Age (divided by 10)		1.044 (.121)		1.057 (.125)	0.991 (.104)
Married to partner		0.696 (.204)		0.558 (.165)	0.553 (.164)
Partner is coresident		0.189*** (.068)		0.162*** (.058)	0.161*** (.058)
Retired		0.728* (.089)		0.708* (.094)	0.711* (.094)
Functional health		1.603** (.214)		1.613** (.237)	1.627** (.239)
Cognitive function		1.198* (.083)		1.200* (.089)	1.202* (.089)
Closeness to alters			0.641*** (.072)	0.527*** (.061)	0.530*** (.062)
Proportion kin			0.187*** (.038)	0.180*** (.033)	0.180*** (.033)
Proportion coresident			0.498 (.210)	0.464 (.200)	0.455 (.194)
Two non-partner alters (ref: ≥6)			0.167*** (.034)	0.160*** (.038)	0.160*** (.038)
Three non-partner alters			0.424*** (.082)	0.385*** (.071)	0.384*** (.071)
Four non-partner alters			0.575** (.113)	0.546** (.105)	0.546** (.106)
Five non-partner alters			0.730 (.149)	0.712 (.145)	0.710 (.145)
Female × Age					1.139 (.198)
F(*df*)	7.75*** (7, 44)	17.94*** (13, 38)	18.63*** (14, 37)	13.55*** (20, 31)	12.52*** (21, 30)

[a]Estimates are weighted to adjust for probability of selection, inclusion in the analysis, and differential nonresponse by age and urbanicity. All models are survey adjusted. Models also control for race/ethnicity, education, and whether the respondent forgot to include the partner in the initial list of confidants.

[b]These models include only those respondents who have both a partner and at least one other alter. Therefore, these models use a complete-case weighting form of missing data adjustment, where cases that were least likely to make it into this sample get greater weight.

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$ (two-tailed tests).

make maintaining independent contacts (e.g., in voluntary associations) more difficult. When functional health is included in model 2 alone, the odds ratio associated with gender increases from 1.22 to 1.32 ($F = 9.92$, $p < .01$).

The final measure of bridging indicates whether the respondent has more contact with each of his or her network members than his or her partner has. Most people (75.9%) are entirely free of such "partner betweenness" in their confidant relations. Multivariate analyses (Table 5) suggest that older women are more than twice as likely as older men to have this form of independence. This difference increases with the inclusion of life-course and network structural measures. Model 3 demonstrates the particular importance of network size. The more confidants one has, the greater the likelihood one's partner can monopolize contact with at least one of them. In fact, the advantage older women possess with respect to this partner-related form of bridging potential gets a significant boost—from an odds ratio of 2.09–2.66—when network size alone is stepped into model 3 ($F = 27.14$, $p < .001$). Taking all the life-course and network

Table 5. Odds Ratios From Logistic Regression Analyses Predicting Whether the Respondent Has More Contact With Each of Her or His Own Confidants Than the Spouse/Partner Does (N = 1,889)[a,b]

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Female	2.090*** (.301)	2.200*** (.302)	2.593*** (.383)	2.781*** (.420)	3.864 (4.640)
Age (divided by 10)		0.796* (.074)		0.808* (.075)	0.824 (.104)
Married to partner		0.328* (.164)		0.311* (.153)	0.311* (.152)
Partner is coresident		0.346* (.173)		0.356* (.180)	0.357* (.180)
Retired		1.027 (.183)		1.078 (.188)	1.077 (.189)
Functional health		1.172 (.169)		1.165 (.185)	1.163 (.187)
Cognitive function		0.966 (.064)		0.991 (.067)	0.991 (.066)
Closeness to alters			1.595** (.228)	1.493** (.213)	1.490** (.214)
Proportion kin			0.295*** (.055)	0.319*** (.061)	0.319*** (.061)
Proportion coresident			1.378 (.660)	1.140 (.596)	1.144 (.597)
Two non-partner alters (ref: ≥6)			6.008*** (1.576)	6.120*** (1.618)	6.119*** (1.618)
Three non-partner alters			4.095*** (.870)	4.238*** (.868)	4.246*** (.877)
Four non-partner alters			1.544* (.251)	1.518* (.240)	1.520* (.241)
Five non-partner alters			1.086 (.184)	1.063 (.166)	1.063 (.166)
Female × Age					0.953 (.168)
F (*df*)	6.28*** (7, 44)	7.84*** (13, 38)	15.87*** (14, 37)	12.69*** (20, 31)	12.61*** (21, 30)

[a]Estimates are weighted to adjust for probability of selection, inclusion in the analysis, and differential nonresponse by age and urbanicity. All models are survey adjusted. Models also control for race/ethnicity, education, and whether the respondent forgot to include the partner in the initial list of confidants.

[b]These models include only those respondents who have both a partner and at least one other alter. Therefore, these models use a complete-case weighting form of missing data adjustment, where cases that were least likely to make it into this sample get greater weight.

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$ (two-tailed tests).

factors into account (model 4), there is still a large gender difference in older adults' access to partner-independent ties. Older women are 2.8 times as likely as older men to monopolize access to all their confidant relations. In combination with the results from Table 4, these analyses provide strong support for hypothesis 3 (that older women are more likely to maintain ties that are independent of their spouse/partner than older men).

Note that gender differences in access to partner-independent network members are not conditional on age in the same way that overall bridging potential is. The interaction between gender and age is not significant, in the final models in Tables 4 and 5. This tempers support for hypothesis 1b by showing that it is restricted to overall bridging potential.

Discussion

This study was motivated by the idea that bridging positions in social networks provide older adults with opportunities to exercise autonomy and give them more control over their everyday social lives. Contrary to conventional wisdom, which suggests that women's networks are more kin-centered and communal than men's (see Ridgeway & Smith-Lovin, 1999), this study finds that older women have significantly more bridging potential in their networks. This holds for different types of ties, including those involving non-kin contacts.

This gender difference is partly, but not entirely, attributable to the fact that older women have larger networks and more ties to non-coresident confidants. And although common later life experiences like retirement, widowhood, and health problems are generally negatively related to bridging potential, there is only modest evidence that older women's bridging advantage relative to men stems from gender differences in the prevalence of these experiences. Indeed, older men are more likely to be partnered (Waite & Das, 2010), and because one's intimate partner is usually closely tied to one's other confidants (Kalmijn, 2003), this reduces older men's bridging potential. But these life-course factors still do not fully explain gender differences in bridging potential, nor do they explain why women's bridging advantage relative to men increases with age.

Several unmeasured factors may help to explain these differences. Perhaps most relevant to older adults, socioemotional selectivity theory argues that people become increasingly oriented to strong, emotionally rewarding relationships as they age (Charles & Carstensen, 2010). If preferences for more emotionally close ties are acted upon, this could lead to a disproportionate loss or abandonment of weak ties (see Ikkink & van Tilburg, 1999; Shaw et al., 2007; van Tilburg, 1998), which would in turn reduce bridging potential (Granovetter, 1973). And researchers have found that this increased selectivity is more pronounced among men (Adams & Ueno, 2006; Shaw et al., 2007). This change could reflect shifts in perceptions of masculinity that often occur in later life, which compel men to adopt more nurturing roles and to derive influence from the opportunity to convey wisdom and experience (Mann, 2007). More research is needed to determine whether this psychological shift contributes to men's decreasing bridging advantage relative to women in later life.

Whatever its cause, the gender difference in bridging potential is important because it reveals that women have a structural advantage that is known to have instrumental value in some contexts (e.g., Burt, 1992; Gould & Fernandez, 1989). However, more work is needed to understand the consequences of bridging in personal networks for older adults. A motivating assumption of this paper is that bridging increases older adults' capacities to be independent and affords them some relational power and control in their everyday lives (e.g., Burt, 2005). If this is true, bridging may have a positive effect on important psychological outcomes like sense of control and self-esteem. It may also be protective against feelings of helplessness and dependency.

Bridging potential that stems from having ties to people who are not well connected to one's spouse or partner, specifically, may have unique consequences for older adults' intimate partner relationships and for their interactions within the household. Recent work suggests that, for older men, having network contacts who are too closely linked to one's spouse can reduce partner satisfaction and lead to strained sexual relations (Cornwell & Laumann, 2011). Other work suggested that, for women, maintaining external social contacts helps them to avoid stringent gender role demands within the household (Burt, 1992). Though limited, this work suggests a provocative direction for understanding gender relations among older adults that shifts the focus to network structural factors. Along these lines, the fact that partners' social networks overlap more as time goes on (Kalmijn, 2003) deserves attention as a possible explanation for shifts in gender roles that occur in later life (e.g., Ribeiro, Paúl, & Nogueira, 2007).

It is important to note that while bridging likely contributes to older adults' independence, sense of control, and gender identity in later life, it is not a viable substitute for strong ties in dense networks. A key issue is the extent to which older adults can maintain bridging potential while also maintaining connections that yield dependable social support. It is possible that benefits of bridging are contingent on individuals' also maintaining other forms of social capital that are associated with being embedded in dense networks (Coleman, 1988). Along these lines, it is interesting that women are more likely than men to maintain both bridging potential and access to the strong types of ties that yield social support. Likewise, although partner-related bridging can be beneficial in some ways, it is important to bear in mind the benefits to partners of cultivating jointly shared contacts alongside any separate network ties. Highly overlapping social networks are advantageous to couples in later life, in part because they increase access to mutual contacts who are invested in both partners, which thereby makes it easier to coordinate social support for one partner when it is needed (Ashida & Heaney, 2008).

Collaboration between gender scholars, network researchers, and social gerontologists will help shed light on the relational causes and consequences of these forms of bridging potential in later life. Of course, future work should avoid some of the limitations of this study. Longitudinal data may be especially useful by making it possible to take into account the reciprocal effects of network structure on health factors that may affect bridging potential (Cornwell, 2009). This will also make it possible to identify some of the consequences of network bridging potential for older adults (e.g., sense of control), which are assumed but not demonstrated directly in this paper. Finally, this study cannot say anything about the structures of younger or middle-aged men's and women's social networks or how they are shaped by earlier life-course experiences (e.g., widowhood in early adulthood). Much of the research that has addressed gender differences in network structure (e.g., Moore, 1990) and the tendency for intimate partners' social networks to converge over time (e.g., Kalmijn, 2003) has focused on the general population. It is unclear to what extent the findings reported here apply to younger samples. But by exploring these issues in greater depth, social gerontologists will at least be better able to clarify the value of specific structural features of social networks to older adults.

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Appendix

Table A1. Descriptions of Key Variables Used in the Analyses[a]

Variable		Weighted mean	*SD*
Dependent variables			
Overall bridging potential	Number of alter-pairs in R's network that are not directly connected to each other. Range: 0–16.[b]	2,351	2,974
Non-kin bridging potential	Number of alter-pairs that involve at least one non-kin contact and are not directly connected to each other. Range: 0–16.[b]	2,131	2,853
Partner-independent tie	R has at least one core confidant whom R's partner contacts only once or twice a year or less often (1 = *Yes*, 0 = *No*)[c]	0.415	0.492
No partner betweenness	R's partner does not monopolize contact with any of R's core confidants (1 = *Yes*, 0 = *No*)[c]	0.745	0.440
Independent variables			
Female	R is female (1 = *Yes*, 0 = *No*)	0.515	0.500
African American	R is African American (1 = *Yes*, 0 = *No*)	0.100	0.376
Latino	R is Latino (1 = *Yes*, 0 = *No*)	0.068	0.302
Age (divided by 10)	R's age in years (divided by 10). Range: 5.7–8.5.	6.802	0.785
Education (ref: = college grad)	R did not graduate from high school (1 = *Yes*, 0 = *No*)	0.185	0.423
	R graduate from high school, but no college (1= *Yes*, 0 = *No*)	0.269	0.441
	R had some college education, no degree (1 = *Yes*, 0 = *No*)	0.300	0.451
Marital status (ref: = has spouse or partner)	R is separated/divorced and has no partner (1 = *Yes*, 0 = *No*)	0.089	0.295
	R is widowed and has no partner (1 = *Yes*, 0 = *No*)	0.151	0.397
	R never married and has no partner (1 = *Yes*, 0 = *No*)	0.028	0.173
Parent	R has living offspring (1 = *Yes*, 0 = *No*)	0.866	0.346
Retired	R is retired (1 = *Yes*, 0 = *No*)	0.595	0.483
Functional health	Average of nine standardized ordinal items (reverse-coded) assessing R's difficulty with ADLs ($\alpha = .86$). Range: −5.418 to .390.	0.051	0.690
Cognitive function	Number of items from the Short Portable Mental Status Questionnaire, such as "What day of the week is it?," that R answered correctly. Range: 0–10.	9.220	0.197
Network size	Total number of alters included in the network. Range 1–7.	4.187	1.635
Number of non-partner confidants	Number of people aside from the partner who are in the network. Range 1–6.[c]	3.490	1.438
Closeness to alters	R's average response to: "How close do you feel is your relationship with [name]?" Responses range from "not very close" (=1) to "extremely close" (=4).	3.137	0.503
Proportion coresident	Proportion of alters who live with the respondent. Range 0–1.	0.235	0.241
Proportion kin	Proportion of alters who are kin. Range 0–1.	0.687	0.295

Note. ADLs = Activities of daily living; grad = graduate; ref = reference.

[a]Means incorporate the original National Social Life, Health, and Aging Project person-level weights, with poststratification adjustments for nonresponse. The *N*s for different models vary, so estimates are calculated for all cases for which data are available.

[b]Applies only to respondents who have at least two network members.

[c]Applies only to respondents who have a spouse/partner and who have at least one other network member.

Table A2. *Unstandardized Coefficients from OLS Regression Analyses Predicting the Effective Size of Respondents' Social Networks (N = 2,772)*[a]

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
Female	.319*** (.039)	.256*** (.039)	.191*** (.035)	.233*** (.032)	.173 (.310)
Age (divided by 10)		.055 (.031)		.013 (.029)	.008 (.037)
Separated/divorced		.550*** (.105)		–.059 (.113)	–.059 (.113)
Widowed		.223* (.069)		–.248** (.074)	–.249** (.075)
Never married		.460** (.153)		–.254 (.154)	–.254 (.154)
Retired		–.028 (.054)		.011 (.046)	.012 (.045)
Functional health		.089* (.042)		.044 (.017)	.044 (.031)
Cognitive function		.063** (.018)		.044* (.017)	.044* (.017)
Closeness to alters			–.254*** (.040)	–.269*** (.039)	–.269*** (.039)
Proportion kin			–1.194*** (.066)	–1.187*** (.064)	–1.186*** (.064)
Proportion coresident			–1.326*** (.116)	–1.531*** (.122)	–1.532*** (.123)
Female × Age					.009 (.045)
Constant	2.068*** (.053)	1.050*** (.264)	3.917*** (.126)	3.497*** (.280)	3.526*** (.326)
F(*df*)	37.79*** (7, 44)	25.19*** (14, 37)	119.37*** (10, 41)	78.58*** (17, 34)	73.51*** (18, 33)

[a]Estimates are weighted to adjust for probability of selection, inclusion in the analysis, and differential nonresponse by age and urbanicity. All models are survey adjusted. Models also control for race/ethnicity, education, and whether the respondent forgot to include the partner in the initial list of confidants.

$^*p < .05$; $^{**}p < .01$; $^{***}p < .001$ (two-tailed tests).