

## Patterns of Network Change: A Longitudinal Study of Friendships of Elderly Women<sup>1</sup>

By: Rebecca G. Adams, PhD<sup>2</sup>

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### **Abstract:**

Old age is a period during which people have an opportunity to alter their friendship patterns. The data were in-depth interviews and observations of white, non-married, elderly women who lived in a middle-class suburb in 1981 and mail questionnaires and telephone interviews with 42 of the same women in 1984. Three independent dimensions of network evolution were identified. The patterns of change on these dimensions varied across middle-class status groups, but the members of each group tended to have reversed their middle-aged friendship patterns.

Key Words: Elderly women's friendship, Network change, Longitudinal study, Status groups

### **Article:**

Although some important studies on the friendships of older people have been conducted in recent years (Babchuk, 1978; Cohen & Rajkowski, 1982; Matthews, 1983), none of them have dealt directly with the topic of network evolution. Friendships are more vulnerable to change than are other social relationships because participation is voluntary (Adams, 1986b). Thus the study of friendship necessitates the use of a developmental perspective.

There have been good reviews of the literature on changes in friendship patterns over the life course (Brown, 1981; Tesch, 1983). In general, the literature suggests that people in their later years are at risk of losing friends. Older people are likely to experience a change in their social lives when their health declines, when their income decreases as a result of retirement, and when they are widowed. Brown (1981) has observed that declining capacities may force people "into a stage of retrenchment, in which one's network shrinks to a few 'good, old friends' " (p. 43). These findings are consistent with the widely held view of aging as a process of the loss of choice (Goldman, 1971) or of decreasing life space (Rowles, 1978).

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<sup>2</sup> Assistant Professor, Department of Sociology, University of North Carolina at Greensboro, Greensboro, North Carolina 27412.

Baum and Baum (1980) have contrasted the view of aging as a restrictive process with the view of old age as an opportunity for new experiences. Lowenthal et al. (1975), for example, have suggested that healthy individuals with adequate financial resources often find old age as a period during which they have time to reinvest in friendship. This observation parallels Atchley's (1985) discussion of the "honeymoon"

phase of retirement, a stage during which recently retired people try to do everything they never had to do before. Brown (1981) has observed, however, that this period of reinvestment in friendship does not last long because of age-related declines.

Without exception, the studies reviewed by Brown (1981) and Tesch (1983) were cross-sectional. It is possible that the differences observed between elderly and middle-aged people are attributable to differences in cohort membership rather than to aging. In other words, older people may always have had less extensive, more intensive friendship networks than the middle-aged people to whom researchers have compared them. This possibility makes it important to study friendship network change longitudinally.

Another problem is that in this literature friendship patterns are discussed in terms of general tendencies or average changes. This literature also is focused on unidimensional changes in the number of friends and intensity of relationships. It is rare for researchers to discuss different types of friendship, let alone for them to discuss types of friendship pattern changes or differences in these types of changes across categories of older people. Despite the fact that there is evidence that cross-sectional friendship patterns vary by race, class, and sex, to give a few examples, researchers have only discussed age-related declines as predictors of change in these patterns.

This article departs from previous literature on the friendships of older people. First, rather than report on a cross-sectional study in which the friendships of people of different ages are compared, the author examined data from a longitudinal study of friendship network evolution. Second, rather than treat the change in friendship networks as unidimensional, three independent dimensions of friendship network evolution are identified. Third, variations in patterns of friendship network evolution across status groups are discussed. Finally, it is argued that old age is typically a period during which people have an opportunity to alter their earlier friendship patterns rather than a period during which choice is restricted. This argument is not intended to discount the observation that age-related declines operate as constraints on the friendship activities of some people.

### *Data and Methods*

The data are from a longitudinal study of 42 female, white, non-married, non-institutionalized residents of Oak Park, a middle-class suburb of Chicago. In 1981, the author personally interviewed 70 respondents using a standardized instrument that included many open-ended questions. The interviews were tape recorded, making it possible to check quotations for accuracy. Also, careful observational notes were made at various senior gathering places and, because the researcher lived in the community throughout the period of data collection, many of the respondents and their friends were observed shopping or doing volunteer work. In addition, some respondents called or wrote after the interview to elaborate on something they had said, to inform the researcher of recent events in their lives, or to check on the study's progress.

In 1984, 42 of the original 70 (60%) women responded to both a mail questionnaire and a telephone interview. Because 19 did not respond to the follow-up questionnaire due to death or illness, 82% (42 of 51) of all potential respondents participated in the follow-up.

Although the original sample was not a probability one, it appeared to reflect the elderly women of the community (Adams, 1985). As shown in Table 1, the distributions of the demographic variables in the original and follow-up samples did not differ significantly. The findings presented here should, however, be viewed as suggestive rather than as conclusive.

In this research, no a priori definition of friendship was used (Adams, 1986a). Each respondent defined friendship for herself, listed her friends according to her own definition, and then answered a series of questions about each of them. Asking questions about each friend separately made it possible to use aggregate measures of friendship activity rather than the global measures which are often used. For example, rather than asking the respondent how many friends she had, the number of people she had listed as friends was counted. The percentage of all friends who lived outside of the respondent's town, the percentage of all friends who were emotionally distant, network density (Kapferer, 1969), and the total frequency of interaction with friends per year were all constructed from questions asked about each friend separately. (See Hess, 1972, and Cohen and Rajkowski, 1982, for discussions of the methodological and analytical advantages of aggregate measures of friendship characteristics.)

In the 1984 mail questionnaire, the respondents listed their current friends. By comparing these lists to the 1981 lists, lists were constructed of continuing friends, ex-friends, and new friends for each respondent. The telephone interview included a set of questions about the members of each category. Then, change scores for each variable were constructed by subtracting the 1981 score from the 1984 score. The classic problem of extreme scores being able to change only in one direction between times of measurement was not an issue in this research. Either the variables were ratio level with no fixed upper limit or all of the respondents who had extreme scores in 1981 had different scores in 1984.

### *Results*

As shown in Table 2, the average characteristics of the women's networks changed between 1981 and 1984. Because the women had acquired more new friends than they had eliminated or lost, they averaged more friends in 1984. In other ways, however, the average respondent's friendship network had

**Table 1. 1981 Demographic Characteristics of the Respondents Interviewed in 1981 and Those of the Ones Interviewed Both Times**

Characteristic	Time 1 ( <i>n</i> = 70)		Both Times ( <i>n</i> = 42)	
	<i>n</i>	%	<i>n</i>	%
Age in years:				
62-64	3	4.3	3	7.1
65-74	30	42.9	19	45.2
75-84	23	32.9	13	31.0
85 or more	14	20.0	7	16.7
Education in years:				
0-8	12	17.4	5	12.2
9-11	11	15.9	8	19.5
12	15	21.7	8	19.5
13-15	20	29.0	12	29.3
16 or more	11	15.9	8	19.5
Income in dollars:				
Less than 5,000	23	41.1	13	36.1
5,000-9,999	19	33.9	15	41.7
10,000 or more	14	25.0	8	22.2
Marital status:				
Widowed	46	65.7	29	69.1
Divorced	9	12.9	5	11.9
Separated	1	1.4	0	0.0
Never married	14	20.0	8	19.1

**Table 2. Average Characteristics of Friendship Networks in 1981 and 1984 (*n* = 37)**

Network	1981	1984
Variable	$\bar{X}$ ( <i>sd</i> )	$\bar{X}$ ( <i>sd</i> )
Number of friends	10.0 (6.3)	12.2 (9.9)
New friends	—	7.6 (7.8)
Ex-friends	—	5.0 (4.5)
Total frequency of interaction with friends per year	68.2 (62.9)	47.5 (55.0)
Percentage of friends who were emotionally distant	60.4 (26.4)	66.2 (23.0)
Percentage of friends who lived out of town	55.8 (26.3)	48.2 (25.4)
Friendship network density	22.4 (21.9)	40.8 (27.9)

tended to contract. The average respondent saw friends less frequently in 1984 than in 1981, felt emotionally distant from a higher percentage of her friends, lived closer to a higher percentage of her friends, and had a denser network.

### Dimensions of Network Change

Describing average network change, however, is misleading. Three independent dimensions of network change emerged from a principal components analysis with a varimax rotation. Bartlett's Test of sphericity was significant ( $p < 0.001$ ) and the Kaiser-Meyer-Olkin measure of sampling adequacy was acceptable (0.66) after the number of new friends was eliminated from the set of variables. The eigenvalues were all larger than one, and the three-factor model explained 82% of the variance. Fewer than half of the residuals in the reproduced correlation matrix were greater than 0.05, which suggested that the model fit the data adequately.

The first dimension of change, as shown in Table 3, was a continuum from a contraction to an expansion of the entire friendship network, with high positive loadings on an increase in the total frequency of interaction and on an increase in number of friends and a high negative loading on number of ex-friends. The second dimension of change was a continuum from an expansion to a contraction of the local friendship network, with a high positive loading on an increase in the percentage of friends who were non-local and a high negative loading on an increase in friendship network density. The third dimension of change was a continuum from the emotional intensification to the emotional weakening of the network, with a high positive loading on an increase in the percentage of friends who were emotionally distant.

### **Patterns of Network Change**

A given network could have changed in more than one of the ways described above. For example, a woman's local network could have contracted at the same time that her relationships became emotionally weaker. Theoretically, there could have been myriad patterns of combinations of levels of changes on the three dimensions.

In order to identify groups of cases with similar patterns of network change, the three sets of factor scores were used as the basis for a divisive hierarchical cluster analysis (Norusis, 1985). The average linkage within groups method was used for combining cases into clusters. The average distance between all cases in a resulting cluster was thus as small as possible. The measure of distance between any two cases was the sum of the absolute differences of the values for all three factors. The three cluster solution was the most satisfactory.

Table 4 shows the partial correlations between membership in each of the 3 binary clusters and a variety of respondent characteristics, controlling for age. The 3 clusters represent different middle-class status groups. The members of the 3 clusters can be described as "members of high society" (40.5 percent), "pillars of the community" (32.5 percent), and "marginal women" (27.0 percent), respectively.

The members of high society came from smaller families than the other women. Those who had been married, had been married at a younger age. They were more likely to belong to cultural clubs such as literary societies and museum organizations. There was a slight tendency for their incomes to be higher, and they tended to feel that their financial circumstances were better than those of other people their age. Although there was a slight tendency for them to have moved more during their lives, they had lived in their current residences longer. They tended to wear higher quality clothing and to be more likely to look young for their age.

The pillars of the community came from larger families than the other women. Those who had been married had more children. The ones who had worked had been employed locally. They belonged to more clubs, especially church and fraternal organizations. They were more likely to feel that their financial circumstances were worse than others their age, perhaps because they were comparing their circumstances to the members of high society rather than to those of the marginal women. They tended to have moved less frequently during their lives, especially since they had reached the age of 45 years. They responded more quickly to questions when interviewed and displayed a slight tendency to be more interested in life than the other women.

The marginal women belonged partially to the middle-class and partially to the lower class. The previously married marginal women had been older when they were first married and had been married more often than the other previously married women. The marginal women belonged to fewer organizations and were less likely to belong to every type of organization than the other women. They had lower incomes and were more likely to use social services. They had moved more in recent years and had lived in their current residences for shorter periods of time. They tended to respond more slowly to questions, to appear to be less interested in life, to

**Table 3. Factor Loadings for Friendship Network Change Variables  
(n = 37)**

Friendship Network Change Variable	Factors		
	Expansion of Entire Network	Contraction of Local Network	Overall Emotional Weakening of Network
Increase in total frequency of interaction	0.90	-0.11	-0.18
Number of ex-friends	-0.87	0.21	-0.06
Increase in number	0.86	0.05	0.23
Increase in percentage non-local	-0.15	0.85	-0.17
Increase in density	0.04	-0.82	-0.24
Increase in percentage emotionally distant	0.05	0.04	0.97

*Note.* The eigenvalues were 2.5, 1.4, and 1.0, respectively. Eighty-two percent of the variance was explained.

be less neatly dressed, to wear poorer quality clothing, and to look older than their age.

The changes that took place between 1981 and 1984 in the networks of the members of all 3 clusters tended to represent reversals of their middle-aged patterns. Although the data on these reversals only spans the time between the 1981 and 1984 interviews, the process had probably begun before the first time of measurement. Table 5 shows the relationships between each independent dimension of friendship network change and cluster membership.

Between 1981 and 1984, the entire networks of the members of high society had contracted, and there was an overall emotional strengthening of their relationships. In other words, these women did not mention many of their 1981 casual friends as friends in 1984. This culling process can be better understood in the context of the lives these women had led. Although some of these women had been married and others had not, they had one thing in common. During their middle years, they had maintained casual friendships for business purposes, either their

**Table 4. Partial Correlations, Controlling for Age, of Respondent Characteristics with Cluster Membership**

Respondent Characteristics <sup>a</sup>	Cluster Membership		
	Member of High Society (n = 15)	Pillars of the Community (n = 12)	Marginal Women (n = 10)
<b>Family:</b>			
Age at Marriage	-0.28*	0.04	0.26*
# Marriages	-0.02	-0.21	0.24*
# Children	-0.17	0.23*	-0.06
# Siblings	-0.23*	0.30**	-0.06
<b>Organizations:</b>			
# Organizations	-0.05	0.35**	-0.31**
# Cultural Clubs	0.26*	-0.16	-0.12
# Church Organizations	0.01	0.31**	-0.33**
# Fraternal Organizations	-0.03	0.26*	-0.25*
# Service Organizations	0.07	0.14	-0.22*
<b>Finances:</b>			
Income	0.17	0.09	-0.29**
Give up things they want	-0.25*	0.18	0.09
Financial circumstances better than others their age	0.38**	-0.25*	-0.19
More likely to use social services	-0.17	-0.11	0.30*
<b>Residential Mobility:</b>			
Total # Moves	0.19	-0.23*	0.03
# Moves since age 45	-0.17	-0.30**	0.50***
# Years in current residence	0.23*	0.11	-0.37**
<b>Interviewer Ratings:</b>			
Quickness of response	-0.01	0.27*	-0.27*
Apparent interest in life	0.07	0.21	-0.30**
Neatness of dress	0.20	0.14	-0.36**
Quality of clothing	0.22*	0.07	-0.31**
Youthfulness relative to chronological age	0.32**	-0.06	-0.28*

<sup>a</sup>Respondent characteristics were included in this table if they were significantly related to membership in at least one cluster.

\*Significant at the 0.10 level.

\*\*Significant at the 0.05 level.

\*\*\*Significant at the 0.01 level.

**Table 5. Pearson's Correlations of Friendship Network Change Factors with Cluster Membership (n = 37)**

Friendship Network Change Factor	Cluster Membership		
	Members of High Society	Pillars of the Community	Marginal Women
Expansion of Entire Network	-0.52***	0.43**	0.12
Contraction of Local Network	0.09	0.57***	-0.71***
Overall Emotional Weakening of Network	-0.60***	0.29*	0.36*

\*Significant at the 0.05 level.

\*\*Significant at the 0.01 level.

\*\*\*Significant at the 0.001 level.

husband's or their own. As one retired member of high society observed:

"I was too limited while I was working. I had to maintain relationships with my colleagues. I didn't have time for meaningful friendships."

Another member of this cluster who had been married commented:

"[Since my husband passed away], I have more time. When you're married, you are busy with your husband and his business friends. Now I'm footloose and fancy free. I have time for real friendship."

In contrast, the entire networks of the pillars of the community had expanded, but, relative to their non- local friendships, their local friendships had decreased in incidence. During most of their lives, these women had been tied to the local community by their children, husbands, or jobs. For them, old age represented freedom from these responsibilities and an opportunity to explore life outside of the neighborhood. As one pillar of the community observed:

"I have the same number of friends now [that I had before my husband died], but they are different ones. I'm no longer tied up in couple things. I can travel without worrying about children."

In writing about how lucky it was that the mail survey had reached her, another member of this cluster observed:

"I just received your letter. You timed it just right, because I just returned from [a western state]. I hope you will call soon, because I expect to spend a couple months in [a midwestern state] to see all my buddies over there. My son says he never sees me now that I don't have any responsibilities."

Neither of these women mentioned many of their local 1981 friends as friends in 1984. Their new friends were from outside of the community.

The local networks of the marginal women had expanded, and, as a result of the addition of casual local friends, the overall emotional intensity of their networks had decreased. In middle age, these women had not had the time or resources to establish contact with more than a handful of very close friends. Oak Park had a very well developed system of services for older adults, including eight recreation centers and a nutrition center. For many of the marginal women, the senior centers represented their first opportunity to meet a wide variety of people and to expand their networks:

"There are 150 people there [at the Nutrition Center]. I know their problems. I find some way to help them. When I was working, I didn't know I had such a good sense of humor. I seem to hit it off with people at the Center."

"[During the] past year and a half, [I] have been very active. I am chairman of the Committee in the [age-segregated] building where I live. . . I support the weekly Park District Senior Recreation Drop-In Center in the building. I go on some of their day trips. I've made more friends since my divorce than I ever had before."

### *Discussion*

Although developmental models have been used, either explicitly or implicitly, in most previous studies of friendship in the later years, the theoretical frameworks and available data have been limited. The theoretical frameworks have included the assumptions that aging is synonymous with decline and loss and that change is unidimensional. The data have been cross-sectional. These limitations have, in combination, produced an image of the changes in the friendships of older people that the results of the current study bring into question. The image is a familiar one to us all: Age-related physical declines and social losses cause the friendship networks of older people to contract. Finally, older people are left almost alone, their social lives limited to interactions with a few loyal friends and family members.



The problem with previous studies is a matter of conceptualization and interpretation rather than one of the results themselves. Researchers have repeatedly shown that middle-aged people, on the average, have more extensive social lives than older people. The common explanation for this difference, though it ignores possible cohort effects, also seems plausible: Middle-aged people are in better health and have larger role portfolios than older people and thus have more opportunities for social interaction. The problem arises when this central tendency is interpreted as a general phenomenon that happens to some degree to all people as they age. Added to this problem of over-generalization is the one caused by the limited way in which friendship has been conceptualized. A single aspect of friendship, quantity, has been emphasized to the exclusion of other aspects of form and content.

Friendship network evolution is a complex, multidimensional process. The dimensions of change identified in this data were: (1) a continuum from the contraction to the expansion of the entire network, (2) a continuum from the expansion to the contraction of the local network, and (3) a continuum from the emotional intensification to the emotional weakening of the network.

Not everyone's networks change in the same way. Specifically, status group membership affected the course of friendship network evolution. The members of each status group, high society, pillars of the community, and marginal women, tended to move towards a reversal of their earlier friendship patterns. The members of high society saw old age as an opportunity to cherish a few close relationships. The pillars of the community saw it as a chance to explore new relationships outside of the confines of their neighborhood. The marginal women took advantage of the senior centers to expand their networks and to participate in what Kurth (1970) has called "friendly relations," perhaps for the first time in their lives.

These findings suggest that inquiries about the relationship between aging and choice need to be refocused. Most of the current gerontological literature emphasizes the restrictions on choice imposed by physical decline and social losses such as retirement and widowhood. The elimination of social role obligations can, however, be a liberating experience. Not only are there fewer obligations, but there are fewer sets of normative expectations. Although members of the status groups experienced different changes in their friendship networks, they all tended to be liberated from their previous patterns. This process of liberation may occur in other areas of life as people enter old age.

Although the data presented here are limited in some ways, in other ways they offer an important opportunity to study network change. Without quantitative data, some patterns may have gone unnoticed. Without qualitative data, the complexities of the process may have remained more mysterious than they are now.

Before any firm theoretical conclusions can be reached, there needs to be larger longitudinal study of network change so that simultaneous controls can be used. Others (Cohen et al., 1985; Ward, 1985) have made this observation. A large longitudinal study would make it possible to confirm the patterns of network change reported here and to specify further their connection with aging processes.

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