Social Networks Among Men and Women: The Effects of Age and Socioeconomic Status

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Objectives. This study examines the main and interactive effects of age and socioeconomic status (SES) on social networks.

Methods. Respondents are drawn from a regional stratified probability sample aged 40 to 93 years. Hierarchical regression analysis estimates the influence of age and SES on dimensions of social networks, controlling for marital status and health among men and women.

Results. Among men, older age was associated with older networks. Professional men report networks that are less geographically proximal, however, occupational effects are most obvious in late life. Among women, age is associated with smaller networks that are older, less geographically proximal, and less frequently contacted. Whereas less education is associated with younger network members in midlife, among women in later life, lower levels of education are not associated with a younger network. Professional women report older networks composed of a higher proportion of friends than do homemakers. Higher levels of education are linked to larger personal networks among men and women, but not to the number of individuals considered closest. Among women, higher levels of education are also associated with less proximal networks.

Discussion. An examination of within-group variability reveals influences of age and SES on personal networks among men and women.

SOCIAL networks can be thought of as a key resource over the life course, a form of social capital that potentially influences the exchange of supports. Individual social networks vary in terms of the number of network members, frequency of contact, geographic proximity, and composition. These aspects of network structure provide an indication of the support resources available during times of need. A multifaceted, diffuse, large network may be considerably more helpful in solving a problem than one that is dense, family based, and small (Burt, 2001). Social capital, however, depends in large part on other forms of human capital such as occupation and education (Bourdieu, 1986). Moreover, social capital varies by gender and usually accumulates over time. Hence, the presence of resources in middle and old age derives from the nature and type of relations with others developed across the life course. In this article, we study pathways predicting network structure separately for men and women. Specifically, we examine how the social resources of men and women, as indicated by network structure, are influenced by age and two forms of capital (education and occupation).

THE CONVOY MODEL

The convoy model of social relations offers a framework within which to consider how cultural or human capital influences the availability of social capital. Convoys represent an assembly of family and friends, who surround the individual and are available as resources in times of need. Convoys are thought to be dynamic and lifelong, changing in some ways, but remaining stable in others, across time and situations (Antonucci, 1985; Kahn & Antonucci, 1980).

Convoys constitute a structure of social relationships yet still exist within a larger social context. Berkman, Glass, Brissette, and Seeman (2000) elaborate a theoretical model where social networks are conditioned by larger social forces including culture, socioeconomic status (SES), politics, and social change. Network characteristics form and are maintained in response to such conditions, but they also provide opportunities for the development of various psychobiological pathways (e.g., social support, immune system function) that ultimately influence health. Whereas pathways between social networks and health receive a fair amount of attention, an area in need of further elaboration is the socioeconomic underpinnings of convoy characteristics. An examination of pathways between human and social capital will offer a more theoretically developed understanding of social relations (Berkman et al., 2000; Kawachi & Berkman, 2000).

Network characteristics may differ according to stage of life, and as Robert and House (1996) illustrate, experiences at a given stage in life may differ by SES. For example, people with lower SES are more likely to develop serious health problems at a younger age. SES represents access to human capital, which in turn influences life chances, such that those with less human capital may incur more hardship and have less opportunity than those with more human capital. The convoy model provides a flexible framework to ascertain both continuity and change in social ties at various life stages and may help us to better understand the diversity of social networks depending on various levels of SES for men and women across the life span.

AGE, GENDER, AND SOCIAL NETWORKS

Age differences in network structure may reflect differing roles and responsibilities according to life stage. Whereas middle-aged adults are more likely to experience multiple responsibilities related to family and work, those older in years...
Socioeconomic Status, Gender, and Social Networks

Individual SES indicators such as education level and occupational status often reflect cohort-specific aspects of stratification and inequality, constituting two critical forces that order social experience and uniquely affect the compilation of personal networks (Broese van Groenou & van Tilburg, 2003; Campbell, Mardsen, & Hurlbert, 1986; McPherson, Smith-Lovin, & Cook, 2001; Moore, 1990). Although a structural argument posits that men and women who exhibit similar SES characteristics will have similar personal network characteristics (e.g., Moore, 1990), such assumptions neglect the gendered experiences within various roles and resulting opportunities for establishing social networks (Moen, 2001).

Occupation often varies by gender as well as prestige and status. It provides information about the psychosocial and physical conditions encountered in the daily working environment (Grundy & Holt, 2001; Liberatos, Link, & Kelsey, 1988). Men, in general, report a greater number of coworkers within their social network than women, whereas women report fewer nonfamily members (Mardsen, 1987; Moore, 1990). Women often occupy the kin-keeping role, taking responsibility for ensuring continued family interactions. For example, regardless of social class, women report more in-person contact with their children than do men (Greenwell & Bengtson, 1997).

High-status occupations seem to confer greater opportunity for individuals to form ties with coworkers than low-status positions. It is often the case that men have more opportunity to form social connections in the workplace relative to women because women are more likely to be in lower-wage jobs that have poor, often isolated, working conditions (Kalleberg, Reskin, & Hudson, 2000). Even among women who do hold high-status occupations, they often work a second shift due to their responsibility for managing home, child, and elder care while working full time (Goldscheider, 1990; Hochschild, 1989; Moen, Robinson, & Fields, 2000). These additional obligations limit the time women have available to maintain relationships with coworkers. Perhaps most significantly, women are likely to hold the occupational status of homemaker, working solely within the home and usually without direct financial compensation. Because of these different experiences, men and women will be examined separately. We believe that prior research examining these issues in combined samples of men and women obscures variability that may exist within each group. We expect that occupational status will affect the structure of men’s networks only with regard to geographic proximity; that is, men in professional occupations will have networks that are geographically less proximal (Hypothesis 3). We also predict that women in professional occupations will report younger personal networks that are larger and less geographically proximate, with a higher proportion of friends than do homemakers (Hypothesis 4).

Higher education levels are linked to more diverse, less family-based networks (Krause & Borawski-Clark, 1995; McPherson et al., 2001; Wenger, 1995), perhaps due to the greater “cognitive resources and skills” that are needed to develop and sustain social relationships (Broese van Groenou & van Tilburg, 2003, p. 629). However, Kubzansky and colleagues (1998) found that among an older sample of adults aged 70 to 79 years, lower levels of education were associated with larger social networks. The potential benefits of education regarding network characteristics may play out similarly for both men and women. We hypothesize a structural explanation with regard to the effect of education on the personal networks of men and women (Moore, 1990). Among both men and women, higher education will be associated with different patterns of personal networks in terms of size, geographic proximity, contact frequency, and composition (Hypothesis 5).

This study examines the influence of age and SES on social network characteristics among men and women divided into three age groups: middle age (40–64 years), young-old (65–74 years), and late life (75+ years). By examining education level and occupational status of the respondent (measures of income are unavailable), we employ aspects of SES thought to represent unique dimensions of stratification (Broese van Groenou & van Tilburg, 2003; Grundy & Holt, 2001; Liberatos et al., 1988), providing a more nuanced understanding of the link between SES and the nature and extent of resources available within personal networks at different life stages. However, as Broese van Groenou and van Tilburg (2003) indicate, SES is highly correlated with age; therefore, interaction effects were examined to ensure a more careful portrait of age, SES, and social networks among men and women. Additionally, we control for marital
status and health, both of which influence the nature and type of personal networks (Akiyama, Elliot, & Antonucci, 1996; Berkman et al., 2000; van Tilburg & Broese van Groenou, 2002).

**Methods**

**Participants**

The current sample was drawn from the Survey of Social Relations (Antonucci & Akiyama, 1991), a stratified regional probability sample of 1,702 participants, which focused on the dynamics of social relations, stress, and mental health. People aged 60 years and older were oversampled. The overall response rate for the study was 72%. We focused on a subsample of 358 men and 482 women between the ages of 40 and 93 years.

**Measures**

**Age.**—Age was divided into three groups: individuals aged 40 to 64 years (middle age), 65 to 74 years (young old), and 75 to 93 years (old old).

**Marital status.**—Marital status was coded as married or not (1 = married).

**Health status.**—Self-reported health was assessed with one question rated on a 5-point scale (1 = very poor, 5 = excellent).

**Socioeconomic status.**—SES was assessed with two measures: education level and occupation type.

**Education level.**—Education level was indicated by the highest grade of education completed. Respondents were divided into three groups: less than high school (completed years 1–11), high school (completed grade 12), more than high school (completed year 13 or higher).

**Occupation type.**—Occupation type was measured by asking the respondent his/her main occupation. If respondents indicated that they were retired, they were asked to indicate what was their main occupation. Occupation type was then defined using prestige scores based on the 1970 U.S. Census occupational codes. These nine occupational codes were collapsed into four different categories: (1) professional (professionals, managers), (2) sales or clerical (sales, clerical, crafts), (3) laborer (operatives, laborers, farm workers, service workers), (4) homemaker. The homemaker category applied only to the analyses of women.

**Hierarchical Mapping of Social Relations**

The hierarchical mapping technique (Antonucci, 1986) assessed the structure of an individual’s social relations. Respondents are presented with a set of three concentric circles with the word “YOU” written in the middle. In the inner circle, they are asked to place people to whom they feel “so close and important it is hard to imagine life without them”; in the middle circle, they are instructed to name “people to whom you may not feel quite that close but who are still very important to you”; and in the outer circle, they include “people who are close enough and important enough in your life that they should be placed in your personal network.” Respondents then answer a series of questions concerning the first 10 people they name in their network. The specific network structure variables included in the current study consist of the following:

- Total network size represents the number of people the respondent included on his/her diagram (i.e., inner, middle, and outer circles combined) with possible values ranging from 0 to 10.
- Inner circle size represents the number of people respondents placed in the inner circle with possible values ranging from 0 to 10.
- Average age of network was calculated by averaging the age of the first 10 network members the respondent named.
- Proximity indicates the proportion of network members that live within an hour’s drive of the respondent. Contact represents the average frequency with which respondents have contact with their network. Proportion of friends indicates the percentage of network members they designated as friends.

**Methods of Analysis**

Hierarchical regression models were used to test the effects of age, education, and occupation on social network structure characteristics. Separate models were conducted for each dimension, and all analyses were conducted separately for women and men (Hochschild, 1989; Liberatos et al., 1988; Moen, 2001). The covariates marital status and self-rated health were entered in the first model. The main effects for age, education, and occupation (dummy coded with 40–64 years, greater than high school education, and professional as reference groups) were entered in the second model. Interaction terms (Age × Education and Age × Occupation) were included in the third model.

**Results**

To afford an overview of the data, analysis-of-variance and chi-square tests were performed to provide descriptive statistics by age group for both men and women. Results indicate that there were age differences in network size for both men and women, with those in the oldest age category reporting the smallest total networks comprised of older network members. Among women, the oldest age group also reported a smaller number of people to whom they felt closest and networks with whom that they had less frequent contact. Among both men and women, age differences were found in education and marital status. And finally, age differences exist with regard to occupational status among women and health status among men. Details of these findings are presented in Table 1.

Regression analyses were used to test the different effects of age, education, and occupational status on the social networks of men and women. Tables 2 (men) and 3 (women) present these findings. In each case, three models were tested: Model 1, including only the covariates marital and health status; Model 2, which additionally tested the main effects of age, education, and occupation; Model 3, which tested the interaction effects of Age × Education and Age × Occupational status. Only Model 2 is presented unless an interaction term in Model 3 was significant, in which case Model 3 is presented.

**Age and Social Networks**

**Men.**—We predicted (Hypothesis 1) that older men would have older personal networks, which consisted of fewer friends.
As Table 2 indicates, there was a significant main effect for network age. Those in the older age groups (i.e., 65–74 and 75–93 years) report older social networks than the youngest age group (40–64 years). There was also a significant main effect of proximity. Men in the oldest age group (75–93 years) report older social networks than the youngest age group (40–64 years). Age is a significant predictor of contact frequency, but contrary to our hypothesis, they had younger social networks than those in the youngest age group (40–64 years). Age is a significant predictor of contact frequency, but contrary to our hypothesis, those in late life (aged 75–93 years) report less frequent contact with their networks than do those in midlife (40–64 years). Hypothesis 2 was also partially supported.

Women.—We predicted (Hypothesis 2) that among women, older age would be associated with smaller networks that were younger, less proximal, and with greater contact frequency. Table 3 presents the results for women. Women in the oldest age group (75+ years) did report smaller total networks, but there were no differences in inner network size. They also reported older social networks. Women in the older two age groups (65–74 and 75–93 years) live farther away from their social network than those in the youngest age group (40–64 years). Age is a significant predictor of contact frequency, but contrary to our hypothesis, those in late life (aged 75–93 years) report less frequent contact with their networks than do those in midlife (40–64 years). Hypothesis 2 was also partially supported.

Socioeconomic Status and Social Networks

Men.—We predicted that occupational status would only influence the proximity of men’s social networks such that men in professional occupations would have more geographically dispersed networks (Hypothesis 3). The results indicate that men in sales positions were more likely to have social networks that lived within an hour’s drive than were those in professional occupations. However, an interaction effect demonstrates that those in sales positions aged 65 to 74 years have fewer network members living within an hour’s drive than those in sales positions who are middle aged (40–64 years). Furthermore, laborers aged 75 to 93 years have geographically more proximal networks than do laborers in middle age, aged 40 to 64 years (Figure 1). As suggested by Hypothesis 3, results indicate that occupation is associated with network proximity, but this association is further complicated by an interaction with age.

We also predicted that among men, higher education would be associated with larger and more geographically dispersed personal networks, more frequent contact, and a higher proportion of friends (Hypothesis 5). Results indicate that education only predicted network size. Specifically, men with more than a high school education had larger social networks than those with less than a high school education (see Table 2). There were no main effects of education for inner network size, network age, proximity, frequency of contact, or proportion of friends in the network. Little support for Hypothesis 5 is evident, although men with higher education do, as predicted, have larger networks.

Women.—We predicted that women in professional occupations would have younger personal networks that were larger, more geographically dispersed, and with a higher proportion of friends than do women who were homemakers (Hypothesis 4). Homemakers did have fewer friends in their social networks, but, contrary to our hypothesis, they had younger social networks than those in professional occupations. There were no differences in other network characteristics. Hypotheses 4 was only partially supported.

Regarding education, we predicted that higher education level would be associated with larger and more geographically dispersed personal networks, more frequent contact, and a higher proportion of friends (Hypothesis 5). Consistent with our hypothesis, those with more than a high school education reported larger social networks than those with less than a high school education. Those in the lower education groups (less than high school and high school) lived closer to their social networks than those with more than a high school education.
There was a significant interaction such that women aged 75 to 93 years with a high school education had a younger social network than women with a high school education in the two younger age groups (Figure 2). There were, however, no network differences for inner network size, frequency of contact, or the proportion of friends in the network. Hypothesis 5 was only partially supported.

**DISCUSSION**

Characteristics of personal networks, often considered a resource, represent a critical issue for aging populations. This study advances our knowledge concerning the SES-network association across the life course by examining key aspects of personal networks at three life stages, specifically investigating the influence of age and SES on the personal networks of men and women.

Our main objective was to focus on within-group variability. First, we tested the effects of age and SES on social networks among men. We predicted age effects to be less prevalent, hypothesizing that an increase in age would be associated with an increase in the average age of the personal network as well as with a lower proportion of friends. As hypothesized, older age was associated with an older personal network; however, age was not associated with the proportion of friends within a network. Men in professional occupations, as predicted, report networks that are less geographically proximal. However, occupational effects are minimal in middle age and most obvious in late life, suggesting a potential cohort effect. It may be that professional occupations do not necessarily yield proximity dispersion among those in the midlife cohort due to the changing and increasing opportunities for professionals in a postindustrial economy (Broese van Groenou & van Tilburg, 2003). Conversely, this finding may represent a cumulative effect over the life course, where late life proximity reflects earlier career choices (Greenwell & Bengtson, 1997).

Second, we examined the effects of age and SES on network structure among women. The associations between age and average age of network evolve differently by life stage depending on level of education. With older age, one observes networks that are composed of older members. Although this association appears to be linear for those with less than a high school education, it is less predictable for those who are more highly educated, suggesting that education levels may be a more sensitive indicator of access to resources among older cohorts (Broese van Groenou & van Tilburg, 2003). Professional women report older networks comprised of a higher proportion of friends than homemakers, partially supporting our hypotheses of age differences for inner network size, frequency of contact, or the proportion of friends in the network. Hypothesis 5 was only partially supported.

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Notes: Model 2 is presented unless an interaction term was significant, in which case Model 3 is presented. When Model 3 is reported, only the significant interactions are presented. *p < .05; **p < .01; ***p < .001.

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number of individuals to whom respondents feel closest or to the other resource characteristics of personal networks. Among women, higher education is associated with both larger personal networks and lower geographic proximity but does not influence composition. Further analyses of men and women together in one model (excluding homemakers) were also conducted and are available upon request from the authors.

With regard to the effects of SES on social networks, we demonstrate that education and occupation influence network structure differentially, supporting the idea that education and occupation represent different aspects of SES especially among middle-aged and older adults (Grundy & Holt, 2001, Liberatos et al., 1988). Using women’s own level of education or occupation may underestimate their SES (see Grundy & Holt, 2001). We include the category of “homemakers” as a type of occupational level, but in particular, this category of women may have differentially benefited from the SES level of their husband during the life course. A cross-tabulation of occupational and educational levels demonstrates a significant correlation (higher education is associated with professional occupation), but whereas a larger proportion of homemakers (approximately one third of the women in the sample) report less than a high school education, still one third of those in the homemaker category report at least a high school education and one fourth report more than a high school education. Hence, not all homemakers exhibit low educational levels.

We further elaborate the gendered characteristics of convoys over the life course by examining the associations between age and social networks among men and women separately (Moen, 2001). The pattern of results involving life stage illustrates that network structure does not vary much among men at different ages. On the other hand, life stage effects emerge particularly among women in late life, with those aged 75+ differing most in network structure from their middle-aged counterparts. When one considers that these findings are especially relevant for women aged 75+ years, it may be the case that their children have moved away and/or are busy with their own family obligations, leaving less time to devote to their parents. This is particularly important because at this stage of life, there is often a need for greater resources, but less likelihood of acquiring new access to these resources. Our findings suggest that the structure of personal networks in later life stages does not provide the same levels of potential capital for women that they do for those in midlife.

It is important to note that neither age nor SES influences the number of inner circle members (i.e., those individuals designated as so close that one cannot imagine living life without them) of men or women. This result may reflect that inner circle membership tends to universally consist of close family, that is, spouse, children, and parents. This finding provides further evidence that age and SES perhaps are more important for understanding the breadth of resources available, but not necessarily the depth of social relations (Burt, 2001).

These findings indicate the nature and shape of convoys as social resources among men and women and also illustrate the benefit of investigating gendered life span experiences. Longitudinal examinations of the influence of SES on network characteristics suggest that lower lifetime levels of SES predict vulnerability among elders with regard to social networks (Broese van Groenou & van Tilburg, 2003). Longitudinal analyses, however, also highlight the influence of other factors such as marital status (Utz et al., 2002) and health (van Tilburg & Broese van Groenou, 2002) on network characteristics. Our analyses do suggest that marital status is somewhat important for both men and women, but health, as indicated by self-ratings, mattered little regarding social network characteristics.

The current findings represent a systematic analysis of social network characteristics demonstrating how human and cultural capital influence social capital across life stage among men and women. These findings illustrate within-group variability, particularly that various social resources available to women are especially sensitive to different measures of SES and that life stage represents an important means by which to understand social resources available to women and to men.

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