

Accounting for Changes in Social Support Among Married Older Adults: Insights From the MacArthur Studies of Successful Aging

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Using longitudinal, community-based data from the MacArthur Studies of Successful Aging, the authors examined determinants of changes in social support receipt among 439 married older adults. In general, social support increased over time, especially for those with many preexisting social ties, but those experiencing more psychological distress and cognitive dysfunction reported more negative encounters with others. Gender affected social support receipt: Men received emotional support primarily from their spouses, whereas women drew more heavily on their friends and relatives and children for emotional support. Discussion centers on the importance of social support provision to those with the greatest needs.

By the year 2050, life expectancy for men and women will have increased by almost 15 years from what it was in the year 2000 (U.S. Bureau of the Census, 2000). These increases in life expectancy, coupled with changing needs that may require social support, highlight the importance of understanding the social networks of older adults, the factors that influence social support receipt, and the factors that may threaten the availability of this important resource. The present study focused especially on gender and on individual differences such as depression, cognitive and physical functioning, and self-efficacy that may affect social support receipt over time.

Importance of Social Support

Social support and social networks have positive effects on the health and well-being of adults of all ages (Antonucci & Jackson, 1987; Bowling, 1994; Fratiglioni, Wang, Ericsson, Mayten, & Wimblad, 2000; Gotlib & Whiffen, 1992; Helgeson & Cohen, 1996; House, Umberson, & Landis, 1988; Kriegsman, Penninx, & van Eijk, 1995; Reifman, 1995; Sarason, Sarason, & Gurung, 2001; Schwarzer & Leppin, 1992). The question of whether and

how available social support may change is of particular importance for older adults because the networks of older adults are at greater risk for changes in membership. Age-specific experiences such as retirement, adult children leaving the home, health declines that make socializing more difficult, the loss of a spouse or close friends, and relocation to institutional facilities have led laypersons and scientists alike to hypothesize that older adults are vulnerable to a loss of social support (Bosse, Aldwin, Levenson, Spiro, & Mroczek, 1993; Miller & Cavanaugh, 1990; Morgan, 1989).

Several theoretical frameworks have been developed to understand the social networks of older adults, including the hierarchical-compensatory model (Cantor, 1979), socioemotional selectivity theory (Carstensen, 1987), activity theory (Cummins & Henry, 1961), disengagement theory (Havighurst & Albrecht, 1953), the social convoy model (Kahn & Antonucci, 1980), the task-specific model (Litwak, 1985), and the functional-specificity model (Weiss, 1974). Some are especially relevant to age-related change (e.g., Carstensen, 1987; Kahn & Antonucci, 1980), whereas others inform a focus on sources and types of support (e.g., Litwak, 1985; Simons, 1983–1984; Weiss, 1974).

Theories of Change

The social convoy model (Antonucci, 1991; Kahn & Antonucci, 1980) provides a conceptual framework for studying age-related changes in structural and compositional characteristics of social networks. It postulates that people are motivated to maintain their social network sizes as they age, although there may be changes in the composition of the networks. Individuals construct and maintain social relationships while becoming increasingly aware of specific strengths and weaknesses of particular members. This knowledge allows them to select different network members for different functions (e.g., certain people are relied on for emotional support, others for instrumental support) and possibly to avoid those members who are not supportive. Empirical support for the model (Kahn & Antonucci, 1984) clearly identifies the importance of simultaneously looking at different sources when studying changes in age-related social support. Although specific nonsupportive network members may drop out over time, the social

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convoy model suggests that general levels of support will be constant or even increase, given that social support is coordinated to optimize support receipt.

Socioemotional selectivity theory (Carstensen, 1987, 1991) proposes that people prune their social networks to maintain a desired emotional state depending on the extent to which time is perceived as limited. Basic functions of social interaction, such as regulating desired emotional states, differ in respect to their relative importance for determining social preferences across the lifespan. Emphasis in old age is placed on achieving short-term emotional goals. Correspondingly, whereas older adults' social networks may be smaller than those of younger adults, the numbers of close relationships are comparable (Lang & Carstensen, 1998). For example, Lang and Carstensen (1994) examined the interrelationships among age, network composition, and social support in a representative sample of 156 community-dwelling and institutionalized adults aged 70–104 years and found that the social networks of older people were only half as large as those of younger people but that the number of very close relationships did not differ across age groups.

Both theories have received some support (Antonucci & Akiyama, 1995; Carstensen, Isaacowitz, & Charles, 1999; Lansford, Sherman, & Antonucci, 1998), with evidence indicating that it is not necessarily the size, membership, or particular structure of the network, but the quality of transactions (i.e., perceived and received social support) that is critical to mental and physical health. The present study builds on empirical tests of these theories to examine changes in functional social support. Even though network size may decrease (e.g., due to socioemotional selectivity) and membership may change (e.g., according to the social convoy model), both theories lead us to the hypotheses that the quality of support in networks of older adults remain the same or actually increase over time and that this is true especially of emotional support.

Differentiating Support by Type and Source

Two major theoretical models suggest that different sources of support serve different support functions. In his task-specific model, Litwak (1985) reported that different sources of support (e.g., friends vs. spouse) typically provided different types of support (e.g., companionship vs. housecleaning). A review by Crohan and Antonucci (1989) found that family members more often provide instrumental support and that friends more often provide emotional support and companionship.

A related theory, Weiss's (1974) functional-specificity model, suggested that individuals' requirements for specific forms of support can be met only within certain relationships. Even when the same type of support is provided by different sources, its impact may not be the same. In support of this theory, Simons (1983–1984) found that only older participants' relationships with their spouses and children, but not with other individuals, were related to feelings of security. Felton and Berry (1992) found that informational support to older adults contributed more to well-being when provided by kin than when provided by nonkin, whereas emotional support contributed more to well-being when provided by nonkin than when provided by kin. Thus, alterations in the composition of social networks over time could alter the relative availability and efficiency of different types of support

because of changes in the availability of certain types of ties (Connidis & Davies, 1990; Peters, Hoyt, Babchuk, Kaiser, & Iijima, 1987; Seeman & Berkman, 1988; Simons, 1983–1984).

The study of older adults' social networks requires attention to their potential costs as well. If interactions with others are negative or rancorous, the adverse effects on mental and physical health can offset and even outweigh the benefits that social support provides (Rook, 1984; Schuster, Kessler, & Aseltine, 1990).

Given these diverse findings, this study was designed to illuminate changing patterns of support (or lack of it) by source and type. We focus on three types of behaviors: emotional support, instrumental support, and negative behaviors. Drawing on the task-specific and functional-specificity models, we predicted that different sources of support would provide different kinds of support, with closer relationships (e.g., spouse) providing increased emotional support over time.

The Role of Individual Differences

In addition to experiencing changes in network composition that are largely due to non-elective events such as death of network members, individuals differ in their propensity to prune or augment their own networks and in their likelihood of being pruned from or added to others' networks. Referred to in the support literature as *evocative qualities*, personal characteristics may be critical determinants of whether support transactions increase or decrease over time (Pierce, Lakey, Sarason, Sarason, & Joseph, 1997).

Gender is one of the most robust predictors of use of social support (Taylor et al., 2000; Unger, McAvay, Bruce, Berkman, & Seeman, 1999). Women receive and give more support over the life course (e.g., Rook & Schuster, 1996), and women experience greater benefits from social network interactions (see Antonucci & Akiyama, 1987; Berkman, Vaccarino, & Seeman, 1993; Flaherty & Richman, 1989; and Shumaker & Hill, 1991, for reviews). Some studies have shown that for men, friendships and nonfamily activities decline with age, whereas women's friendships outside the home do not change (Field, 1999). Accordingly, we hypothesized that social support would vary by gender, with women reporting more support, especially from friends and children. Given that men are less commonly support providers than women, we predicted this difference would be qualified by the source of support, with women reporting less spousal support than men.

We also examined psychological variables that may affect social support receipt. Previous research has suggested that individuals high in self-efficacy have better social relationships (Antonucci & Jackson, 1987; Lang, Featherman, & Nesselrode, 1997). Those high in self-efficacy may be better able to recruit and maintain social support that in turn could reciprocally increase self-efficacy. Similarly, a number of studies have also reported evidence for a reciprocal relationship between depression and social support, suggesting that depressed individuals can eventually drive off potential support providers (e.g., Coyne & DeLongis, 1986). Physical functioning limitations may also influence social support, in part by increasing need for help but indirectly and potentially adversely, by affecting depressive symptoms which may drive off support (Blazer, Burchett, Service, & George, 1991; Blazer, Hughes, & George, 1992; Newsom & Schulz, 1996). Accordingly, we predicted declines in emotional support over time among those

Table 1
Means (and Standard Deviations) of Major Variables

Variable	Men (<i>n</i> = 287)		Women (<i>n</i> = 152)	
	1988–1989	1991	1988–1989	1991
Age (in years)	76.44 (2.92)		76.29 (2.55)	
Income*	\$21,659.00 (\$13,779.00)		\$18,315.00 (\$12,832.00)	
Social support				
Emotional				
Spouse	6.96 (1.34)	7.08 (1.27)	6.60 (1.52)*	6.55 (1.65)*
Children	6.76 (1.55)	7.06 (1.39)	7.01 (1.54)*	7.27 (1.24)*
Friends/relatives	6.44 (1.56)	6.75 (1.38)	6.96 (1.31)*	7.21 (1.24)*
Instrumental				
Spouse, 1988–1989	6.65 (1.55)	6.70 (1.47)	6.13 (1.60)*	6.00 (1.66)*
Children, 1988–1989	4.99 (2.01)	5.40 (1.91)	4.79 (2.20)	5.80 (1.76)*
Friends/relatives, 1988–1989	4.48 (2.03)	5.18 (1.71)	4.62 (2.00)	5.22 (1.74)
Negative				
Spouse	4.41 (1.62)	4.51 (1.60)	4.31 (1.68)	4.32 (1.66)*
Children	3.15 (1.34)	3.39 (1.41)	3.04 (1.24)	3.07 (1.36)*
Friends/relatives	3.00 (1.21)	3.13 (1.26)	2.81 (1.07)	2.90 (1.25)*
Social ties	10.77 (5.44)	9.86 (5.48)	9.53 (5.01)*	8.97 (4.71)*
Mastery	19.23 (2.39)		18.76 (2.17)*	
Self-efficacy	26.91 (2.23)		26.27 (2.47)*	
Depression	13.63 (2.75)		14.72 (3.62)*	
Physical functioning	2.96 (0.45)		2.73 (0.42)*	

* Significant gender differences ($p < .05$) by one-way analyses of variance.

who were low in self-efficacy or high in depression or physical limitations.

In summary, in the current study we explore how support changes over time by examining three different types of social interactions (emotional support, instrumental support, and conflictual interactions) from three different sources (spouse, children, and close friends and relatives). In addition, we examine gender differences in patterns of change as well as an assessment of psychological and health status characteristics that are potential predictors of change in social support.

Sample and Method

The MacArthur Successful Aging Study (MSAS)

The current study uses data from the MSAS, a longitudinal study of relatively high functioning men and women aged 70–79. The study was originally designed to examine a broad range of factors hypothesized to be associated with “successful aging” (Rowe & Kahn, 1987). Participants for the MSAS were originally sampled on the basis of age and both physical and cognitive functioning from three community-based cohorts of the National Institute on Aging’s Established Populations for Epidemiologic Studies of the Elderly (EPSE) in Durham, NC; East Boston, MA; and New Haven, CT (Coroni-Huntley, Brock, Ostfeld, Taylor, & Wallace, 1986). Age was restricted to 70–79 years at time of enrollment to minimize the effects of age differences on the analyses of factors relating to better health and functioning.

Age-eligible men and women ($N = 4,030$) were screened by using four criteria of physical functioning and two criteria of cognitive functioning to identify those functioning in the top third of the age group. The selection criteria included the following: (a) no reported disability on the seven-item Activities of Daily Living scale (Katz, Ford, Moskowitz, Jackson, & Jaffe, 1963); (b) no more than one reported mild disability on eight items tapping gross mobility and range of motion (Nagi, 1976; Rosow & Breslau, 1966); (c) ability to hold a semitandem balance for at least 10 s; (d) ability to stand

from a seated position five times within 20 s; (e) scores of six or more correct on the nine-item Short Portable Mental Status Questionnaire (Pfeiffer, 1975); and (f) ability to remember three or more of six elements on a delayed recall of a short story.

A cohort of 1,313 participants met all screening criteria for enrollment in the MSAS, and 1,189 (90.6%) provided informed consent. Baseline data collection was completed between May 1988 and December 1989 (Time 1; T1) and included a 90-min face-to-face interview. Data collection included detailed assessments of cognitive and physical performance; health status; and social, psychological, and lifestyle characteristics. The cohort was re-interviewed beginning in May 1991 (Time 2; T2). The average time between T1 and T2 was 23 months. Attrition from T1 (1988–1989) to T2 (1991) included 73 deaths and 58 persons who refused or could not be relocated. The surviving nonparticipants did not differ significantly from the rest of the cohort on any of the baseline demographic or health status variables used in this study. Analyses reported made use of a subset of participants who completed the 1988–1989 and 1991 interviews. Because sources of support (including support from a spouse) were a major focus of the study, only those participants who had living spouses at both time points were included, yielding a sample of 439.¹

Table 1 summarizes the sociodemographic and psychological characteristics of the sample at the time of the first interview. The majority of the sample was White (83%; the remainder was African American). A one-

¹ By selecting only those participants who reported support from a spouse, we drastically reduced the sample size of our analyses but controlled for having a marital relationship. In order to compare those included in the analyses with participants without spousal support, we ran additional analyses. Participants without spouses and children reported significantly higher levels of negative support but similar levels of emotional and instrumental support from friends and relatives as compared with participants with spouses. Participants without spouses reported significantly higher levels of emotional and instrumental support from their children, family, and friends but similar levels of negative support.

way analysis of variance (ANOVA) showed that people in the study at both time points had higher levels of emotional support from spouse at T1 ($p < .01$) than did those who participated only at T1. Preliminary analyses compared the men and women on the psychosocial and physical functioning variables at baseline. Men and women were not significantly different in their ages. Men reported significantly higher annual incomes than women, $F(1, 438) = 17.43, p < .001$, assessed in \$2,000 increments as total household income (Table 1 presents income data.) (A dummy indicator was used for participants with missing data so as not to incur participant loss.)

Measures of Social Support

The MacArthur battery included assessments of frequency of receipt of emotional and instrumental support, as well as the frequency of negative interactions involving conflict or excessive demands, from three sources (spouse, children, and friends and family). Emotional support was measured by two items (which were asked separately for one's spouse, one's children, and one's close friends and relatives): "How often does/do your [spouse/children/friends and relatives] make you feel loved and cared for?" and "How often does/do your [spouse/children/friends and relatives] listen to your worries?" Interitem correlations ranged from .49 ($p < .001$) for spouse to .34 ($p < .001$) for friends and relatives. Similarly, two items assessed the extent to which participants received instrumental support: "How often can you count on your [spouse/children/friends and relatives] to help with daily tasks like shopping, giving you a ride, or helping you with household tasks?" and "How often does/do your [spouse/children/friends and relatives] give you advice or information about medical, financial, or family problems?" Interitem correlations ranged from .20 ($p < .001$) for friends and relatives to .26 ($p < .001$) for kids. Negative aspects of relationships were measured by two items that assessed the frequency with which participants' spouses, children, or friends and relatives "made too many demands" or "were critical." Interitem correlations ranged from .48 ($p < .001$) for spouse to .28 ($p < .001$) for friends and relatives. Respondents indicated answers for each question on a 4-point scale that ranged from 0 (*never*) to 3 (*frequently*). For each source of support, summary measures for each type of support (emotional, instrumental, and negative interaction) were created for the 1988–1989 and 1991 time points by summing the two items within each category.

Psychosocial Predictors

Social ties. A summary measure representing the total number of children, family, and friends reported by the respondent was created. Participants were asked how many children, if any, they had who were presently living and how many relatives and close friends they had whom they felt close to (i.e., people they felt at ease with, whom they could talk to about private matters, and whom they could call for help).

Self-efficacy. A nine-item scale developed and validated by Rodin and McAvay (1992) and found to be of particular relevance to older adults was used to assess participants' self-efficacy in nine life domains. Items reflected both interpersonal efficacy beliefs (i.e., relating to one's ability to deal with relationships with family, friends, and spouse) and instrumental efficacy beliefs (i.e., relating to perceived ability to perform activities like keeping healthy; making arrangements for finances, transportation, and housing; staying safe; and managing general productivity). Respondents were asked to read each statement and to indicate their agreement by using a scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). A summary score was created, scored such that a higher score reflected higher efficacy. Cronbach's alpha in this sample was .84.

Mastery. A seven-item scale developed by Pearlin and Schooler (1978) was used to measure mastery. It includes items such as "I have little control over the things that happen to me" or "What happens to me in the future mostly depends on me." Respondents were asked to read each statement

and to indicate their agreement by using a scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Items were scored so that higher scores reflected greater personal mastery. Past research has established the validity of this scale (e.g., Hobfoll, London, & Orr, 1988), and the internal reliability for this study was high ($\alpha = .91$).

Depression. The 11-item Depression subscale of the Hopkins Symptom Checklist (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) was used to assess depressive symptomatology. Participants were asked to indicate how distressed they were by feelings of hopelessness, lack of interest, worrying, feeling blue, feeling lonely, blaming themselves, feeling trapped, crying easily, having a poor appetite, thoughts of suicide, and a loss of sexual interest on items ranging from 1 (*not at all*) to 4 (*very much*). The measure was used as a continuous variable by creating a total sum score for each respondent. Cronbach's alpha in this sample was .87.

The psychosocial predictors showed low to moderate correlations with each other. Self-efficacy was positively related to mastery ($r = .40, p < .01$) and social ties ($r = .12, p < .05$) and negatively related to depression ($r = -.31, p < .01$). Mastery was negatively related to depression ($r = -.31, p < .01$) and positively related to social ties ($r = .15, p < .01$). Depression and social ties were not significantly associated.

Functional Status Predictors

Physical functioning. A summary measure of physical performance, based on separate tests of physical ability (timed measures of gait, balance, chair stands, foot taps, and manual ability), was used to assess physical functioning. For example, the measure of gait reflects the amount of time it took the respondent to walk 10 ft. The maximum time taken for gait was 35.8 s. For balance and for five chair stands the maximum was 20.0 s for each, and for manual ability, it was 30.0 s. The maximum time taken to complete 10 foot taps was 30.0 s. Construct validity of this measure was suggested by its correlation with self-reported functional status and changes in health status (e.g., increased morbidity and/or hospitalization have been associated with poorer performance; Seeman et al., 1994).

Cognitive ability. Cognitive performance was assessed with five tasks as first developed by Inouye, Albert, Mohs, Sun, and Berkman (1993; see this source for additional details on total score construction and psychometric properties): (a) the Boston Naming Test (Kaplan, Goodglass, & Weintraub, 1983), (b) a delayed verbal memory test based on incidental recall of naming items from the Boston Naming Test, (c) the delayed Recognition Span Test, (d) items from the Similarities subtest of the Wechsler Adult Intelligence Scale—Revised (WAIS–R), and (e) the copying of geometrical figures adapted from an instrument developed by Rozen, Mohs, and Davis (1984). See Inouye et al. (1993), for details on all of these measures. The subtest scores were summed to create a total cognitive score (ranging from 0 to 89) of overall cognitive functioning. Although each subtest represented a different area of cognitive functioning, scores provided additional descriptive information as a summary statistic analogous to the WAIS–R with its Verbal and Performance subtests.

Somatization. The 12-item Somatization subscale from the Hopkins Symptom Checklist (Derogatis et al., 1974) was also included in the analyses. This scale reflects participants' reports regarding various somatic symptoms such as headaches, pains in the chest, muscle soreness, trouble breathing, and weakness or a heavy feeling in the limbs. Participants indicated how distressed they had been by such symptoms in the past week on a scale ranging from 1 (*not at all*) to 4 (*very much*). Cronbach's alpha in this sample was .83.

Physical functioning was significantly related to cognitive functioning ($r = .22, p < .01$) but not to somatization. Cognitive functioning and somatization were not significantly correlated.

Analysis Plan

The goal of this study was to provide a detailed picture of how different types of social support from different support providers change over time

as a function of gender and individual differences in psychosocial and cognitive functioning. We first calculated zero-order correlations to assess how different types of social support relate to each other both within and between different sources. Next we used a mixed ANOVA to test if levels of support varied by gender, source, and type over time. Finally we used a series of multiple regression analyses to identify the individual difference predictors of changes in social support.

Results

One-way ANOVAs revealed significant gender differences on several of the psychological variables. Women reported higher levels of depression, $F(1, 436) = 12.66, p < .001$; lower levels of emotional support from their spouses, $F(1, 436) = 6.57, p < .05$; and lower levels of instrumental support from their spouses, $F(1, 436) = 10.61, p < .001$. Men reported higher levels of mastery, $F(1, 438) = 4.21, p < .05$; self-efficacy, $F(1, 438) = 7.92, p < .01$; and physical functioning, $F(1, 438) = 27.59, p < .001$, at baseline. At T2, women reported lower levels of emotional support from their spouses, $F(1, 438) = 14.71, p < .001$; and lower levels of instrumental support from their spouses, $F(1, 438) = 21.61, p < .001$.

Associations Among Different Types of Support

The correlations among the different types of support from different sources at both time periods are shown in Table 2. In general, different types of reported social support correlated moderately both within and across sources. For the 1988–1989 data, emotional and instrumental support consistently showed the highest correlations with each other within each source, ranging from .29 ($p < .01$) for support from friends and relatives to .41 ($p < .01$) for support from the spouse. Negative behaviors were significantly negatively correlated with emotional and instrumental support with moderate to low magnitude except in the case of emotional support from the spouse, for which it was higher ($r = -.33, p < .01$), and in the case of emotional support from friends and relatives, for which negative behaviors were not significantly correlated. Comparing support across sources shows that each of the three types of social behaviors showed significant intercorrelations, with associations for negative behaviors showing the highest magnitude. For example, participants who reported high levels of negative behaviors from their children also reported high levels

of negative behaviors from their friends and relatives ($r = .43, p < .01$). The magnitude and patterns of correlations across social relationship measures were similar for both the 1988–1989 and the 1991 data collection points.

Does Social Support Vary by Type, Source, and Gender Over Time?

A mixed ANOVA with one between-subjects variable (gender of participant) and three within-subjects variables (source of social support: spouse, children, friends and relatives; type of social behavior: emotional support, instrumental support, negative behavior; and time: T1, T2) was conducted to compare the different types of social behavior across gender and source over time.

As expected, the ANOVA showed significant within-subjects main effects for source, $F(2, 436) = 203.49, p < .001$; type, $F(2, 436) = 1180.51, p < .001$; and time, $F(1, 436) = 19.96, p < .001$, and a significant between-subjects main effect for gender, $F(1, 436) = 6.51, p < .05$, qualified by a significant Gender \times Source interaction, $F(2, 436) = 10.33, p < .001$; a Time \times Source interaction, $F(2, 436) = 10.33, p < .001$; and a significant Source \times Type of Support interaction, $F(4, 434) = 68.06, p < .001$. Finally, there was also a significant three-way Source \times Type \times Gender interaction, $F(4, 434) = 4.05, p < .01$. Overall, the directions of the effects were consistent with predictions. The data pattern (see Table 1) showed that whereas men received the most emotional support from their wives, the women in the sample said they received the most emotional support from their children and from their friends and relatives, at both time points. Both men and women received the highest levels of instrumental support and negative behaviors from their spouses followed by their children, followed by their friends and relatives. The men’s social support increased over time for all types of support from all sources. The women’s social support increased over time for all types of support from their children and friends and relatives but not from their spouses.

Predicting Changes in Social Support

Hierarchical multiple regression analysis was used to predict changes over time in the types of social support from each of the

Table 2
Correlations Between Different Types of Support From Different Sources

Variable	1	2	3	4	5	6	7	8	9
1. Children–E	—	.27**	-.14**	.33**	.11*	-.06	.12*	.09	-.07
2. Children–I	.34**	—	.05	.17**	.34**	-.08*	.08	.02	-.06
3. Children–N	-.08**	-.08**	—	-.08*	.05	.40**	-.06	.01	.29**
4. Fr/rel–E	.28**	.14**	-.04	—	.27**	-.04	.14**	.05	-.11*
5. Fr/rel–I	.18**	.35**	.05	.29**	—	-.11**	.09	.11*	-.04
6. Fr/rel–N	.03	-.13**	.43**	.00	-.13**	—	-.03	.06	.29**
7. Spouse–E	.26**	-.01	-.08*	.20**	.07	-.03	—	.43**	-.39**
8. Spouse–I	.15**	.13**	.04	.10*	.11*	.05	.41**	—	-.09
9. Spouse–N	-.06	.04	.30**	-.09*	.05	.27**	-.33**	-.11**	—

Note. Cross-sectional data for 1988–1989 are shown below the diagonal; data for 1991 are shown above the diagonal. E = emotional support; I = instrumental support; N = negative support; Fr/rel = friends and relatives. * $p < .05$. ** $p < .01$.

Table 3
Summary of Hierarchical Multiple Regression Analyses Predicting Changes in Social Support

Variable	Spouse			Children			Friends/Relatives		
	E	I	N	E	I	N	E	I	N
Step 1									
T1 Support	.06	.03	.34*	.08	.08	.25	.59***	.34*	.50**
ΔR^2 (%)	29***	16***	31***	10***	10***	24***	10***	17***	19***
Step 2									
Age	.02	-.05	-.10*	-.05	-.10	-.10*	-.01	-.03	-.10*
Gender	-.76**	-.58**	-.32*	-.32	-.11	-.25	.79**	-.03	.02
Income	.03	.08	-.02	.06	-.08	.00	.03	.01	.13*
ΔR^2 (%)	1	4*	2*	0	1	2	3**	0	2*
Step 3									
Physical functioning	.04	-.02	-.08	.05	-.04	.10	.00	.01	-.05
Cognitive ability	.06	.05	.01	-.07	.04	-.02	-.10	-.06	-.09
Somatization	.01	.10	-.03	-.05	.12	-.02	-.03	.02	.04
ΔR^2 (%)	0	0	1	1	1	1	2	1	3*
Step 4									
Social ties	.06	.01	-.07	.13*	.16**	-.01	.12*	.14**	.04
Depression	-.07	-.11	.16**	.02	-.06	.09	-.11*	.03	.17**
Mastery	.01	.04	.04	-.01	-.06	.04	-.02	.02	.03
Self-efficacy	.02	.02	-.07	-.06	.05	-.05	.07	.08	-.01
ΔR^2 (%)	1	1	3*	2	3*	1	3**	3**	2*
Total R^2 (%)	33%	22%	37%	14%	16%	28%	19%	21%	26%

Note. All values are standardized beta weights for the full equation unless otherwise noted. ΔR^2 values represent change in variance accounted for by variables in each step. Nine separate regressions were conducted, one for each type of support from each source. E = emotional support; I = instrumental support; N = negative support. T1 = Time 1 (baseline supportive behavior).
 * $p < .05$. ** $p < .01$. *** $p < .001$.

three sources by using demographic and psychological data.² The predictor variables were entered in the following order: (a) T1 social support or behavior; (b) gender, income, and age; (c) physical functioning, total cognition, and somatization; (d) social ties, depression, mastery, and self-efficacy. Nine regression analyses were conducted (corresponding to the three types of support from each of the three providers), and results are discussed separately for each type of social interaction. A summary of the analyses is shown in Table 3.

Emotional support showed moderate levels of stability with prior levels (i.e., 1988–1989) accounting for 29% (from spouse), 10% (from children), and 10% (from friends and relatives) of the variance in later (i.e., 1991) levels when entered in the first step. Gender accounted for significant portions of additional variance in emotional support from the friends and relatives, $F(3, 433) = 5.28$, $p < .01$, but not from either the spouse or children; specifically, women but not men reported getting more support from friends and relatives over time. The step controlling for physical and cognitive functioning was not significant for emotional support from any source. As predicted, results from the psychological predictors indicated that the people in better psychological condition at T1 were those who got more support over time, especially support from friends and relatives. Specifically, participants who had more social ties and who were less depressed at T1 reported greater increases in emotional support from friends and relatives at T2, $F(5, 432) = 3.74$, $p < .01$.

Instrumental support was more variable over time than emotional support with prior levels (i.e., 1988–1989) accounting for 16% (from spouse), 10% (from children), and 17% (from friends and relatives) of the variance in later (i.e., 1991) levels when

entered in the first step. The sociodemographic variables again showed limited predictive power in regard to changes in instrumental support and accounted only for significant portions of additional variance for support from the spouse, $F(3, 434) = 5.02$, $p < .01$, but not from either the friends and relatives or children. The step controlling for physical and cognitive levels was not significant for instrumental support from any source. As hypothesized, the psychosocial measures entered in the final step significantly predicted additional variance in instrumental support from friends and family, $F(4, 433) = 3.66$, $p < .01$, and from children, $F(4, 433) = 2.39$, $p < .05$, with social ties being the significant predictor. Those with a greater number of social ties reported greater increases in instrumental support from their children and from their friends and relatives at T2, controlling for T1 levels.

Prior levels (i.e., 1988–1989) of negative behaviors accounted for 31% (from spouse), 24% (from children), and 19% (from friends and relatives) of the variance in later (i.e., 1991) levels when entered in the first step. The sociodemographic variables predicted changes in negative behaviors of the spouse, accounting for 2% of additional variance, $F(3, 433) = 2.86$, $p < .05$; and of friends and relatives, accounting for 2% of additional variance, $F(3, 433) = 2.91$, $p < .05$. Women experienced greater increases

² Correlations between the predictors and T1 social support variables are available from the authors. The number ($n = 108$) precludes their consideration here. Interactions between gender and psychosocial variables are also available from the authors. The number ($n = 54$) precludes their consideration here, although we note that the number of significant interactions did not exceed chance level, correcting for number of tests.

in negative behaviors from their spouses over time than did men. Younger participants and those with higher income levels experienced greater increases in negative behaviors from their friends and relatives over time than did older, less affluent participants. The step controlling for physical and cognitive levels was significant in predicting changes in negative behavior only for friends and relatives, $F(3, 433) = 3.53, p < .05$; specifically, participants with lower cognitive functioning reported greater increases in negative interactions. The psychosocial measures entered in the final step significantly predicted additional variance in negative behaviors from friends and relatives, $F(4, 432) = 3.66, p < .01$; and from spouse, $F(4, 432) = 3.10, p < .05$. As predicted, participants who were more depressed at T1 experienced greater increases in negative behaviors from their spouses and friends and families.

Discussion

The present investigation indicates that social support is a dynamic process that ebbs and flows well into later years of adult development. In providing a richly detailed picture of intricacies of support receipt, our results highlight the importance of focusing on both the source and type of support. As predicted, we found that supportive transactions do increase over time and that these changes vary across sources and by type of support. There were also significant gender differences indicating that men and women experience different benefits and gaps in social support.

Changes in Social Support

The present study extends previous work on the dynamic nature of support (e.g., Antonucci, 1991). On the positive side, to the extent that the pruning of networks may have occurred in our sample (as evidenced by the fewer social ties reported at T2), it did not appear to eliminate close others (cf. Carstensen, 1995) and for the most part, did not result in the loss of support. In fact, although the number of reported social ties decreased over time, the amount of emotional and instrumental support reported, for the most part, increased. These findings are consistent with the social convoy model and with socioemotional selectivity theory, in showing that older adults do not lose social support as they age (Antonucci & Akiyama, 1995; Field, 1999; Lang, 2000). The results also revealed that the size of the support network and sources of support were important to social support receipt. Specifically, our results show that people with larger networks were more likely to report increases in emotional support from friends and family and more instrumental support both from friends and family and from their children, presumably because they had worked to maintain their networks.

Unfortunately, individuals who might have benefited most from greater social support because of their poorer baseline psychological functioning did not experience beneficial changes in support over time. Indeed, the opposite was true. Cognitively impaired individuals at T1 reported more negative interactions with friends and extended family at T2. Depressed individuals at T1 reported smaller increases in emotional support and greater increases in negative interactions with the spouse and with friends and relatives at T2. These patterns of support suggest that poorer psychological functioning does not affect all aspects of older adults' networks

evenly or in the same ways. Friends and extended family are not as closely tied to their older friends as spouses and children are. They may, as a result, be less patient or tolerant of cognitive dysfunction and distress and may also have more discretion to reduce their support of troubled individuals, which may be why these relationships especially suffered in the wake of distress and dysfunction. Alternatively, depressed people may withdraw from the discretionary elements of their networks—friends and relatives—whereas such withdrawal may be less practical with immediate family. For whichever reason, spouses may have to bear the brunt of a partner's emotional distress. The spouse's withdrawal of emotional and instrumental support in response to these problems may be untenable, but a spouse may nonetheless feel the need to express his or her irritation and upset to the distressed partner, thus increasing the number of negative interactions experienced over time, as was found in the present results. These findings suggest that a focus on characteristics of individuals that evoke support received from others is useful (e.g., Pierce et al., 1997), as well as a dynamic analysis of how support obtained (or not) from one person may affect the support sought from another network member.

An alternative explanation for the results concerning psychosocial functioning is that some general negative mood state accounts for both the reports of poor functioning and reports of problems in social support. Two factors argue against such an interpretation. First, because the data are longitudinal, a poor mood would have to have been present during both the 1988–1989 and the 1991 data collection time periods. Second, the differentiated reporting of gaps in support and the differences in support provided by different sources argues against this interpretation. A general effect of mood, neuroticism, or some similar third variable would most likely affect reports of low social support generally.

Source, Type of Support, and Gender

The varying patterns of social support across source, type, and gender underscore the need to distinguish among different types of support and between sources of support (e.g., Simons, 1983–1984; Weiss, 1974). In particular, our findings suggest that theories like the functional-specificity model and the task-specificity model may not apply to both genders equally. Although men regarded their spouses as their major source of emotional support and reported receiving more emotional support from their wives than from other network members (e.g., Simons, 1983–1984), this was not the case for women; the women in our sample received significantly higher levels of emotional support from their children, friends, and relatives than from their spouses.

Past studies have suggested that social support (having a lot of social ties) may be particularly beneficial for women (Shye, Mullooly, Freeborn, & Pope, 1995) whereas functional support (i.e., having supportive ties) may be especially beneficial for men (Rowe & Kahn, 1998). The present study suggests that this pattern may be an artifact of the lesser support that women receive from their husbands. Women may have to draw on children, friends, and relatives to get the emotional support they need if it is not forthcoming from the spouse. Even though the women in this sample reported fewer ties than men did, the support received from their broader social ties was greater (e.g., emotional support from chil-

dren, friends, and relatives), and thus, a large number of social ties may be especially beneficial for women.

Distinguishing among different types of support is also important to a full understanding of older adult networks. As predicted, we found that emotional support showed moderate stability over time. This stability is likely beneficial because fluctuating social transactions can negatively influence the person's trust and confidence in relationships that could correspondingly negatively affect mental health (Lang et al., 1997). If older adults perceive a relatively steady flow of emotional support, this assurance may contribute to better physical and psychological health (e.g., Krause, 1994; Lang & Carstensen, 1998). Although not predicted, the receipt of instrumental support also showed moderate increases over time, suggesting that well-maintained networks and close others may serve a range of supportive functions.

Limitations

Like most studies of social support, the present study is limited by assessing only one perspective. Because social support is a transaction between two or more people, the information provided might be biased by individual characteristics that filter perceptions. A second limitation is that the study focused only on individuals with living spouses. The support transactions among older adults and their children, friends, and relatives may be quite different if the individual does not have a living spouse. Third, the results are limited by the fact that the sample was preselected to be healthy, and thus their social support needs may not be as great as those of older people with health problems. This may explain why physical functioning, cognitive ability, and somatization were not significant predictors of either emotional or instrumental support. The low levels of changes in functioning could also account for the fact that mastery and self-efficacy were not significant predictors of changes in support. A less healthy older adult cohort might have experienced greater problems that their individual differences in psychosocial resources might more readily address. A fourth potential limitation is imposed by the wording of the support items, for example, "loved and cared for" and "listens to worries." Although the specific items used are similar to those of other support inventories, the specific content of the items inherently limits what aspects of each type of social support have been assessed.

Conclusions

In summary, the present study provides a picture of the dynamic nature of social support in a healthy aging cohort over time and across different sources. It especially highlights the need to examine gender differences in social support gaps and receipt and the fact that older women have support needs that are not met by their spouses. We also found that those in good psychological health were well supported and appeared to receive increased support over time. However, instead of receiving support, those who were cognitively impaired or depressed initially were more likely to report problems and potential gaps in their support. Further studies of support and efforts to provide it should be especially directed to individuals with low levels of psychosocial functioning.

References

- Antonucci, T. C. (1991). Attachment, social support, and coping with negative life events in mature adulthood. In E. M. Cummings, A. L. Greene, & K. H. Karraker (Eds.), *Life-span developmental psychology: Perspectives on stress and coping* (pp. 261–276). Hillsdale, NJ: Erlbaum.
- Antonucci, T. C., & Akiyama, H. (1987). Social networks in adult life and a preliminary examination of the convoy model. *Journals of Gerontology*, *42*, 519–527.
- Antonucci, T. C., & Akiyama, H. (1995). Convoys of social relations: Family and friendships within a life span context. In R. Blieszner & V. H. Bedford (Eds.), *Handbook of aging and the family* (pp. 355–371). Westport, CT: Greenwood Press.
- Antonucci, T. C., & Jackson, J. S. (1987). Social support, interpersonal efficacy, and health: A life course perspective. In L. L. Carstensen & B. A. Edelman (Eds.), *Handbook of clinical gerontology* (pp. 291–311). New York: Pergamon Press.
- Berkman, L. F., Vaccarino, V., & Seeman, T. (1993). Gender differences in cardiovascular morbidity and mortality: The contribution of social networks and support. *Annals of Behavioral Medicine*, *15*, 112–118.
- Blazer, D. G., Burchett, B., Service, C., & George, L. K. (1991). The association of age and depression among the elderly: An epidemiologic exploration. *Journals of Gerontology: Biological Sciences and Medical Sciences*, *46A*, M210–M215.
- Blazer, D. G., Hughes, D. C., & George, L. K. (1992). Age and impaired subjective support: Predictors of depressive symptoms at one-year follow-up. *Journal of Nervous and Mental Disease*, *180*, 172–178.
- Bosse, R., Aldwin, C. M., Levenson, M. R., Spiro, A., III, & Mroczek, D. K. (1993). Change in social support after retirement: Longitudinal findings from the normative aging study. *Journals of Gerontology: Psychological Sciences and Social Sciences*, *48B*, P210–P217.
- Bowling, A. (1994). Social networks and social support among older people and implications for emotional well-being and psychiatric morbidity. *International Review of Psychiatry*, *6*, 41–58.
- Cantor, M. H. (1979). Neighbors and friends: An overlooked resource in the informal support system. *Research on Aging*, *1*, 434–463.
- Carstensen, L. L. (1987). Age-related changes in social activity. In L. L. Carstensen & B. A. Edelman (Eds.), *Handbook of clinical gerontology* (pp. 222–237). New York: Pergamon Press.
- Carstensen, L. L. (1991). Socioemotional and selectivity theory: Social activity in life-span context. *Annual Review of Gerontology and Geriatrics*, *11*, 195–217.
- Carstensen, L. L. (1995). Evidence for a life-span theory of socioemotional selectivity. *Current Directions in Psychological Science*, *5*, 151–156.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, *54*, 165–181.
- Connidis, I. A., & Davies, L. (1990). Confidants and companions in later life: The place of family and friends. *Journal of Gerontology*, *45*, 141–149.
- Cornoni-Huntley, J., Brock, D. B., Ostfeld, A., Taylor, J. O., & Wallace, R. B. (Eds.). (1986). *Established populations for epidemiologic studies of the elderly, resource data book* (NIH Publication No. 86-2443). Bethesda, MD: National Institutes of Health.
- Coyne, J. C., & DeLongis, A. (1986). Going beyond social support: The role of social relationships in adaptation. *Journal of Consulting and Clinical Psychology*, *54*, 454–460.
- Crohan, S., & Antonucci, T. C. (1989). Friends as a source of social support in old age. In R. G. Adams & R. Blieszner (Eds.), *Older adult friendships: Structure and process* (pp. 129–146). Newbury Park, CA: Sage.
- Cummings, W. E., & Henry, J. (1961). *Growing old, the process of disengagement*. New York: Basic Books.
- Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L.

- (1974). The Hopkins Symptoms Checklist (HSCL): A self-report symptom inventory. *Behavioral Science*, 19, 1–15.
- Felton, B. J., & Berry, C. A. (1992). Do the sources of the urban elderly's social support determine its psychological consequences? *Psychology and Aging*, 7, 89–97.
- Field, D. (1999). A cross-cultural perspective on continuity and change in social relations in old age: Introduction to a special issue. *International Journal of Aging and Human Development*, 48, 257–261.
- Flaherty, J., & Richman, J. A. (1989). Gender differences in the perception and utilization of social support: Theoretical perspectives and an empirical test. *Social Science and Medicine*, 28, 1221–1228.
- Fratiglioni, L., Wang, H. X., Ericsson, K., Mayten, M., & Winblad, B. (2000). Influence of social network on occurrence of dementia: A community-based longitudinal study. *Lancet*, 355, 1315–1319.
- Gotlib, I. H., & Whiffen, V. E. (1992). The interpersonal context of depression. In W. H. Jones & D. Perlman (Eds.), *Advances in personal relationships* (Vol. 3, pp. 177–206). London: Kingsley.
- Havighurst, R. J., & Albrecht, R. E. (1953). *Older people*. New York: Longmans Green.
- Helgeson, V. S., & Cohen, S. (1996). Social support and adjustment to cancer: Reconciling descriptive, correlational, and intervention research. *Health Psychology*, 15, 135–148.
- Hobfoll, S. E., London, P., & Orr, E. (1988). Mastery, intimacy, and stress resistance during war. *Journal of Community Psychology*, 16, 317–331.
- House, J. S., Umberson, D., & Landis, K. (1988). Structures and processes of social support. *Annual Review of Sociology*, 14, 293–318.
- Inouye, S. K., Albert, M. S., Mohs, R., Sun, K., & Berkman, L. F. (1993). Cognitive performance in a high-functioning community-dwelling elderly population. *Journal of Gerontology*, 48, M146–M151.
- Kahn, R. L., & Antonucci, T. C. (1980). Convoys over the life course. Attachment, roles, and social support. In P. B. Baltes & O. G. Brim (Eds.), *Life-span development and behavior* (pp. 254–283). New York: Academic Press.
- Kahn, R. L., & Antonucci, T. C. (1984). *Social supports of the elderly: Family/friends/professionals* (Publication No. AG01632). Bethesda, MD: National Institute on Aging.
- Kaplan, E., Goodglass, H., & Weintraub, S. (1983). The Boston Naming Test and scoring booklet. In H. Goodglass & E. Kaplan (Eds.), *The assessment of aphasia and related disorders* (2nd ed., appendix pp. 1–8). Philadelphia: Lea and Febiger.
- Katz, S. C., Ford, A. B., Moskowitz, R. W., Jackson, B. A., & Jaffe, A. W. (1963). Studies of illness in the aged—The Index of ADL: A standardized measure of biological and psychosocial function. *Journal of the American Medical Association*, 185, 914–919.
- Krause, N. (1994). Stressors in salient social roles and well-being in later life. *Journal of Gerontology: Psychological Sciences*, 49, P137–148.
- Kriegsman, D. M. W., Penninx, B. W. H. J., & van Eijk, J. T. M. (1995). A criterion-based literature survey of the relationship between family support and incidence and course of chronic disease in the elderly. *Family Systems Medicine*, 13, 39–68.
- Lang, F. R. (2000). Endings and continuity of social relationships: Maximizing intrinsic benefits within personal networks when feeling near death. *Journal of Social and Personal Relationships*, 17, 155–182.
- Lang, F. R., & Carstensen, L. L. (1994). Close emotional relationships in late life: Further support for proactive aging in the social domain. *Psychology and Aging*, 9, 315–324.
- Lang, F. R., & Carstensen, L. L. (1998). Social relationships and adaptation in later life. In A. S. Bellack & M. Hersen (Eds.), *Comprehensive clinical psychology* (pp. 55–72). Oxford, England: Pergamon Press.
- Lang, F. R., Featherman, D. L., & Nesselroade, J. R. (1997). Social self efficacy and short-term variability in personal relationships: The MacArthur Successful Aging Studies. *Psychology and Aging*, 12, 657–666.
- Lansford, J. E., Sherman, A. M., & Antonucci, T. C. (1998). Satisfaction with social networks: An examination of socioemotional selectivity theory across cohorts. *Psychology and Aging*, 13, 544–552.
- Litwak, E. (1985). *Helping the elderly: The complementary roles of informal networks and formal systems*. New York: Guilford Press.
- Miller, S. S., & Cavanaugh, J. C. (1990). The meaning of grandparenthood and its relationship to demographic, relationship, and social participation variables. *Journals of Gerontology: Psychological Sciences*, 45, P244–P246.
- Morgan, D. L. (1989). Adjusting to widowhood: Do social networks really make it easier? *The Gerontologist*, 29, 101–107.
- Nagi, S. Z. (1976). An epidemiology of disability among adults in the United States. *Milbank Memorial Fund Quarterly*, 6, 493–508.
- Newsom, J. T., & Schulz, R. (1996). Social support as a mediator in the relation between functional status and quality of life in older adults. *Psychology and Aging*, 11, 34–44.
- Pearlin, L. I., & Schooler, C. (1978). Some extensions of “The structure of coping”: Reply to comments by Marshall and Gore. *Journal of Health and Social Behavior*, 20, 202–205.
- Peters, G. R., Hoyt, D. R., Babchuk, N., Kaiser, M., & Iijima, Y. (1987). Primary-group support systems of the aged. *Research on Aging*, 9, 392–416.
- Pfeiffer, E. (1975). A short portable mental status questionnaire for the assessment of organic brain deficit in elderly patients. *The American Geriatric Society*, 23, 433–441.
- Pierce, G. R., Lakey, B., Sarason, I. G., Sarason, B. R., & Joseph, H. (1997). Personality and social support processes: A conceptual overview. In G. R. Pierce, B. Lakey, I. G. Sarason, & B. R. Sarason (Eds.), *Sourcebook of social support and personality* (pp. 3–19). New York: Plenum Press.
- Reifman, A. (1995). Social relationships, recovery from illness, and survival: A literature review. *Annals of Behavioral Medicine*, 17, 124–131.
- Rodin, J., & McAvay, G. (1992). Determinants of change in perceived health in a longitudinal study of older adults. *Journal of Gerontology: Psychological Sciences*, 47B, P373–P384.
- Rook, K. S. (1984). The negative side of social interaction: Impact on psychological well-being. *Journal of Social and Personality Psychology*, 46, 1097–1108.
- Rook, K. S., & Schuster, T. L. (1996). *Handbook of social support and the family*. New York: Plenum Press.
- Rosow, I., & Breslau, N. (1966). A Guttman health scale. *Journal of Gerontology*, 21, 556–559.
- Rowe, J. W., & Kahn, R. L. (1987). Human aging: Usual and successful. *Science*, 237, 143–149.
- Rowe, J. W., & Kahn, R. L. (1998). *Successful Aging: The MacArthur Foundation Study*. New York: Random House.
- Rozen, W., Mohs, R., & Davis, R. (1984). A new rating scale for Alzheimer's disease. *American Journal of Psychiatry*, 141, 1356–1364.
- Sarason, B. R., Sarason, I. G., & Gurung, R. A. R. (2001). Close personal relationships and health outcomes: A key to the role of social support. In B. R. Sarason & S. W. Duck (Eds.), *Personal relationships: Implications for clinical and community psychology* (pp. 15–43). New York: Wiley.
- Schuster, T. L., Kessler, R. C., & Aseltine, R. H. (1990). Supportive interactions, negative interactions, and depressed mood. *American Journal of Community Psychology*, 18, 423–438.
- Schwarzer, R., & Leppin, A. (1992). Social support and mental health: A conceptual and empirical overview. In L. Montada, S. H. Filipp, & M. J. Lerner (Eds.), *Life crises and experiences of loss in adulthood* (pp. 435–458). Hillsdale, NJ: Erlbaum.
- Seeman, T. E., & Berkman, L. F. (1988). Structural characteristics of social networks and their relationship with social support in the elderly: Who provides support. *Social Science and Medicine*, 26, 737–749.
- Seeman, T. E., Berkman, L. F., Blazer, D., & Rowe, J. W. (1994). Social ties and support and neuroendocrine function: The MacArthur Studies of Successful Aging. *Annals of Behavioral Medicine*, 16, 95–106.

- Shumaker, S. A., & Hill, D. R. (1991). Gender differences in social support and health. *Health Psychology, 10*, 102–111.
- Shye, D., Mullooly, J. P., Freeborn, D. K., & Pope, C. R. (1995). Gender differences in the relationship between social network support and mortality: A longitudinal study of an elderly cohort. *Social Science and Medicine, 41*, 935–947.
- Simons, R. L. (1983–1984). Specificity and substitution in the social networks of the elderly. *International Journal of Aging and Human Development, 18*, 121–139.
- Taylor, S. E., Klein, L. C., Lewis, B., Gruenewald, T., Gurung, R. A. R., & Updegraff, J. (2000). The female stress response: Tend and befriend not fight or flight. *Psychological Review, 107*, 411–429.
- Unger, J. B., McAvay, G., Bruce, M. L., Berkman, L., & Seeman, T. (1999). Variation in the impact of social network characteristics on physical functioning in elderly persons: MacArthur Studies of Successful Aging. *Journal of Gerontology, 54*(B), S1–S7.
- U.S. Bureau of the Census (2000). *Population projections*. Retrieved June 15, 2002, from <http://www.census.gov/population/www/projections/popproj.html>
- Weiss, R. S. (1974). The provisions of social relationships. In Z. Rubin (Ed.), *Doing unto others* (pp. 17–26). Englewood Cliffs, NJ: Prentice-Hall.

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