

Network Dynamics in Later Life

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This chapter describes recent developments in gerontological network research. After a brief introduction, we distinguish three main theoretical approaches: convoy, social exchange, and individual choice. Each of these approaches addresses networks from a dynamic perspective, explaining changes in network size and composition. We discuss recent findings in the light of the three approaches, which can be seen as focusing at a different analytical level. Finally, we consider issues that remain unresolved.

Network research in gerontology mainly developed in the 1980s, in the wake of findings showing the importance of social support for several physical and mental health measures (Berkman and Syme, 1979; Caplan, 1974). The term "social networks" was used earlier in gerontology to describe groups of people interacting in face-to-face situations (Lowenthal and Robinson, 1976: 444), focusing on the older adults' ties to society through participation in networks and social roles (Rosow, 1967). The central issues and concepts in subsequent gerontological network research increasingly reflect the social support approach, which links personal relationships to health and wellbeing. Networks are considered a source of social support, and the focus is on disentangling the ways in which networks, relationships, and support are beneficial to ageing individuals. House and Kahn (1985) were among the first to conceptually distinguish social networks and social relationships from social support, thus separating the structural properties of networks and relationships from their content and functions. "Social networks" refers to the availability of relationships in terms of opportunities and constraints in the rela-

tionship structure (e.g., size, stability). As the network mainly involves personal relationships, we prefer to speak of "personal networks." "Social support" indicates the helpful content of relationships (e.g., type, quantity). Most commonly, instrumental types of support are distinguished from emotional and expressive supports. Both network and support can affect wellbeing and health in several ways, which we will not discuss here. The distinction between network and support resolved much discussion, although there remain diverging approaches to the concept of social support and its relation to personal networks. Rather than reiterate this well-documented debate (Antonucci, 1990), we want to focus on recent advances in network theory and research.

We distinguish three theoretical approaches to personal networks in later life. The convoy approach deals with the antecedents and consequences of life-course changes at the network level. Social exchange involves a group of theories stating that the continuation of relationships requires some kind of reciprocity. Individual choice pertains to theories focusing on the individual level of choices and strategies regarding one's personal network. Each approach focuses on dynamic aspects of networks, proposing mechanisms to explain network change. This makes them well suited for addressing network changes involved in the ageing process. Advances in longitudinal data collection increasingly allow for empirical evaluation of the theoretical propositions. In the following sections, each of the approaches is described in more detail, and confronted with research outcomes on changes in network size and composition.

As with any classification, we had to make simplifications that do not always do full justice to the original works. We hope this is outweighed by the new perspective on network dynamics in later life.

THE CONVOY MODEL

The convoy model is a lifespan developmental model of social networks and social support, based on role and attachment theories (Antonucci and Akiyama, 1987; Kahn and Antonucci, 1980). Each person is thought of as moving through life surrounded by a convoy: a set of people to whom he or she is related through the exchange of support. The convoy is conceived as three concentric circles, representing different levels of closeness to the focal person. The closer relationships are determined more by attachment, the relationships in the outer circle are determined most by role requirements. Role-guided relationships, such as with co-workers, can be important and affectionate, but they are primarily tied to the role setting, which generally limits them in duration and support content. The closer relationships – which can also be role relationships – usually are more stable, and include the exchange of many types of support. The convoy is evaluated theoretically in terms of adequacy of support, individual performance and wellbeing (Kahn and Antonucci, 1980; Antonucci, 2001). For the purpose of this chapter, we limit ourselves to the convoy and its determinants.

The model distinguishes convoy structure, which we call network, and convoy functions, which we call support. The lifecourse is a basic determinant of convoy structure, and encompasses changes in both personal properties (individual needs and assets) and situational characteristics (role change) (Antonucci and Akiyama, 1987). This finds expression in two general theoretical propositions on network change in later life. First, networks in late life reflect both the role changes and changes in personal properties associated with growing old, and the roles and personal properties associated with earlier life stages. Second, role changes have a stronger effect on role relationships than on the closer relationships. The general expectation is that role loss in later life leads to a decrease in role relationships, and a growing importance of family relationships in the network (Antonucci and Akiyama, 1987).

Longitudinal research generally confirms that older adults focus on their closer relationships with time (Morgan *et al.*, 1997; van Tilburg, 1998), although cross-cultural comparisons yield mixed results (Antonucci *et al.*, 2001; Wenger, 1997). There is strong turnover among the less close relationships. Research among siblings suggests that there is no substitution between relationship types (White, 2001), e.g. lost friends are only replaced by new friends or not replaced at all (Jerome and Wenger, 1999). A general decline in total network size has not been demonstrated. Networks only get smaller at very old age (Baltes and Mayer, 1999), mainly due to health changes.

Effects of specific role changes on network size and composition are sparingly researched longitudinally. Retirement results in a decrease in relationships with co-workers, while the total network size remains equal (van Tilburg, 2003), which supports the convoy model. The recently widowed appear to focus on their closest relationships, and make new friends after a few years (Ferraro *et al.*, 1984), thus responding to changes in needs. Network effects of new roles, like grandparenthood or volunteering, have not been researched.

Roles and changes earlier in life also affect the size and composition of the network in later adulthood. The childless (Dykstra and Hagestad, 2004) have slightly smaller networks than people with adult children, but they also have more friends and other non-kin relationships throughout old age. A long-term follow up on divorce suggests that people who remain single and those with a negative evaluation of the divorce retain smaller networks after the divorce than the other divorcees (Terhell *et al.*, in press). These long-term effects corroborate the importance of the lifespan perspective of the convoy model.

THE EXCHANGE APPROACH

Social exchange theory (Blau, 1964) assumes that people constantly evaluate their relationships, based on the comparability of their support exchanges. People prefer balanced support, i.e. they give support with the expectation of receiving something in return at some time. Once a return is received, the balance of the relationship is restored. This balance is classified as reciprocity (Gouldner, 1960). The

principle of balanced exchanges underlies all relationships, whether between close friends or acquaintances, and kin or non-kin (Uehara, 1995).

Direct reciprocity refers to returning the same type of support within a limited period of time, guided by the economic principle of fair trade. Other types of reciprocity may exist. First, *type-crosswise reciprocity* pertains to exchanges across support types: a relationship in which the older adult is over-benefited, i.e., receives more than (s)he gives, with instrumental support may be balanced by over-benefiting the other with emotional support. Second, *time-delayed reciprocity* covers a larger time span, and might be extended over the lifecourse. Third, more people might be involved in the exchanges. *Indirect reciprocity* occurs when support is returned through an intermediate party. When network members give support without expecting it to be necessarily returned in the same proportion and from the same people, one speaks of *generalized reciprocity* (Wentowski, 1981).

Reciprocity is a factor in the continuation of relationships. If the receiving party is not able to return the support and it is clear that this will not change in the future, the exchange of support may decline. For the under-benefited person it is more rewarding to give support in a balanced relationship where a return can be expected if it is needed. The over-benefited party might view the imbalance as an unwanted situation of dependence. The latter may occur when poor health limits older adults in returning support, either immediately or in the long run. At the end, unbalanced relationships might be terminated. However, over-benefiting of needy older adults can be normatively accepted and even desirable (Gouldner, 1960).

Various studies have shown a strong and positive correlation between giving and receiving support (Liang *et al.*, 2001; Litwin, 1998; Morgan *et al.*, 1991; van Tilburg and Broese van Groenou, 2002). In contrast to a study by Klein Ikkink and van Tilburg (1998), Boerner and Reinhardt (2003) observed type-crosswise reciprocity: the level of instrumental support provided was contingent on both instrumental and affective support received. Van Tilburg (1998) observed an age differential effect: there was balance in instrumental support given and received among younger adults, whereas older adults counterbalanced the receipt of instrumental support by giving

emotional support. This trend might be related to decreasing physical capacities and worsening health among the oldest: these changes limit the capacities to give instrumental support, but not the provision of emotional support, while increasing the need for instrumental support.

Imbalance results in the decline of supportive exchanges with older adults, in particular within less close relationships, but not in the termination of a relationship (Klein Ikkink and van Tilburg, 1998). Klein Ikkink and van Tilburg (1999) found that the chance of a relationship continuing decreased when older adults are over-benefited with emotional support. However, relationships where older adults are over-benefited with instrumental support had a higher chance of being continued. Among neighbors, direct reciprocity in instrumental support exchange partly explained continuation of the relationships (Thomése *et al.*, 2003).

Within all forms of reciprocity, support investments can be viewed as an act of self-interest since the provider will receive support from other network members whenever he needs it (Uehara, 1995). The evidence outlined above supports the idea that the dynamic in receiving and providing support ensures continuity in social interactions. However, exchanges among people cannot be seen exclusively as self-interested behavior. Mills and Clark (1982) distinguished exchange relationships from communal relationships, in which exchanges are driven by the partners' need for support, and continuation of the relationship depends on mutual concern for each other's wellbeing. In a long-term study on older parent – adult child relationships (Silverstein *et al.*, 2002), both relationship types were found. We assume that a mix of exchange and communal orientation characterizes personal relationships.

INDIVIDUAL CHOICE APPROACH

Several theories view changes in personal networks as a result of individuals' choices and strategies. In these theories the personal network is usually perceived as a means to reach highly valued goals, such as social status or wellbeing. We discuss two of these theories: the socio-emotional selectivity theory, and the notion of networks as "social capital." Both theories consider the individual as a proactive manager of the social world, but differ with respect to what

“drives” the individual: emotional engagement or rational choice.

Socio-emotional selectivity theory

The socio-emotional selectivity theory (Carstensen, 1992; Carstensen *et al.*, 1999; Lang, 2001) addresses age-related decrease in social interaction in later life. Social interaction is theoretically motivated by two goals: information seeking and emotional regulation. Perceived time horizon differentiates the importance attached to both goals; when the time horizon is limited (as in old age), the short-term goal (emotional regulation) becomes more important than the long-term goal (information seeking). As a result, older people disengage from peripheral relationships, as the emotional engagement with core network relationships is more rewarding.

Longitudinal studies confirm the selective decrease in network size over a period of four to five years (Lang, 2000; Lansford *et al.*, 1998). However, this selective withdrawal did not differ by age group. More important than age per se is the time perspective: those who perceived their future time as limited were more likely to prioritize emotionally meaningful goals, and this was, in turn, associated with greater satisfaction and support from the network (Lang and Carstensen, 2002). Lang (2000) showed that people feeling near to death deliberately discontinued their less close relationships, reduced the emotional closeness with many others, and increased the emotional closeness with core network members like kin and friends.

Social capital

Where socio-emotional selectivity focuses on individual motivations, emotional regulations, and perceptions of individual time, theories of social capital focus on structural opportunities and relationship specific investments as guiding the selection of network relationships. The notion of social capital is applied at both the individual level (Bourdieu, 1986) and the community level (Putnam, 2000). At the individual level, of most interest in this chapter, the network serves as a resource to the individual (Lin, 2001).

Comparable to exchange theory, the central notion is that people invest in others to gain

future access to different resources. Personal networks of friends, kin, and neighbors may provide support, whereas relationships within formal networks, such as voluntary organizations, may provide useful information, or access to jobs and other networks (Baum and Ziersch, 2003). Different from exchange theory, the whole network is taken into account. The decision to (dis)invest in a relationship is theoretically based on present costs and expected (future) benefits, the availability of high-quality alternative relationships in the network, and on the connectedness of the relationship to the network (Rusbult, 1983). Several Dutch studies used this investment-model to explain changes in personal networks following important life events, including retirement (Van Duijn *et al.*, 1999). The results show that people are more likely to discontinue relationships with high costs (e.g., long traveling time) and low benefits (e.g., little received support), in particular when they have a large network and the relationship is not strongly connected to other relationships. It was also evident that these relationship and network characteristics are better predictors of relationship change than the structural opportunities or personality characteristics of the individual.

CONCLUSION

There are clearly interrelations between the three approaches to network change in later life we have discussed. The theory of socio-emotional selectivity fits in with the convoy model, as it specifies how ageing people respond to changes in their needs and opportunities. And the same economic principles underlie investment models and exchange theory. However, the approaches should not be seen as interchangeable. Research that addresses network dynamics shows the importance of distinguishing between analytical levels. Mechanisms at the network level do not automatically apply to changes at the relationship or individual levels. Late life changes in network size clearly demonstrate this. At the relationship level there are considerable changes, especially among the more role-based relationships, but total network size remains relatively stable until very old age. Role changes, personal changes, and socio-emotional considerations can predict shifts in the composition and size of the network, but which relationship will remain and which

not is explained better by the reciprocity in each relationship separately, and the individual's investment considerations. Reciprocity explains relationship dynamics, whereas individual considerations are important in predicting how much effort older adults will put into specific relationships, which leads to changes at the relationship and network levels. For a full understanding of network change it is necessary to obtain information at each of the levels.

To complete the picture, a sociological analysis of network dynamics implies a fourth level, that of the broader social context. The focus on the personal network as a potential for social support tends to overlook the place of the network as an intermediate between individual and societal processes. The availability of and need for personal relationships at different life stages is linked to the ordering of the lifecourse and the organization of modern societies at large. This is most clear in discussions on the availability of informal care in relation to welfare state changes: what people need from their personal relationships is in part determined by what they get from societal sources. The notion of role change also reminds us that important late life changes, such as retirement or emptying the nest, reflect institutional and cultural formations of later life. Shifts in gender roles and destandardization of the lifecourse have an impact on changes in later life and their consequences for personal networks (Bernard *et al.*, 2001). Although there is a long-standing debate on the consequences of modernization for personal networks (Allan, 2001; Wellman, 1979), societal dynamics are seldom addressed in gerontological network research. In addition to the growing body of longitudinal network research, more comparison of cohorts and societies can give insight into the interdependence of personal networks and their social context.

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