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TARGETING SOCIAL SUPPORT:  
AN ASSESSMENT OF THE CONVOY MODEL OF SOCIAL SUPPORT

by

Linda J. Henderson

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Targeting Social Support: An Assessment of The Convoy Model of Social Support" submitted by Linda J. Henderson in partial fulfillment of the requirements for the degree of Master of Arts.

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## **ABSTRACT**

Recent reviews of social support research reveal little agreement on how to conceptualize or measure social support. The Convoy Model of Social Support that dominates network studies of the social support transactions of the elderly addresses these debates by treating network structure and social support as conceptually and empirically distinct. In this thesis I assess The Convoy Model as an approach to the study of social support by using an analytic strategy informed by social network analysis and data from a 1993 Alberta study of the social networks and social support transactions of older adults (65+). I find that the operationalization of the "convoy" limits the identification of supportive and supported others to support transactions among strong, intimate ties and excludes important support transactions among weaker ties. I discuss the implications of these findings for network studies of the social support transactions of the elderly and for the conceptualization and operationalization of social support more generally.

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## CHAPTER 1

### INTRODUCTION

In the mid 1970s epidemiologists like Cobb (1976), Caplan (1974) and Cassel (1976) proposed that supportive social relationships had a positive impact on health. Since that time, the concept of social support has been of increasing interest to social scientists. However, reviews of this work (e.g., by Thoits, 1982; Turner, 1983; Depner et al., 1984; House and Kahn, 1985; Pearlin, 1985; Tardy, 1985, Barrera, 1986; House et al., 1988; Vaux, 1988; Pearlin, 1989; Antonucci, 1990; Sarason et al., 1990) reveal that there is little agreement on how to conceptualize or measure social support.

A number of conceptual approaches to the study of social support have been used. The most common include: (1) the social integration approach which defines social support in terms of the existence or quantity of social relationships (e.g., Peters et al., 1987; Cantor, 1991); (2) the social network approach which is concerned with the structure of social relationships (e.g., Gottlieb, 1981; Wellman 1981; Wellman et al., 1988); (3) the social intimacy approach which concentrates on the quality of social relationships (e.g. Lowenthal and Haven, 1968; Connidis and Davies, 1992); (4) the functional nature conceptualization which looks at the content of social relationships (e.g.,

Jacobson, 1986); (5) the perceptual approach which emphasizes the cognitive experience of being supported by others (Heller and Swindle, 1983, Turner, 1983; Wethington and Kessler, 1986); and (6) the structural-functional approach which emphasizes both the structure and the relational content of social relationships (eg., Thoits, 1984; Antonucci and Akiyama, 1987a). Approaches to the measurement of social support have been equally diverse, ranging from the identification of a confidant (e.g., Lowenthal and Haven, 1968; Connidis and Davies, 1992) to multi-item support scales and indices (e.g., Barrera, 1981; McCallister and Fischer 1978).

A number of researchers (e.g., Gottlieb, 1981; Thoits, 1982; Barrera, 1986; Vaux, 1988) have argued that approaches to the study of social support that focus exclusively on the existence, quantity, structure or quality of social relationships deal with social support only indirectly. For these researchers, such aspects of social relationships are proxy indicators of "one of the important contents" of social relationships (House et al., 1988:302, emphasis in original). They stress that social support must be treated as conceptually and empirically distinct from concepts such as social relationships and/or social networks.

Recently, some researchers who advocate social network analysis as a more sociological approach to the study of social support have argued that the concepts and methods of

social network analysis can be used to maintain these crucial conceptual and empirical distinctions (eg., House et al., 1988; Pearlin, 1989; Wellman and Wortley, 1990; Haines and Hurlbert, 1992). For these researchers, social support is conceptualized as "a resource channelled to and from individuals by the structure of their social environments" (Haines and Hurlbert, 1992:255). The personal or egocentric network approach is seen as particularly relevant because it "focuses attention on how the properties of personal networks affect the flow of resources to focal individuals" (Hall and Wellman, 1985:27). An individual's social network is thus identified as the structure within which specific functions, such as the exchange of social support, take place. These researchers argue that they can use the measurement techniques of network analysis first to identify an individual's social network and then to look at the kinds of resources, including social support, that flow within this network.<sup>1</sup>

The ideas of these network analysts are consistent with the structural-functional approach to the study of social support. This approach combines concern for both the structure and function of social relationships by identifying separate structural and functional properties of an individual's "social support system" (Thoits, 1982:148). This social support system is defined as the subset of persons from an individual's overall social network upon

whom he or she relies for support (Thoits, 1982:148). The structural properties of the support system involve the pattern of social relationships that make up the system and the functional properties are defined in terms of the support exchanged by system members (Thoits, 1982:148).

The structural-functional approach to the study of social support has become dominant in network studies of the support transactions of the elderly (Haines, 1993). Here the exemplar is The Convoy Model of Social Support. First proposed by Kahn (1979), and later elaborated by Kahn and Antonucci (1980, 1981), Antonucci (1985a, 1985b) and Kahn, Wethington and Ingersoll-Dayton (1987), this model highlights the importance of the structure and function of "social networks over the life course" (Antonucci, 1985b:99). Kahn (1979:84, emphasis in original) explains:

The key concept that we propose for studying the process of aging and other life-course changes is the convoy. By choosing this metaphorical term we imply that each person can be thought of as moving through life surrounded by a set of significant other people to whom that person is related by giving or receiving of social support. An individual's convoy at any point in time thus consists of the set of persons on whom he or she relies for support and those who rely on him or her for support. These two subsets may overlap, of course; there are relationships in which one both receives and gives support, although not all relationships are symmetrical in this sense. (emphasis in original).

To operationalize their concept of convoy, Kahn and Antonucci (1980, 1981) have developed a diagram resembling a target. They claim that this device can be used to

distinguish the members of an individual's "convoy" or support network from his or her overall larger set of social relationships. Once these members are identified, additional information is collected about these individuals and used to construct measures of both the structure of the support network and the support transactions among the convoy members. Although not explicitly identified as such by Kahn and Antonucci, this procedure follows what has become the standard technique used by network analysts to collect data in egocentric network studies: the name generator-name interpreter sequence.

Kahn and Antonucci's (1980) approach to conceptualizing and operationalizing the "convoy" represents one of the earliest attempts to connect social network analysis to the study of social support and aging. It has become the standard approach in network studies of the social support transactions of the elderly (Haines, 1993). Their conceptual definition of the convoy clearly indicates that "membership in a person's convoy is limited to people who are important to him or her in terms of *social support*" (Kahn and Antonucci, 1980:273, emphasis added). However, as the discussion that follows makes clear, the operational definition of the convoy, as reflected in the target diagram, identifies convoy members in terms of "closeness" and "importance" (Antonucci, 1985a:26), and not in terms of social support. The Convoy Model rests on an implicit



assumption that the people an individual feels close to, or who are important to him or her, are the same people with whom that individual exchanges social support. This assumption needs to be tested empirically, especially in light of recent research findings that not all strong and intimate relationships are supportive and that less intimate relationships can also be sources of social support (e.g., Schuster and Butler, 1989; Wellman and Wortley, 1990; Haines and Hurlbert, 1992).

The goals of my thesis are to assess The Convoy Model of Social Support as a way to study the social support transactions of the elderly and, through this assessment, to contribute to the ongoing debates on how to conceptualize and measure social support. To conduct my assessment I use an analytic strategy informed by the concepts and methods of social network analysis to generate a series of predictions derived from the core ideas of The Convoy Model. I then test these predictions using data from The Cochrane Network Study--a current study of the social networks and social support transactions of older adults (65+).

To prepare the way for this assessment, Chapter 2 provides a brief overview of the concepts and methods of social network analysis. I focus particularly on the name generator-name interpreter sequence, the importance of the issue of boundary specification and the consequences of using alternative name generators in studies of personal

networks. In Chapter 3, I use this information as a framework to interpret the conceptual arguments and operational procedures of The Convoy Model of Social Support. After providing an outline of the conceptual and operational definitions of the structural and functional components of The Convoy Model, I discuss two sets of predictions--Convoy Structure Predictions and Convoy Function Predictions--that can be derived from these two components. I end this chapter with a description of the analytic strategy that I use to test these predictions.

In Chapter 4, I describe The Cochrane Network Study (CNS) and how I used information from this study to implement my analytic strategy and construct measures to test the two sets of Convoy Model Predictions. I report and discuss the results of these prediction tests in Chapter 5. Finally in Chapter 6, I summarize my assessment of The Convoy Model of Social Support as an approach to the study of the social support transactions of the elderly and discuss the implications of this assessment for studies of social support transactions of the elderly and for the broader conceptual and methodological debates surrounding the concept of social support.

## CHAPTER 2

### STUDYING SOCIAL NETWORKS:

#### THE NAME GENERATOR-NAME INTERPRETER SEQUENCE

Over the last two decades, the use of the social network approach in sociological research has steadily increased (Burt, 1984; Marsden, 1990). Building on ideas from social anthropology and sociometry, it defines social structure in terms of the "patterns of specifiable relations (ties) joining social units (nodes) including both individual actors and collectivities" (Marsden, 1990:435-436). The emphasis is on how social structures affect individual action and differentially allocate resources, including social support, among network members.

Social support researchers who are interested in using the concepts and methods of social network analysis to study the personal or egocentric networks of their respondents collect what is "variously known as egocentric, personal, or survey network data" (Marsden, 1990:438). Collecting survey network data involves departures from standard survey research. Respondents (egos) are asked for information about themselves and the people who make up their networks (alters). The standard procedure for collecting these data is the name generator-name interpreter sequence (Marsden, 1990:443). "Name generator" questions (Burt, 1984:296) are asked first to elicit the names of respondent's network

members. Then "name interpreter" questions (Burt, 1984:297) are asked to provide additional details about these network members. Name interpreter questions can provide information (1) about the attributes of the alters (e.g., sex, marital status, educational attainment), (2) about the nature of the relationship between ego and each alter (e.g., frequency of contact, emotional closeness, relationship length or duration) and (3) about the relationships between alters (Marsden, 1990:441). Egocentric network studies that are framed at the dyadic level (i.e., only looking at the relationships between ego and each of his or her alters) use the first two kinds of name interpreter information.

Haines (1993) points out that the use of the name generator-name interpreter sequence to collect survey network data separates this network approach from two other approaches found in studies of the elderly that use the term "network". In her analysis of "network" studies published in five gerontological journals between 1980 and 1993, she found that some network studies use the word "network" as a metaphor. These studies do not collect or analyze survey network data with the name generator-name interpreter sequence but simply use terms like "family networks" or "friendship networks" to describe the importance of these groups in the lives of the elderly (Haines, 1993:5) (e.g., Hess and Saldo, 1985; Shore, 1985). Other network studies use what Haines (1993:5) calls "quasi-network data". These

studies do not use name generators to identify individual alters but focus instead on group or categories of persons such as friends, neighbours or family (Haines, 1993:5) (e.g., Kohen, 1983; Morgan, 1989). Name interpreter questions are not usually included in studies using quasi-network data.

One of the central issues in the collection of survey network data is boundary specification (Marsden, 1990:439). Because egos may have hundreds of alters in their overall social networks, researchers must decide how to place the appropriate boundaries around this larger set of relationships in order to identify only the subset of relationships that are of interest. These limits or constraints are built into the name generators.

Three kinds of name generator constraints have commonly been used in egocentric network studies (van Sonderen et al., 1990; Campbell and Lee, 1991; Haines, 1993). The first is a constraint of role-relation. Respondents are asked to name spouses, neighbours, friends, siblings and others who are related to them in terms of some specific role (e.g., Peters et al., 1987). Name generators with this kind of constraint are assumed to identify alters who are related to ego in terms of role, such as a network of friends, or kin, or colleagues.

The second kind of constraint is an intimacy constraint. Respondents are asked to name individuals to

whom they feel emotionally close. Examples of name generator questions with this kind of constraint are "Who do you discuss important matters with?" and "Who are the people that you feel are closest to you outside your home?" (e.g., Burt, 1984; Wellman and Wortley, 1990). Name generators with intimacy constraints are assumed to identify intimates -- alters who are emotionally close to ego.

The third kind of constraint is one of relational content or exchange. Respondents are asked to name individuals with whom they engage in "valued interactions" (von Sonderen et al., 1990:105), such as the exchange of "varied kinds of instrumental and emotional support" (Campbell and Lee, 1991:203). Examples of name generator questions with this kind of constraint are "Who might you be able to borrow a car from or get a ride from if your car was broken down?" (Wilcox, 1981:112) and "Who would you ask to care for your home--pick up the mail or water the plants--if you were going out of town for a while?" (Jones and Fischer, 1978:45). Name generators with relational content constraints are assumed to identify alters who are related to ego in terms of those specific contents of social relationships, such as by the provision of instrumental support as in the examples above.

Marsden (1990:439) points out that researchers must give careful attention to the issue of boundary specification (i.e., choosing the appropriate name generator

to identify the relationships of interest) because "omission of pertinent elements or arbitrary delineation of boundaries can lead to misleading or artifactual results." This point is especially relevant for my assessment of The Convoy Model of Social Support. The issue of boundary specification and its corollary, the consequences of using alternative name generators, provide the framework for both my interpretation and analysis of The Convoy Model.

### CHAPTER 3

#### THE CONVOY MODEL OF SOCIAL SUPPORT

Kahn and Antonucci (1980:254) developed The Convoy Model of Social Support as "an explanatory framework linking social support and well-being throughout the life-cycle". Drawing on insights from both role theory and theories of attachment, they visualized the individual as surrounded from early childhood by "a variety of network members who are sources of social support" (Antonucci, 1985b:97). Over the life course, the shifting composition of this "convoy" reflects the ways in which an individual's social relationships develop and change (Antonucci, 1985b:97). Unlike in role sets where individuals and their social relationships are defined by positions in organizations, families and other social structures, the interpersonal relationships of the convoy are "defined by the giving and receiving of social support" (Kahn, 1979:86). It is assumed "that the Convoy of Social Support helps the individual to adapt and develop over the life course, and thus has an important influence on well-being" (Antonucci, 1985b:101).

The earliest explications of The Convoy Model of Social Support (i.e., Kahn 1979, Kahn and Antonucci, 1980, 1981) presented it as a "life-course perspective" for understanding social support (Kahn and Antonucci, 1980:256). They included a series of propositions which outlined



hypothesized relationships (1) between personal and situational characteristics (such as age, race, residence, and demands of work, family and other roles) and convoy characteristics (such as the number of convoy members and the similarities among convoy members), and (2) between these convoy characteristics and the successful performance of life roles (Kahn, 1979:84; Kahn and Antonucci, 1980:269-270). It is of interest to note that none of these hypothesized relationships was ever the focus of empirical tests. From the first description of The Convoy Model in 1979, the emphasis was placed on the core concept of the "the convoy as a personal network of social support" (Kahn and Antonucci, 1980:277).

According to Kahn and Antonucci, this personal network has two components: convoy structure and convoy function (Antonucci, 1985b:100). Convoy structure is defined as "network composition over the life course" (Antonucci, 1985b:100). Kahn (1979:87) credits the work of Barnes (1972, cited in Kahn, 1979) as influencing his choice of network indicators of the structural properties of the convoy [e.g., size, homogeneity (the similarities among members), and duration (length of the relationship between members)]. The "actual support[s] given, received, or exchanged by members of the Convoy" within the convoy structure are identified as "convoy functions" (Antonucci, 1985b:100).

Convoy structure and convoy function have been the

focus of the most theoretical elaboration (e.g., Kahn 1979; Kahn and Antonucci, 1980, 1981; Antonucci, 1985a, 1985b) and empirical investigation (e.g. Levitt et al., 1985-1986; Antonucci and Israel, 1986; Antonucci and Akiyama, 1987a, 1987b; Kahn et al., 1987; Ingersoll-Dayton and Antonucci, 1988; Antonucci and Jackson, 1990; Antonucci and Akiyama, 1991). Since 1985, when Antonucci (1985a, 1985b) included convoy function in a separate box in her schematic representation of the Convoy Model, the words "The Convoy Model of Social Support" have come to mean "convoy structure" and "convoy function". Throughout the remainder of this thesis the words "Convoy Model" refer to these two components.

### **CONVOY STRUCTURE AND CONVOY FUNCTION**

Kahn and Antonucci (1980:273, 1981:397) suggest that the structure of an individual's convoy can be represented conceptually with the diagram of concentric circles that is presented in Figure 1. The smallest circle (P) represents the individual or "focal person" whose convoy is being identified. The "convoy members are shown in the three concentric circles around P" (Kahn and Antonucci, 1981:396). *"Membership in P's convoy is limited to those people who are important to him or her in terms of social support and does*

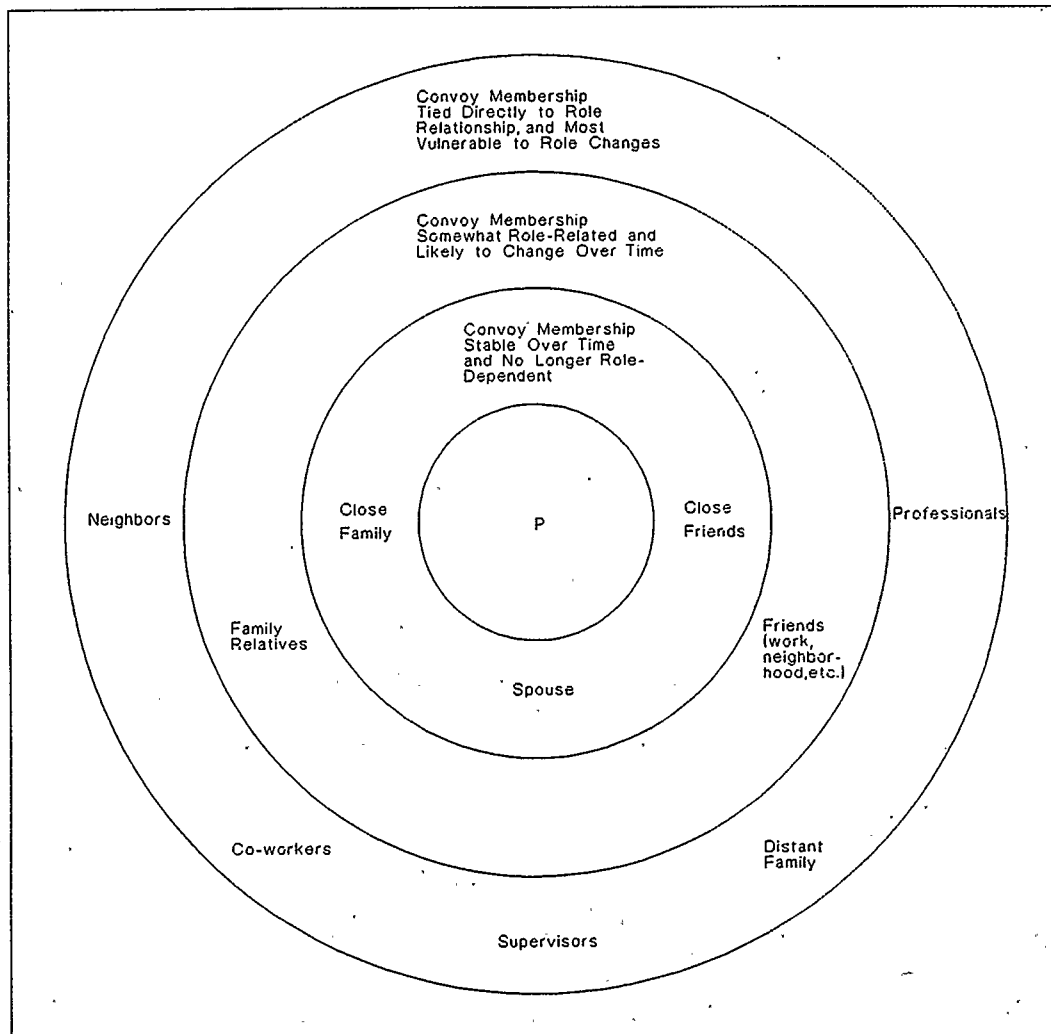


Figure 1: Conceptual Representation of the Convoy  
Source: Kahn and Antonucci, 1981:397

not include all of the people known to P or who merely function in some role in relation to P" (Kahn and Antonucci, 1981:396, emphasis added).

Convoy members in the inner circle are those individuals to whom the focal person feels very close. According to Kahn and Antonucci, they are P's most important support providers and recipients. "Spouse and family members are likely to be included here, but their location in this first circle is determined by the supportive quality of their relationship with P and not the role or familial relationship" (Kahn and Antonucci, 1980:274). These relationships tend to remain fairly stable throughout the years, despite changes in job or residence. "Indeed, geographical proximity or frequency of direct contact may not be a good indicator of membership in this closest of convoy circles. An old friend who now lives far away and is seen only rarely may nevertheless be the person to whom P turns in a crisis" (Kahn and Antonucci, 1980:274).

Convoy members in the second circle are less close to P than inner circle members but are still important support providers and recipients. They may be family, friends or co-workers, but their supportive interaction with P is only somewhat dependent on the roles that they fill in his or her life (Kahn and Antonucci, 1980:274). "Times, places, and subjects of interaction are outside the boundaries of the role. However, the relationship . . . may not be maintained

if either member loses the role" through, for example, divorce, moving or job change (Kahn and Antonucci, 1980:274). Therefore, membership in this ring is likely to be less stable over time than inner circle membership, "and substitutions may be readily made as new people fill the roles vacated by others" (Kahn and Antonucci, 1980:274).

Third circle convoy members are "least close to P, but have nevertheless been identified as sources of support" (Kahn and Antonucci, 1980:273). These individuals may be supervisors, co-workers or neighbours "whose relationship to P has achieved some level of importance beyond formal role requirements" (Kahn and Antonucci, 1980:273). When compared with the other two circles, third circle membership tends to involve the most limited support exchanges, be the least stable over time, and be most vulnerable to role change (Kahn and Antonucci, 1980:273). Changes of job or residence may sever these relationships.

Kahn and Antonucci (1981:398) allow that "people differ in the number of persons with whom they have supportive relationships and in the degree of closeness that characterizes those relationships". But they argue that they "think of the convoy-defining dimensions in absolute rather than relative terms; thus inclusion anywhere in a person's convoy signifies importance in terms of social support and inclusion in the inner circle signifies a very close relationship, not merely closer than another".

According to Kahn and Antonucci (1980:278), the convoy structure is the "delivery system" for convoy functions--the "actual support given, received, or exchanged by members of the Convoy" (Antonucci, 1985b:100). They define social support as "interpersonal transactions" involving one or more of "aid, affect, or affirmation" (Kahn, 1979:85; Antonucci, 1985b:96). Kahn (1979:85) elaborates:

By affective transactions we mean expressions of liking, admiration, respect or love. By transactions of affirmation we mean expressions of agreement, or acknowledgement of the appropriateness or rightness of some act or statement of another person. ... Finally we include as social support those transactions where direct aid or assistance is given.

Kahn and Antonucci have used their conceptual ideas about convoy structure and convoy function to develop a procedure for measuring both components that is consistent with the standard name generator-name interpreter sequence for collecting survey network data. This procedure is described next.

#### **MEASURING CONVOY STRUCTURE AND CONVOY FUNCTION**

To generate the names of an individual's convoy members, Kahn and Antonucci have developed the network diagram presented in Figure 2. This diagram is similar in appearance to their conceptual representation of the convoy

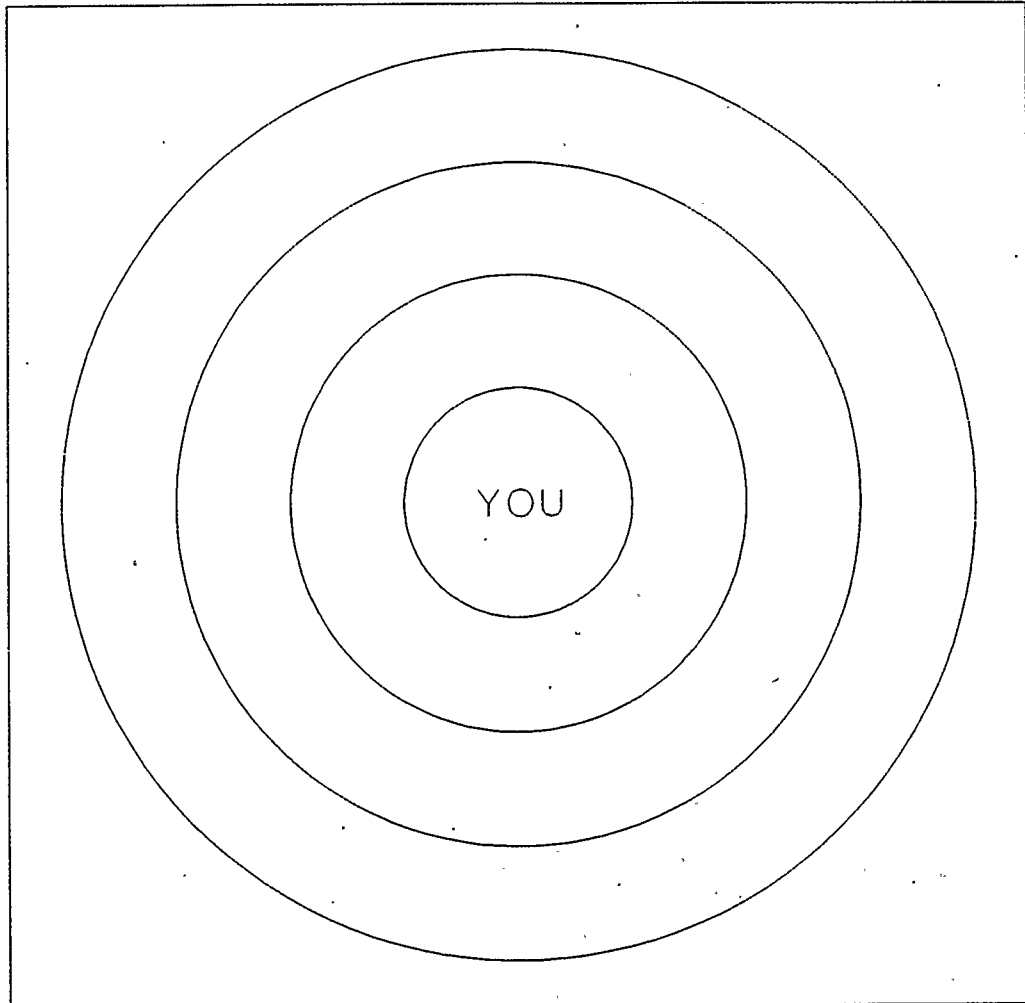


Figure 2: Network Diagram  
Source: Antonucci, 1985a:100

and consists of a series of concentric circles. The central circle (labelled "YOU") represents the convoy's focal person. Because this diagram resembles a target, I will follow Morgan et al. (1991:S280) and refer to this device as a "target diagram".

Kahn and Antonucci used this diagram to generate the names of the convoy members of their respondents in their 1980 national survey, Social Networks in Adult Life, which they conducted from the Institute for Social Research at the University of Michigan. Also known as the "Supports of the Elderly" (SSE), this study examined the "social networks and social supports" of "a nationally representative sample of 718 men and women over 50 years of age" (Antonucci and Jackson, 1990:182). At the beginning of the one hour face-to-face interview, each respondent was shown a picture of the target diagram and read the following instructions:

I want to begin by asking you some questions about the people who are important in your life right now. To get it straight, I'm going to ask you to help me draw a diagram which we will refer to as your personal network. This is you in the middle (SHOW BLANK DIAGRAM TO R). The first circle would include only the one person or persons that you feel so close to that it's hard to imagine life without them. People you don't feel quite that close to, but who are still important to you would go in the second circle. People to whom you feel less close but who are still important to you, would go in the third circle. Circles can be empty, full, or anywhere in between. Now we'd like you to think about the people in your life -- please focus on the people 18 or over who are important to you -- not just people you happen to know or who may be related to you (Social Networks in Adult Life, Principal Questionnaire, 1980:1, emphasis in original).



Interviewers recorded the names in the order that they were given by the respondent (i.e., the "closest" and most "important" first). There was no limit on the number of alters that could be named by each respondent.

After the list of names was obtained, a series of name interpreter questions was asked about the first 10 alters that were named with the target diagram (i.e., the 10 "closest" and "most important"). The information from these name interpreter questions was used to create measures of both convoy structure and convoy functions. To obtain information to construct measures of convoy structure (including role relation, geographical proximity of ego's residence to alter's, length of the relationship between ego and alter and frequency of contact between ego and alter) they asked the following questions:

1. Is [PERSON 1, ETC] a male or female?
2. Is [PERSON 1, ETC] a friend, relative or what?
3. Does [PERSON 1 ETC] live within an hour's drive of you?
4. How old is [PERSON 1 ETC]?
5. About how many years have you known [PERSON 1 ETC]?
6. Would you say you're usually in touch with [PERSON 1 ETC] every day, about once a week, once a month or once a year?

To create measures of convoy function, Kahn and Antonucci used a series of name interpreter questions about social support transactions which they developed from their "aid", "affect" and "affirmation" typology of social support. These support transaction questions were as

follows:

1. Are there people you confide in about things that are important to you?
2. Are there people who reassure you when you're feeling uncertain about something?
3. Are there people who make you feel respected?
4. Are there people who would make sure that you were cared for if you were ill?
5. Are there people you would talk to when you're upset, nervous or depressed?
6. Are there people who you talk to about your health. (Social Networks in Adult Life, Principal Questionnaire, 1980:2).

These six name interpreter questions were asked reciprocally. After the respondents were asked to indicate who among these 10 alters "does the particular thing for you", the interviewer asked "the questions the other way around" (i.e., "who among these 10 alters do you do these same things for") (Social Networks in Adult Life, Principal Questionnaire, 1980:2,3)]. This procedure resulted in a possible total of 12 support transactions between each ego and alter.

Antonucci and her colleagues have used this data set to publish a number of articles in which they claim to describe the "social support networks of older adults" (Antonucci and Akiyama, 1987a:519). The topics of these articles include the composition of the support networks of the elderly (Antonucci and Akiyama, 1987a), differences in the support

networks of elderly men and women (Antonucci and Akiyama 1987b), patterns of reciprocity in support networks of the elderly (Antonucci and Israel, 1986; Ingersoll-Dayton and Antonucci, 1988; Antonucci and Jackson, 1990), intergenerational support patterns in the support networks of the elderly (Antonucci and Akiyama, 1991), and the impact of support networks on the well-being of the elderly (Levitt et al., 1985-86; Israel and Antonucci, 1987). However, informed by the earlier arguments of social network analysts who point out the importance of the issue of boundary specification and the consequences of alternative name generator constraints, I question whether or not these articles really describe the "support networks" of their respondents. Does the intimacy constraint of Kahn and Antonucci's target diagram really identify a convoy of supportive and supported others? Do the support transactions among the 10 "closest" and "most important" alters represent the sum total of an individual's "support network"? What are the implications of using this operationalization of convoy structure to study the support transactions of the elderly if the answers to one or both of these questions is "no"?

A number of studies have found support for Wellman and Wortley's (1990:559) claim that not all relationships "are supportive and not all types of ties provide similar kinds of support." For example, in his study of the availability of social support to the adult residents of East York (an

area of metropolitan Toronto), Wellman (1981) "discover[ed] that only a minority of the close 'intimate' ties of East Yorkers are supportive: 30 percent provide support in emergencies and 22 percent provide support in dealing with everyday matters." Similar results were obtained by Schuster and Butler (1989:63) in their study of factors influencing bereavement adjustments of individuals aged 57 and over, where "only about half of perceived close ties were also perceived as either providing either affective or instrumental support". In their study of network range and health, Haines and Hurlbert (1992) found that weaker ties were also conduits of social support.

Other researchers have found that alternative name generators do identify different subsets of alters from respondents' overall larger sets of social relationships. Campbell and Lee (1991) compared the structural characteristics of personal networks generated in four network studies with name generators with different constraints (i.e., three studies used an intimacy constraint and study used a relational content constraint). They found that intimacy constraint name generators tended to identify smaller networks than relational content constraints. von Sonderen et. al (1990), used alternative name generators (one with an intimacy constraint and the other with a relational content constraint) to generate two personal networks from the same respondents. They found that the two

methods identified different subsets of the respondents' role relationships, with more parents, neighbours and work relations identified with the exchange method.

In light of these findings, and with consideration of the above questions concerning Kahn and Antonucci's operationalization of convoy structure, I developed a strategy to assess The Convoy Model of Social Support as an approach to the study of the social support transactions of the elderly. The first step in my assessment strategy was to use Kahn and Antonucci's conceptual arguments about convoy structure and convoy function and their methodological procedure to derive two sets of testable predictions about Convoy Structure and Convoy Function. In the remainder of this chapter I outline these two sets of convoy predictions and then describe my overall analytic strategy for assessing The Convoy Model of Social Support.

### **CONVOY PREDICTIONS**

Two sets of testable predictions can be derived from Kahn and Antonucci's conceptual arguments about convoy structure and convoy function and their name generator-name interpreter sequence: convoy structure predictions and convoy function predictions. Each set of predictions has two components. First, because Kahn and Antonucci argue that the structural and functional characteristics of the convoy will

be different for alters in each of the three rings, there are a series of ring-by-ring predictions about these hypothesized hierarchical differences. Second, because Kahn and Antonucci argue that all convoy members are "close" and "important" to ego, and are related to ego by the giving and receiving of social support, there are predictions about the overall convoy membership. These two sets of predictions are as follows:

### Convoy Structure Predictions

#### *Ring-by-Ring Predictions*

1. Immediate family members are more likely to be named in Ring 1 than in the other two Rings.
2. Alters named in Ring 1 will be "closer" and "more important" to ego than alters named in Ring 2.
3. Alters named in Ring 2 will be "closer" and "more important" to ego than alters named in Ring 3.
4. Alters named in Ring 1 will be known longer by ego than alters named in Ring 2.
5. Alters named in Ring 2 will be known longer by ego than alters named in Ring 3.
6. Patterns of the geographical distance between ego's residence and alter's residence will vary more for alters named in Ring 1 than alters named in the other two Rings.
7. Patterns of frequency of contact between ego and alter will vary more for alters named in Ring 1 than for alters named in the other two Rings.

#### *Overall Prediction*

1. All of the alters named by ego on the target diagram will represent individuals who are "close" and "important" to ego.

## Convoy Function Predictions

### *Ring-by-Ring Predictions*

1. Alters named in Ring 1 will engage in more support transactions with ego than alters named in Ring 2.
2. Alters named in Ring 2 will engage in more support transactions with ego than alters named in Ring 3.
3. Alters named in Ring 1 will engage in more kinds of support transactions with ego than alters named in Ring 2.
4. Alters named in Ring 2 will engage in more kinds of support transactions with ego than alters named in Ring 3.

### *Overall Predictions*

1. All of the alters named on the target diagram will engage in social support transactions with ego.
2. All of the alters who engage in support transactions with ego will be named on ego's target diagram.

## **ASSESSING THE CONVOY MODEL**

As outlined in Chapter 2, the constraints that are built into name generator questions allow the researcher to isolate or put boundaries around certain portions of a respondent's overall social network. My strategy for assessing The Convoy Model of Social Support involves using alternative name generators with different kinds of constraints. To determine whether or not the intimacy constraint of the target diagram is indeed identifying the

network of "close" and "important" alters that are expected from the Convoy Structure Predictions, I first obtain a list of alters that are generated with the target diagram. Then, using name interpreter information about each alter's (1) role relation to ego, (2) closeness to ego, (3) time known by ego, (4) geographical proximity to ego's residence and (5) frequency of contact with ego, I construct measures of convoy structure which I use to test the Convoy Structure Predictions.

To test the Convoy Function Predictions, I use a list of alters that were generated from the same respondents with a series of name generators that have relational content constraints of specific support transactions. I know that the alters named with these questions are perceived by the respondents as supportive and supported others. I use this information to test the Convoy Function Predictions in two ways. First, I construct support transaction measures (i.e., of the amount of support and the kind of support) and assess the degree to which alters named on the target diagram are involved in these kinds of support transactions. Second, by comparing the two lists of alters -- (1) the alters named with the intimacy constraint of the target diagram and (2) the alters named with the questions with specific support exchange constraints -- I can determine whether or not the alters named on the target diagram indeed represent the respondents' social support networks. If the target diagram



is identifying a "convoy" of supported and supportive others, then there should be a substantial overlap between the two lists.

Because Hammer (1984:342) has argued that even when name generator constraints are in place "we do not in fact know on what basis respondents are naming the contacts they do name rather than others", I supplement each of my prediction tests with qualitative information about the selection criteria used by the respondents when choosing alters to name on their target diagrams.

In the next chapter I describe how I used information from a current study of the social networks and social support transactions of older adults (65+) to implement this strategy.

## CHAPTER 4

### DATA AND MEASURES

The data for my assessment are taken from the Cochrane Network Study.<sup>2</sup> The CNS is a current study of the social networks and social support transactions of community dwelling older adults (65+) in a small Alberta town. Invitations to participate in the study were sent to all households identified by the Calgary Regional Planning Commission from the Town of Cochrane 1992 Municipal Census Data as containing at least one member aged 65 or over (N=152).<sup>3</sup> Households not returning the enclosed reply card were sent a second invitation. Reply cards were received from 74 households of which 54.0% (N=40) agreed to participate in the study. Although the overall response rate was low at 30.8%<sup>4</sup>, this figure does represent 24.1% of the total population of the households and 17.2% of the older adults in the 1992 Town of Cochrane population of community dwelling residents (65+). The age distribution and other characteristics of the CNS sample were fairly representative of this overall population (see Table 1). The sex distribution was somewhat less representative because the sampling unit was the household. Of the 59.6% of the households in Cochrane that contained only one member aged 65 or over, many were the households of widowed women.

**Table 1.** Subsample Characteristics, and Select Characteristics from The CNS Sample and The Town of Cochrane 1992 Population of Community Dwelling Older Adults

Variable		Sample or Population Group		
		"Convoy" Subsample (N=24)	CNS Sample (N=40)	T of C 1992 (N=233)
Sex:	% male	16.7	32.5	45.1
	% female	83.3	67.5	54.9
Marital Status:	% married	50.0	55.0	70.4
	% widowed	50.0	45.0	29.6 <sup>a</sup>
Household Compo- sition:	# of households	24	40	166
	% 1 person 65+	50.0	45.0	59.6
	% >1 person 65+	50.0	55.0	40.4
Own/Rent:	% owning home	79.2	87.5	82.4
	% renting	20.8	12.5	17.6
Age:	mean age (years)	72.0	72.3	72.1
	standard deviation	4.7	5.6	5.2
	range	65-87	65-87	65-92
Education:	mean (years)	12.3	11.9	*
	standard deviation	1.9	2.5	*
	range	8-16	8-18	*
Household Income (1991):	mean (dollars)	35000	30286	*
	standard deviation	21026	18627	*
	range (in thousands)	15-95	10-95	*
	(base N for income)	(20)	(35)	
Length of Cochrane Residence:	mean (years)	23.1	22.2	*
	standard deviation	24.1	22.5	*
	range	1-78	1-78	*
	% Cochrane ≤10 yrs	41.7	45.0	*
	% Cochrane 11-24 yrs	20.8	20.0	*
	% Cochrane >25 yrs	37.5	35.0	*

<sup>a</sup> This figure represents % currently unmarried. Exact proportion widowed or single not known

\* Information not available

Between December 1992 and March 1993, trained interviewers conducted in home, face-to-face interviews with one member aged 65 or over from each of the 40 households. If more than one member of the household aged 65 or over was interested in participating in the study, then the member whose birthday was closest to the day of the interview was randomly selected.<sup>5</sup> Each interview was two to four hours long.

For my assessment of The Convoy Model of Social Support, I use information from 24 of the interviews that I conducted as a research assistant with the Cochrane Network Study. The characteristics of my "convoy" subsample are comparable to both the CNS sample and the 1992 Town of Cochrane population of community dwelling older adults, except for the sex distribution and marital status (see Table 1). These characteristics of my subsample were strongly affected by both the gender distribution of single person households in Cochrane and the random selection procedure. Half of my subsample were widowed women and of the married individuals that comprised the other half of the subsample, 9 women were selected randomly from the couples where both partners were equally willing to be interviewed.<sup>6</sup> The average length of my interviews with these 24 respondents was almost three hours (mean=2.7 hours, range: 1.5 to 4 hours).

### THE CNS INTERVIEW SCHEDULE

The CNS interview schedule consisted of three components: (1) close-ended questions asked by the interviewer, (2) a small self-administered questionnaire, and (3) a series of open-ended qualitative probes. For the first two components responses were recorded in writing. With the permission of the respondent, the qualitative probes were tape recorded.

On average, the CNS interview schedule gathered over 500 pieces of information from each respondent. Consequently, the CNS data set includes a broad range of variables that would be of interest to researchers in any combination of the areas of social support, social networks and/or the elderly. However, for my assessment of The Convoy Model, I have limited my selection of information from this data set to the following items that will allow me to test the two sets of convoy predictions.

#### The CNS Target Diagram

CNS respondents were asked to complete the target diagram that is presented in Figure 3. This diagram, and the procedure for using it as a name generator, were different in five ways from Kahn and Antonucci's original diagram and methodological procedure. First, the physical appearance of

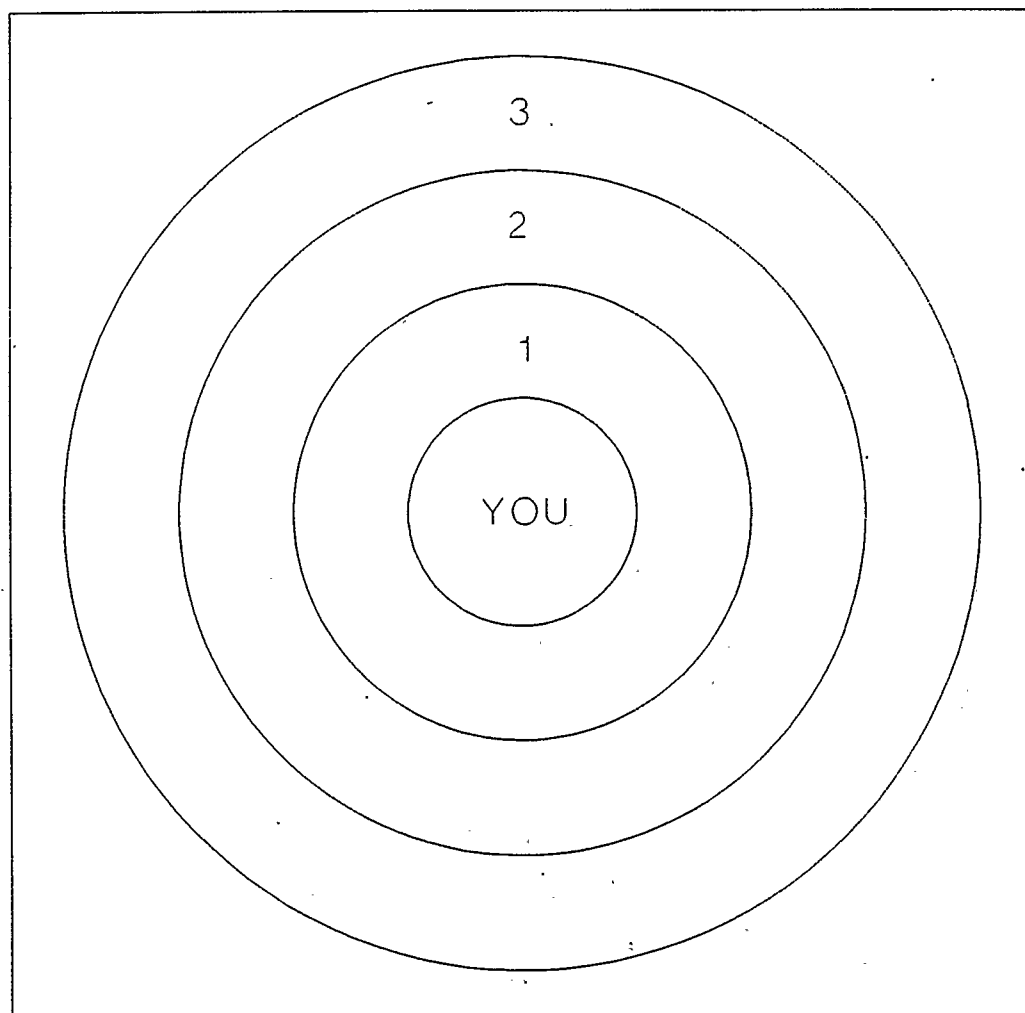


Figure 3: Cochrane Network Study Target Diagram

the CNS target diagram was slightly modified from Kahn and Antonucci's original device. The rings were numbered to give a more explicit sense of hierarchical order. Second, after the target diagram instructions (discussed below) were read aloud by the interviewer, the respondents themselves wrote the names of their alters on the target diagram. There was no time limit for this task or limit to the number of alters that could be named. The average number of alters named by my respondents with the target diagram was 16.00 (s.d. 8.69, range: 5-36). Third, there was no enforced ring-by-ring order for naming the alters. Respondents were not required to name alters in Ring 1 first and could name alters in any order across the rings. Fourth, there were no age restrictions on the alters that could be named. And fifth, the intimacy constraint built into the CNS instructions was less stringent than the constraint in Kahn and Antonucci's original instructions. Where Kahn and Antonucci's instructions suggested inner circle alters should be limited to "the one person or persons that you feel so close to that it would be hard to imagine life without them" (Antonucci, 1985a:26), the CNS instructions asked respondents to place the "members of your network that are most important to you" in Ring 1. The complete CNS target diagram instructions, which were printed on the same page as the diagram, were as follows:

Everyone has relationships that are important to them for a number of reasons. One way to identify people who are important to you is to put their names on a target diagram.

When looking at the target diagram, picture yourself as the bull's-eye or centre of the target. Then think of the people who, for many reasons, are important to you. Put each person's name on your target diagram by printing their first name and last initial in one of the rings. The people you put in ring 1 are members of your network that are most important to you--your "inner circle." Please include a brief word of identification (for example. Mary T. - sister, David B. - neighbour).

The procedure for collecting name interpreter information in the CNS was different in two important ways from Kahn and Antonucci's original procedure. First, instead of collecting name interpreter information for the 10 "closest" and "most important" alters named on the target diagram, the CNS collected full name interpreter information for all target diagram alters aged 16 or over.<sup>7</sup> Second and more importantly, name interpreter questions about support transactions were not asked about the alters already named on the target diagram. Instead the CNS used a separate series of name generator questions with specific support exchange constraints to construct measures of support transactions or network functions. This procedure did not preclude respondents naming individuals in response to the Specific Support Questions whom they had already named on their target diagrams, but unlike the strategy of Kahn and Antonucci, it does not restrict the analysis of social



support transactions to those alters named only on the target diagram.

### The CNS Specific Support Questions

Like Fischer's (1982) study of Northern California Communities, the CNS used a large number of name generator questions with the relational content constraint of specific support transactions. These questions tapped 45 different support transactions including activities of daily living (ADLs) (e.g., eating, dressing and bathing) and instrumental activities of daily living (IADLs) (e.g., shopping, housekeeping and banking) which are often of particular interest in studies of the social support transactions of the elderly (e.g., Peters et al., 1987; Stoller and Pugliesi, 1991; Clark, 1992). The availability and provision of these kinds of instrumental aid are considered to influence extended independent living for the elderly (Chappell, 1990:442).

There is a great deal of debate among social support researchers about how to identify and classify various forms of social support. Reviews (e.g., by House and Kahn, 1985; Tardy 1985; Barrera, 1986; Vaux, 1988) reveal that a wide range of different support typologies have been proposed, such as Wellman and Wortley's (1990) multiple indicators (e.g., emotional aid, small services, large services,

financial aid and companionship), House's four-fold categorization of emotional support, instrumental support, informational support and appraisal support (described in House and Kahn, 1985:97), and Lin's (1986) instrumental-expressive dichotomy. I have grouped the CNS Specific Support questions into the three categories of (1) emotional support questions, (2) instrumental support questions and (3) companionship support questions. This typology is consistent with the kinds of support routinely found in studies of the support transactions of the elderly (e.g., Peters et al., 1987; Connidis and Davies, 1992), and studies of social support transactions more generally (e.g., Fischer, 1982; Wellman and Wortley, 1990; Haines and Hurlbert, 1992). The CNS Specific Support Questions are as follows:

#### *Emotional Support Questions*

- 1a. When you are concerned about a personal matter--for example, about someone you are close to or are worried about-- how often do you talk about it with someone-- usually, sometimes, hardly ever, never? When you do talk with someone about personal matters, who do you talk with?
- 1b. Who comes to you to talk about their personal matters?
- 2a. Often people rely on someone they know in making important decisions about their lives--for example, decisions about their family or their work. Is there anyone whose opinion you consider seriously in making important decisions? [IF YES] Whose opinion do you consider?
- 2b. Would anyone consider seriously your opinion when making an important decision? [IF YES] Who would

consider your opinion?

- 3a. In the last 6 months, have you discussed your job or problems at work with anyone? [IF YES] Could you give me their names?<sup>8</sup>
- 3b. In the last 6 months, has anyone discussed his/her job or problems at work with you? [IF YES] Please give me their names.

### *Instrumental Support Questions*

- 1a. When people go out of town for a while, they sometimes ask someone to take care of their home for them--for example, to water their plants, pick up the mail, feed a pet or just check on things. If you went out of town, would you ask someone to take care of your home in any of these ways? [IF YES] Could you give me the names of the people you would ask?
- 1b. Would anyone ask you to take care of their home in any of these ways? [IF YES] Could you please give me their names?
- 2a. In the past 6 months, has anyone helped you with any tasks around the home, such as painting, moving furniture, cooking, cleaning, or major or minor repairs? [IF YES] Who helped you?
- 2b. In the past 6 months, have you helped anyone with tasks around their home, such as painting, moving furniture, cooking, cleaning or major or minor repairs? [IF YES] Who have you helped?
- 3. In the past 6 months, have you taken care of anyone's children when they weren't at home? [IF YES] Whose children have you taken care of?
- 4a. In an emergency, is there anyone you could ask to lend you money? [IF YES] Who could you ask?
- 4b. In an emergency, is there anyone who could ask you to lend him/her money? [IF YES] Who could ask you?
- 5a. If you were ill and couldn't take care of things around your home for a month or more, is there anyone you would ask to help you out? [IF YES] Who would you ask?
- 5b. Is there anyone outside your household who would ask you to come and help out if they were ill and couldn't

take care of things around their home for a month or so? [IF YES] Who would ask you?

- 6a. At the present time, are you providing assistance to anyone in these areas:  
yardwork/house repairs
  - 7a. housekeeping/laundry
  - 8a. meal preparation
  - 9a. shopping/errands
  - 10a. banking/business affairs
  - 11a. transportation
  - 12a. foot care
  - 13a. medications
  - 14a. walking/transferring
  - 15a. bathing/hygiene/grooming
  - 16a. dressing
  - 17a. toileting
  - 18a. feeding
- [IF YES] Please indicate who are you providing each type of assistance to.

- 6b to 18b. At the present time, are you receiving assistance from someone in any of these [same] areas? [IF YES] Please indicate who you are receiving each type of assistance from.

### *Companionship Support Questions*

1. Here is a list of activities. Which, if any, of these have you done in the last six months.
  1. Had someone to your home for lunch or dinner
  2. Went to someone's home for lunch or dinner
  3. Someone came by your home to visit
  4. Went over to someone's home for a visit
  5. Went out with someone (e.g., restaurant, movie, park)
  6. Met someone you know outside your home (e.g., at restaurant, bar, movie, park, club)
  7. Other [IF OTHER] What activity?

[IF YES] May I have the names of the people you usually do these things with?
2. Sometimes people get together with others who have the same interests. Do you ever do this? [IF YES] Who do you usually do this with?

There were no limits on the number of alters that could

be named in response to each Specific Support Question. All names were recorded. The average number of alters named in response to the Specific Support Questions by my respondents was 15.41 (s.d. 6.23, range:6-32).<sup>9</sup> Full name interpreter information was then collected for the first 6 alters aged 16 or over named in response to each question.

### Name Interpreter Questions

The CNS Interview Schedule used over a dozen name interpreter questions to ask respondents for details about their alters and about the nature of the relationships between themselves and their respective alters. From these CNS name interpreters, I have selected the questions which allow me to construct the measures that I need to test the Convoy Structure Predictions (i.e., closeness, time known, geographical proximity and frequency of contact).

1. This is a list of some of the people aged 16 and over we have talked about so far. Are there any people on this list who you feel especially close to? [IF YES] MARK THE BOX NEXT TO THE ALTER'S NAME.
2. How close are you to [INSERT ALTER'S NAME]?:  
acquaintances, just friends, close friends, very close friends or something else?
3. How long have you known [INSERT ALTER'S NAME]?  
[RECORD IN YEARS]
4. Where does [INSERT ALTER'S NAME] live? [RECORD ACTUAL TOWN, CITY, PROVINCE, STATE, COUNTRY, ETC.]
5. Please tell me how often in the past year you've been in touch with [INSERT ALTER'S NAME], in any way? - none, once or twice a year or less, once every few months,

about once each month, a couple of times each month,  
about once each week, more than once each week, or every  
day?"

### Qualitative Information

I used two sources of qualitative information from the CNS interview schedule to supplement my quantitative measures. Any names mentioned in the excerpts that I used were changed to protect anonymity. The first source was my written notes of the comments made by my respondents while they were completing their target diagrams. These comments included information about the kinds of criteria that my respondents were using to select their target diagram alters. The second source was the information provided by the respondents when they were shown their completed target diagrams and asked:

1. What kinds of things were you thinking about when you put these people in the rings [of the target diagram]?
2. Why did you choose these particular people?
3. If I had asked you to complete this target diagram 5 years ago, would it look any different?  
[IF YES] How would it differ and why?

### Applicability of CNS Data for Testing Convoy Predictions

Taken together, the information that I use from the CNS facilitates a generous test of the two sets of Convoy Predictions. The modifications of the CNS target diagram

allow respondents to identify a broader range of ties than Kahn and Antonucci's original version. The use of alternative name generators with specific support constraints representing 45 possible support transactions (i.e., 21 questions asked reciprocally, plus the provision of babysitting, and the two companionship support questions) to assess the Convoy Function Predictions allows the CNS respondents to identify a larger number of alters who engage in a wider variety of support transactions with them than in Kahn and Antonucci's original procedure. The additional qualitative information provided by my respondents also allows for the identification of support functions that are not being tapped by the Specific Support Questions.

Although the CNS Specific Support Questions do not include the same questions that were asked by Kahn and Antonucci, some of the questions are similar to the 12 support transaction questions asked by Kahn and Antonucci, particularly their questions about sick care, confiding about important matters and talking about health or when nervous or depressed. I would also argue that Kahn and Antonucci's "aid, affect and affirmation" conceptual typology of social support transactions (Kahn, 1979:85, Antonucci, 1985b:96) can be partially accommodated within the categories of emotional support, instrumental support and companionship support. Kahn and Antonucci's "aid" corresponds directly to the types of support indicated by

the instrumental questions. In their 1980 article (p.280) Kahn and Antonucci report "affective" and "emotional" support as synonymous when describing the results of a previous research study. Kahn and Antonucci's support transactions involving "affirmation" are the most difficult to place, but it is possible that such feelings of self worth could be facilitated by the companionship of social activities and shared interests. This suggestion seems consistent with Kahn's (1979:281) explication of transactions of affirmation: "Imagine, for example, two people leaving a meeting together. One turns to the other for affirmation of his own perceptions and interpretations of what really happened, who was in the right, what was left unsaid and the like." In sum, the information from the CNS will allow me to gain a comprehensive understanding of both the structural and functional characteristics of my respondents' social networks.

## **MEASURES**

To test the two sets of Convoy Predictions, I used information from the CNS interview schedule to construct measures of role relation, closeness, time known, geographical proximity, frequency of contact and social support.



Role Relation. CNS respondents were asked to indicate a role relation for all alters named on their target diagrams. For my respondents, I clarified the exact nature of these relationships (e.g., whether a relative was a cousin, or a brother-in-law) and recorded this information on the name interpreter coding forms. Informed by researchers who have studied the importance of various social groups as sources of support for the elderly (e.g., Cantor and Little, 1985; Cicirelli, 1985; Peters and Kaiser, 1985; Shore, 1985; Gold, 1987; Peters et al., 1987; Cantor, 1991; Connidis and Davies, 1992), I recoded this detailed relationship information into the five categories of (1) immediate family, (2) other family, (3) friend, (4) neighbour and (5) other.

Studies have found that spouses and adult children (including sons-in-law and especially daughters-in-law) are the most important sources of support for the elderly (e.g., Hess and Soldo, 1985; Chappell, 1990; Cantor, 1991). I included these groups in my measure of "immediate family". There are conflicting findings about the importance of siblings as sources of support (e.g., Cicirelli, 1985; Gold, 1987). I included these alters in my measure of "other family" along with cousins, aunts, uncles, grandchildren, and in-law relationships other than sons-in-law and daughters-in-law. For my measures of "friend" and "neighbour", I included alters who were identified by

respondents as their friends and neighbours respectively. Remaining alters were coded as "other" and included ministers, youths hired to shovel snow or mow grass, co-workers, Home Care workers, Health care professionals, cleaning ladies, organization members, neighbourhood children, a landlady, 2 acquaintances and an Avon Lady.

Closeness. I used the responses to the two CNS name interpreter questions about closeness as my measures of closeness. These two ordinal level measures are distinguished from one another by the number of "degrees of closeness" that were tapped by each question. The name generator question about "especially close" alters tapped two degrees of closeness (i.e., 1. especially close and 2. not especially close). I call this measure the "Two Degree Closeness Measure". The name generator question that asked respondents "How close do you feel to [INSERT ALTER'S NAME]?" tapped five degrees of closeness (i.e., 1. acquaintances, 2. just friends, 3. close friends, 4. very close friends and 5. something else<sup>10</sup>). I call this measure the "Five Degree Closeness Measure".

Time Known. I used the responses, in years, from the name generator question "How long have you known [INSERT ALTER'S NAME]?" as an interval level measure of the length of time that ego has known alter.

To construct a second ordinal level measure of

relationship duration, I follow Burt (1984) and argue that the tendency for respondents to recognize someone as a friend or advisor depends upon the length of acquaintanceship. Burt suggested that there were three breakpoints in this recognition process: (1) recent acquaintance (known for less than 3 years); (2) established acquaintance (known for 3 to 6 years); and (3) old acquaintance (known for more than six years). To take the age of my respondents into account, I use the following breakpoints to recode the actual number of years that ego has known alter into the categories of (1) less than 6 years, (2) 6 to 35 years and (3) over 35 years, where 35 years represents half a lifetime for a 70 year old respondent.

Geographical Proximity. The CNS name interpreter question about the geographical proximity of each alter's residence to ego's residence recorded the actual place names. I recoded this information in two ways to create both an interval and an ordinal measure of geographical proximity for my assessment. For my interval measure of proximity, I used the actual number of kilometres (measured in radial distance from Cochrane) between ego's residence and alter's residence.

To construct my ordinal measure of proximity, I used the rationale that the further away that alter lives from ego, the more time and/or expense would be involved in achieving most kinds of direct contact (e.g., increasing

travel time and expense for face-to-face contact, increasing expense for long distance phone calls or increasing time for mail delivery) and the more difficult it would be to maintain the tie. Taking the specific geographical location of Cochrane into account, I recoded the actual place name of each alter's residence into four categories: (1) in Cochrane, (2) in Calgary, (3) inside Alberta (excluding Cochrane and Calgary) and (4) outside Alberta.

Frequency of Contact. I used the responses from the CNS name interpreter question that asked respondents how often they were in contact with their alters to create both an ordinal level and an interval level measure of frequency of contact. For my ordinal measure of frequency of contact I collapsed the original eight ordinal response categories (i.e., 1. none, 2. once or twice a year or less, 3. once every few months, 4. about once a month, 5. a couple times each month, 6. about once each week, 7. more than once each week and 8. every day) into the four categories of contact frequency used by Kahn and Antonucci in their 1980 Social Networks in Adult Life study: (1) daily, (2) weekly (at least once a week, but less than daily), (3) monthly (at least once a month) and (4) infrequently (less than once a month).

For my interval level measure of frequency of contact, I followed a strategy similar to that of Campbell and Lee (1991) and converted the original ordinal categories into figures that represent mean contacts per month.

Social Support. I follow the perceptual approach of Turner (1983) and define my respondents' self reports of support transactions with their respective alters as perceived social support. I used these support transactions to construct a number of support measures.

Total Support. To measure the total number of support transactions between ego and alter for each alter, I used the total number of times that alter was named in response to the 45 Specific Support Questions.

Support Received. To measure the total number of support transactions received by ego from alter for each alter, I used the total number of times that alter was named in response to the 21 Specific Support Questions that asked the respondent about receiving support. These questions were: Emotional Support Questions 1a and 2a; and Instrumental Support Questions 1a, 2a, 4a, 5a and 6a to 18a.

Support Provided. To measure the total number of support transactions provided by ego to alter for each alter, I used the total number of times that alter was named in response to the 22 Specific Support Questions that asked the respondent about providing support. These questions were: Emotional Support questions 1b, 2b, and 3b; and Instrumental support questions 1b, 2b, 3, 4b, 5b and 6b to 18b.

Emotional Support. To measure emotional support I used the alters named in response to the Emotional Support Questions. To measure the total number of emotional support transactions between ego and alter for each alter, I used the total number of times that alter was named in response to the 6 Emotional Support Questions.

Instrumental Support. To measure instrumental support I used the alters named in response to the Instrumental Support Questions. To measure the total number of instrumental support transactions between ego and alter for each alter, I used the total number of times that alter was named in response to the 35 Instrumental Support Questions.<sup>11</sup>

Companionship Support. To measure companionship support I used the alters named in response to the Companionship Support Questions. To measure the total number of companionship support transactions between ego and alter for each alter, I used the total number of times that alter was named in response to the 2 Companionship Support Questions.

Additional Support Measures. I created additional ordinal level measures for total support, support received, support provided and instrumental support by coding all alters named more than 5 times with the Specific Support questions into one category. The categories for these ordinal measures are: (1) no transactions, (2) 1 transaction, (3) 2 transactions,

(4) 3 transactions, (5) 4 transactions, (6) 5 transactions  
and (7) >5 transactions.

## CHAPTER 5

### RESULTS AND DISCUSSION

For my tests of the two sets of Convoy Predictions, I analyze the alters for whom my respondents had provided full name interpreter information. These alters include all alters over age 16 who were named with the CNS target diagram and the first six alters over age 16 who were named in response to any of the Specific Support Questions.

I use both quantitative and qualitative analyses. For quantitative analyses involving ordinal level variables I use contingency tables and chi-square tests of significance (Grimm and Wozniak, 1990:108-109). For ring-by-ring predictions involving ordinal level variables I use Kruskal-Wallis One Way Analysis of Variance (Grimm and Wozniak, 1990:316-318).

For ring-by-ring predictions involving interval level variables, I use One Way Analysis of Variance (ANOVA) and Tukey's HSD (Honestly Significant Difference) comparison of means test (Levin and Fox, 1991:252-255). If the ANOVA test reveals a significant overall difference across the rings, then I use the Tukey's HSD test to determine which ring means are significantly different from each other (i.e., Ring 1 and Ring 2 and/or Ring 1 and Ring 3 and/or Ring 2 and Ring 3). Alpha levels for all tests of significance were .05.



For the qualitative analyses of my respondents' self-reports of the criteria they used when selecting their target diagram alters, I looked for selection criteria themes that fell into one of two categories: (1) themes consistent with the two sets of assessment predictions (i.e., selection themes involving role relations, closeness, importance, time known, geographical proximity, frequency of contact and specific support exchange) and (2) other themes that were different from the two sets of Convoy Predictions.

I first report the results of my tests of the Convoy Structure Predictions and then the results of my tests of the Convoy Function Predictions.

### **CONVOY STRUCTURE PREDICTIONS**

#### Ring-by-Ring Predictions

1. *Immediate family members are more likely to be named in Ring 1 than in the other two Rings*

Table 2 indicates that, as predicted, the role relationships between egos and alters were related to the ring placement of the alters' names. Respondents did place immediate family members in Ring 1 more often than in the other two rings. Almost 90% of the immediate family members were named in Ring 1, compared with 8.2% in Ring 2 and 2.1% in Ring 3.

**Table 2.** Relationship of Alters to Ego, by Ring Placement (%)

Ring	Relationship					Total (N)
	Immed Family	Other Family	Friend	Neigh- bour	Other	
Ring 1	89.7	46.7	28.8	20.0	13.3	(168)
Ring 2	8.2	41.7	40.0	40.0	60.0	(116)
Ring 3	2.1	11.6	31.2	40.0	26.7	( 73)
Totals (N)	100.0 (97)	100.0 (60)	100.0 (160)	100.0 (25)	100.0 (15)	(357)

Chi-square = 114.57

$p < .05$ , d.f. = 8

gamma = .65

This finding is not unexpected given the amount of research that has already demonstrated the importance of immediate family members (i.e., spouses and adult children) not only as providers of social support to the elderly (i.e., Peters et al., 1987, Chappell, 1990, Cantor, 1991) but also as important actors in social support transactions more generally (e.g., Thoits, 1984; Wellman and Wortley, 1990). Research on the sociology of the family has also identified the significance of immediate family for reasons that range from childhood socialization to care in old age (e.g., Anderson et. al, 1988). Many of my respondents who had named their immediate family members in Ring 1 indicated that these relationships were the most important to them. One woman told me: "Well, of course the family is everything

to me. They come first and foremost in everything. And even though I'm very close to these people [in Ring 2], they're not as close as my own family." Another man said "Well, of course in [Ring] number 1 -- you've got son and daughter in there. Family's the most important thing to me."

It is interesting to note, however, that only 3 of the 12 married respondents included their spouses on their target diagrams. When I asked about this omission, the universal response was one of surprise. As one woman told me about her husband: "Oh! He's my closest friend. He should be right here [inside the centre circle marked YOU]. Another man said: "How about that! It's a given ... It's taken for granted." And one woman, married for almost 60 years, demonstrated that she really thought of herself and her husband as one unit when she wrote on her target diagram "Everyone is important to us".

Fischer (1982:289) reported a similar finding of "the taken-for-granted associate" in his study of Northern California Communities, where many of his respondents did not report their spouses. It is important to realize that some important alters, especially spouses, may not be named on the target diagram because of oversight and not because, as Antonucci and Akiyama (1987b:523) claimed, that respondents have "apparently ... outlived these relatives".

Overall, Table 2 and the comments of my respondents indicate that the role relationships between the respondents

and their target diagram alters represent stronger rather than weaker ties. Marsden and Campbell (1984:483) indicate that the source of a relationship is sometimes considered to be an indicator of tie strength. With this approach, relatives are assumed to be strong ties and neighbours or acquaintances are assumed to be weak ties. Informed by this argument, the findings from the test of the role relation prediction indicate that the alters named on the target diagram tend to represent stronger rather than weaker ties.

2. *Alters named in Ring 1 will be "closer" and "more important" to ego than alters named in Ring 2.*
3. *Alters named in Ring 2 will be "closer" and "more important" to ego than alters named in Ring 3.*

Panel A of Table 3 confirms that, as predicted, alters perceived as emotionally "closer" to ego were named in Ring 1 more often than the other two rings. Of the 216 alters identified by the respondents as "especially close" to them, 69.9% were named in Ring 1, compared with 23.6% in Ring 2, and 6.5% in Ring 3. As Panel B shows, none of the alters identified as "acquaintances" and only 3.6% of the alters identified as "just friends" were named in this ring.

Panel B also shows that over 74% of the alters who make up the category of "other" were placed in Ring 1. 70.4%<sup>12</sup> of these alters were close family members. As the findings in Table 2 have already shown, immediate family members were

**Table 3.** Closeness of Alters to Ego, by Ring Placement (%)

A. Closeness (Two Degrees)			
Ring	"Especially Close" to Ego	Not "Especially Close" to Ego	Total (N)
Ring 1	69.9	12.1	(168)
Ring 2	23.6	46.1	(116)
Ring 3	6.5	41.8	( 73)
Totals (N)	100.0 (216)	100.0 (141)	(357)

Chi-square = 126.12

 $p < .05$ , d.f. = 2

gamma = .83

Kruskal-Wallis  $H = 125.76$  (corrected for ties) $p < .05$ , d.f. = 2

B. Closeness (Five Degrees)						
Ring	Acquaint- ance	Just Friends	Close Friends	Very Cl Friends	Other	Total (N)
Ring 1	--	3.6	36.4	71.9	74.1	(168)
Ring 2	57.9	37.5	42.1	23.1	20.4	(116)
Ring 3	42.1	58.9	21.5	5.0	5.5	( 73)
Totals (N)	100.0 (19)	100.0 (56)	100.0 (107)	100.0 (121)	100.0 (54)	(357)

Chi-square = 136.19

 $p < .05$ , d.f. = 8

gamma = .67

Kruskal-Wallis  $H = 113.64$  (corrected for ties) $p < .05$ , d.f. = 2

named most often in Ring 1. This additional finding shows that most of the alters named in Ring 1 that were categorized as "others" for this closeness measure do represent emotionally close "others" rather than individuals who were identified as something less close than "acquaintances" (such as a professional relationship between doctor and patient).

Again these findings are not surprising. Many respondents did indicate that, as asked by the target diagram instructions, they placed their "most important" alters in Ring 1. One woman told me that her Ring 1 alters (her immediate family) were the most important to her: "That's true, That's why they're there. And because Iris and Mary are the closest friends that I have, that's why they're in the second [ring]. And these other people [in Ring 3] are friends, some of them are closer than others, but um, they're all people that I know and um, enjoy being with."

For some respondents, the differences in the emotional "closeness" and "importance" of the relationships with their target diagram alters separated the Ring 1 alters from the rest. As one woman told me while she was completing her target diagram: "I suppose the people who are most important to you are your family - so I'll start with them [in Ring 1] ... But to answer any of these [i.e., putting names in Ring 2 or Ring 3], all of my friends are important to me, I'd help if anyone asked, but to put them on a diagram in order

of importance is hard. All people are important to me."

These comments suggest that for some of my respondents the predicted hierarchical placement of alters by closeness and importance across the rings may not be supported.

In their study of the indicators of tie strength, Marsden and Campbell (1984) found that emotional "closeness" was the best indicator of strong ties in dyadic relationships. The findings from the tests of the closeness predictions indicate that most of the relationships between my respondents and their alters represent stronger rather than weaker ties.

4. *Alters named in Ring 1 will be known longer by ego than alters named in Ring 2.*
5. *Alters named in Ring 2 will be known longer by ego than alters named in Ring 3.*

Table 4 demonstrates that, as predicted, alters whom ego had known for the longest period of time were placed in Ring 1. Panel A shows that of the 175 alters known for more than 35 years, 57.7% were named in Ring 1. Only 15.8% of the alters known for less than 6 years were named in this ring. Panel B shows significant differences in the mean number of years ego has known alter across the rings. It is of interest to note that the Tukey HSD test revealed that the significant differences were between Ring 1 and Ring 2 and Ring 1 and Ring 3. There was no significant difference

**Table 4.** Length of Time Ego has Known Alters, by Ring Placement (%)

A. Length of Time Known				
Ring	Less than 6 years	6 to 35 years	More than 35 years	Total (N)
Ring 1	15.8	46.4	57.7	(168)
Ring 2	54.4	28.8	28.0	(116)
Ring 3	29.8	24.8	14.3	( 73)
Totals (N)	100.0 (57)	100.0 (125)	100.0 (175)	(357)

Chi-square = 32.95

$p < .05$ , d.f. = 4

gamma = .36

Kruskal-Wallis  $H = 25.07$  (corrected for ties)

$p < .05$ , d.f. = 2

B. Mean Time Known Per Ring (Years)			
	Ring 1	Ring 2	Ring 3
Mean Time Known	37.4 (17.9)	28.6 (22.6)	27.7 (22.2)

$F(2, 354) = 8.96$ ,  $p < .05$

Tukey's HSD ( $p \leq .05$ ):

Ring 1 and Ring 2

Ring 1 and Ring 3

Note: standard deviations are in parentheses



in time known between alters named in Ring 2 and alters named in Ring 3.

Marsden and Campbell (1984) found that mean measures of time known were affected by the number of relatives (which represent, for the most part, life long relationships) included in the analysis. Because Table 3 has already shown that more family members (especially close family members) were named in Ring 1, the overall findings of the tests of these predictions are not surprising. Although alters named in Ring 1 were known for the longest time, the prediction that alters would be named in a hierarchical pattern across the rings was not supported.

Some respondents did indicate that the duration of the relationships with their alters was a factor in naming them on the target diagram. When I asked one man if his target diagram would have looked any different five years ago, he said: "I don't think so" and confirmed that these relationships were "pretty long term" involving "[his] children and [his] brothers and sisters and old friends that [he'd] had for quite a long period of time". To the same question, another woman replied "Well, I wouldn't have known the Robinsons [named in Ring 3] then". Another woman said that the people she placed in Ring 3 were "people I've met since I came to Cochrane".

Some of the above comments suggest that the findings from the tests of the time known predictions could be

explained in part by the fact that 41.7% of my respondents had moved to Cochrane within the past 10 years. These "recent movers" would be more likely to form a greater number of new relationships during that time than life long residents of the Cochrane area. Because of this opportunity, they could be more likely to place recent acquaintances on their target diagrams. In fact, except for her immediate family members, one woman who had moved to Cochrane from Montreal two years ago did only include her new Cochrane neighbours and friends on her target diagram.

6. *Patterns of the geographical distance between ego's residence and alter's residence will vary more for alters named in Ring 1 than alters named in the other two Rings.*

Kahn and Antonucci (1980) argue that geographical proximity should not be a factor in naming alters in Ring 1 only. Although Panel A of Table 5 shows a very weak linear association between ring placement of the alters names and their residence in either Cochrane, Calgary, somewhere in the rest of Alberta or outside Alberta, the Kruskal-Wallis  $H$  test was not significant. Panel B shows that there are no significant differences in the mean kilometres of the distance between ego's residence and alter's for any of the alters named in Rings 1, 2 or 3. Overall, Table 5 demonstrates that geographical proximity was not a factor for naming alters in any of the rings.

**Table 5.** Geographical Proximity of Alters' Residence to Ego's Residence, by Ring Placement (%)

A. Geographical Proximity					
Ring	Cochrane	Calgary	Inside Alberta <sup>a</sup>	Outside Alberta	Total (N)
Ring 1	40.8	54.1	69.1	39.3	(168)
Ring 2	28.9	42.6	23.6	37.1	(116)
Ring 3	30.3	3.3	7.3	23.6	( 73)
Totals (N)	100.0 (152)	100.0 (61)	100.0 (55)	100.0 (89)	(357)

<sup>a</sup> excluding Cochrane and Calgary

Chi-square = 34.19

$p < .05$ , d.f. = 6

gamma = .11

Kruskal-Wallis  $H = 4.90$  (corrected for ties)

n.s., d.f. = 2

B. Mean Proximity Per Ring (Kilometres)			
	Ring 1	Ring 2	Ring 3
Mean Radial Distance From Ego's Residence	964.0 (2711.9)	1039.8 (2724.8)	518.9 (1409.3)

$F(2, 354) = 1.08$ , n.s.

Tukey's HSD ( $p \leq .05$ ):

No two groups of alters  
significantly different

Note: standard deviations are in parentheses

Geographical proximity was not often given as a reason for selecting the target diagram alters. One woman did comment: "I was thinking about the people who live closest to me", when I asked her what she was thinking about when she completed her target diagram. Another woman said: "I have lots of others [i.e., friends in B.C.] I haven't put down, but you know, [they] don't live in Cochrane."

It is of interest to note that alters living in either Cochrane or outside of Alberta were named relatively evenly across the three rings. Alters living in Calgary or somewhere in Alberta other than Cochrane or Calgary, tended to be named in the first two rings. Part of this pattern may be explained by the geographical mobility of the respondents. Of the respondents who had lived in Cochrane for less than 10 years, only three had moved to Cochrane from a location inside Alberta (2 from Edmonton and 1 from Calgary). The rest of these "recent movers" had moved to Cochrane from places outside of Alberta (Ontario, Quebec, Arizona and the coast of British Columbia). As a group, these "recent movers" were more likely than life-long residents of the Cochrane area to have geographically dispersed relationships. Therefore, they were more likely to place both their new Cochrane friends and their old geographically distant neighbours on their target diagrams. For example, one woman told me that the alters in Ring 2 on her target diagram were a combination of her recent

acquaintances in Cochrane and Calgary and her former Quebec friends and neighbours. This finding is the second indication that geographical mobility may be a factor in determining convoy structure.

7. *Patterns of frequency of contact between ego and alter will vary more for alters named in Ring 1 than for alters named in the other two Rings.*

Kahn and Antonucci (1980) argue that frequency of contact should not be a factor in naming alters in Ring 1. Table 6 indicates that this prediction is not supported. Panel A shows that there are significant differences in the ring placement of alters who are in daily, weekly, monthly and infrequent contact with ego. Of the alters in daily contact with ego, 82.8% were named in Ring 1.<sup>13</sup> Over 45% of the alters seen either weekly or monthly (47.6% weekly and 47.2% monthly) were also named in Ring 1. Of the alters in infrequent contact with ego, 35.4% were named in this innermost ring. Panel B shows that there were also significant differences in the mean number of contacts per month. However, the Tukey HSD test shows that this relationship is not hierarchical across the rings.

Because the CNS measure of frequency of contact included all kinds of contact between ego and alter (including in person, by phone and by letters), it is not surprising that my respondents kept in at least monthly

**Table 6.** Frequency of Contact of Ego with Alters, by Ring Placement (%)

A. Frequency of Contact					
Ring	Daily	Weekly	Monthly	Infrequently	Total (N)
Ring 1	82.8	47.6	47.2	35.4	(168)
Ring 2	17.2	30.8	36.0	36.5	(116)
Ring 3	--	21.6	16.8	28.1	( 73)
Totals (N)	100.0 (29)	100.0 (143)	100.0 (89)	100.0 (96)	(357)

Chi-square = 23.00

$p < .05$ , d.f. = 6

gamma = .24

Kruskal-Wallis  $H = 12.50$  (corrected for ties)

$p < .05$ , d.f. = 2

B. Mean Contact Per Ring (Per Month)			
	Ring 1	Ring 2	Ring 3
Mean Contact Per Month	8.8	5.2	3.7

$F(2,354) = 11.52$ ,  $p < .05$

Tukey's HSD ( $p \leq .05$ ):

Ring 1 and Ring 2

Ring 1 and Ring 3

Note: standard deviations are in parentheses

contact with most of their alters. The findings may also be explained in part by the fact that Marsden and Campbell (1984) also found "frequency of contact" to be an indicator of tie strength. Therefore, these patterns in ring placement by frequency of contact could be another indication that the alters named on the target diagram represent strong ties.

This final point could also explain why my respondents rarely told me that frequency of contact was a factor in naming their target diagram alters. When I asked her if her target diagram would have looked any different five years ago, one woman did comment: "There's a lot of people that I'm in contact [with] - well actually once a year [that I should have put on this time], but when you start doing these things [i.e., completing the target diagram] you forget about them".

### Overall Prediction

1. *All of the alters named by ego on the target diagram will represent individuals who are "close" and "important" to ego.*

Taken together, the results from the ring-by-ring predictions indicate that my respondents did tend to name alters who were "close" and "important" to them on their respective target diagrams. For example, the marginal totals from Table 4 show that while 60.5% of the alters named on the target diagram were "especially close" to my respondents

and 63.8% were described as being as close as "close friends" or "very close friends", only 21.0% were described as being as close as "acquaintances" or "just friends". Prediction tests involving the variables that Marsden and Campbell (1984) state are commonly used indicators of tie strength (i.e., role relation, time known and frequency of contact) show that the alters named on the target diagram represent stronger rather than weaker ties. Even the test of the geographical proximity prediction provides some support for Kahn and Antonucci's argument that the distance between ego's residence and alter's residence is not a factor in determining convoy membership in Ring 1. However, my findings suggest that geographical proximity is not a factor in determining convoy membership in any of the three rings.

It is clear from the explanations of their selection criteria that, as directed, my respondents named alters on their target diagrams that were "important to them for many reasons". One man said "I like good neighbours -- I chose some neighbours to put down here on this paper here. I love camping and I chose my better friends from the camping to put down here." Another man said that his target diagram alters were "people that you have special feelings for. Its about the easiest way I can think of to explain it."

One woman described her Ring 2 alters as follows: "And in number 2 there's Lawrence, my pastor, my friend -- and Elizabeth, [my husband's] sister, she's very dear to me --



she's a different type than I am, but I still respect her and love her very much and we're very close. And these new friends like [my husband] said...they've lived in Calgary all their lives and we're new friends to them."

One man told me: "I was thinking about the people that I am concerned about and [it] would really affect me if something happened to them. I was thinking about people who I knew were concerned about us. There are several names I could have written down, but I do not consider them to be in this category... I think I just picked out the people who I really care about."

One woman, who did not include any of her immediate family on her target diagram, told me that she "felt closer to her friends than her family". Another woman said that the friends on her target diagram "perk me up". Another said that her Ring 3 alters were people who had farmed in the same area that she had moved to as a bride and "we went to dances and stuff".

One woman, whose husband was recovering from a stroke, said that she was thinking about the "people who have been really kind to us in the last year and a half mostly [since the stroke]". Another indicated that her Ring 1 alters "are the first ones I would call on for any emergencies or comfort".

One woman confided: "I'll tell you what I actually did, I thought about [who] I would feel worst if [they]

disappeared out of my life". Another woman said: "You know, it sounds crazy, but I thought, who would I leave my stuff to [if I died]". One woman laughed and said "I couldn't think of anyone else!"

Some respondents explained that they selected some of their alters because they were childhood friends, or schoolmates they hadn't seen in years, or favourite cousins or aunts or simply because "they're good to me". In sum, although the relationships represented by the alters named on the target diagram were not all strong ties, they certainly represented important ones.

#### Summary of Convoy Structure Predictions

The tests of the Convoy Structure Predictions reveal that the alters named by my respondents with their target diagrams represent, for the most part, networks of close and important ties. There is evidence though, that this network structure consists of two, rather than three levels of relationships. The Tukey HSD tests show that there are significant differences only between Ring 1 and Ring 2, and Ring 1 and Ring 3. In addition, out of all the alters named with the target diagram (N=357), only 73 or 20.5% were named in Ring 3. Five of my respondents did not name any alters in Ring 3, and three more respondents named only 1 alter in this outermost ring. Three other respondents identified groups of people only (i.e., "church friends",

"friends" and "former professional colleagues") and not individual alters in this third ring.

There is also evidence that some close and important relationships are missing. As well as the spouses that were "forgotten", several respondents indicated that the names on the target diagram were only "examples" of people that they could have included. For instance, one woman said: "These are really couples, but I only put the woman's name on." Another woman told me: "You know, if I started to name everybody that I can remember, you'd be here for 10 years!"

The structures of my respondents' target diagram networks are similar to those predicted by Kahn and Antonucci's conceptualization of convoy structure. I now turn to my tests of the Convoy Function Predictions to determine whether or not these alters represent my respondents' supportive and supported others.

### **CONVOY FUNCTION PREDICTIONS**

To test the Convoy Function Predictions, I used measures constructed from information about the alters named in response to the Specific Support Questions. Therefore, indicators of support transactions are available only for the target diagram alters who were also named with the Specific Support Questions.

### Ring-by-Ring Predictions

1. *Alters named in Ring 1 will engage in more support transactions with ego than alters named in Ring 2.*
2. *Alters named in Ring 2 will engage in more support transactions with ego than alters named in Ring 3.*

Table 7 indicates that the number of support transactions that alters have with ego is related to the ring placement of the alters' names. Panel A shows that 88.9% of the alters engaged in 5 support transactions and 81.5% of the alters engaged in more than 5 support transactions were named in Ring 1. Only 45.2% of the alters engaged in 1 support transaction with ego were named in this ring. Panel B shows that there were significant differences in the mean number of exchanges across the rings. The Tukey HSD test reveals that these significant differences were between Ring 1 and Ring 2, and Ring 1 and Ring 3. Therefore, the predicted hierarchical pattern of the amount of support is not totally supported.

Studies of the social support transactions of the elderly often focus only on the support provided to ego (e.g., Townsend and Poulshock, 1986; Peters et al., 1987; Schuster and Butler, 1989). To determine whether the direction of the support transactions (i.e., received from alter versus provided to alter) had affected the results in Table 7, I conducted similar analyses of the relationships between ring placement and the number of support

**Table 7.** Total of All Specific Support Exchanges between Ego and Alter, by Ring Placement (%)

Ring	A. Number of Support Exchanges							Total (N)
	0	1	2	3	4	5	>5	
Ring 1	33.3	45.2	53.5	79.2	60.0	88.9	81.5	(168)
Ring 2	37.9	30.6	34.9	20.8	33.3	11.1	14.8	(116)
Ring 3	28.8	24.2	11.6	--	6.7	--	3.7	( 73)
Totals (N)	100.0 (177)	100.0 (62)	100.0 (43)	100.0 (24)	100.0 (15)	100.0 ( 9)	100.0 (27)	(357)

Chi-square = 49.98

 $p < .05$ , d.f. = 12

gamma = .45

B. Mean Support Transactions Per Ring			
	Ring 1	Ring 2	Ring 3
Mean Number of Support Transactions Per Ring	2.2 (2.6)	1.0 (1.6)	0.5 (1.0)

 $F(2, 354) = 22.60$ ,  $p < .05$ Tukey's HSD ( $p \leq .05$ ):

Ring 1 and Ring 2

Ring 1 and Ring 3

Note: standard deviations are in parentheses

transactions both received from alter and provided to alter. The findings (not reported here) for each analysis were identical to the overall analysis reported in Table 7.

It is important to note from Table 7 that 49.6% of the 357 alters named on the target diagram were not reported as engaging in any of the 45 support transactions with ego tapped by the Specific Support Questions. One third of these alters were named in Ring 1; 37.9% in Ring 2 and 28.8% in Ring 3. Therefore, although the findings of this prediction test confirmed that alters named in Ring 1 engaged in the most support transactions with ego, the fact that a substantial portion of the alters in this ring and in the other two rings were not involved in any of the support transactions tapped by the Specific Support Questions must be taken into account.

3. *Alters named in Ring 1 will exchange more kinds of support with ego than alters named in Ring 2.*
4. *Alters named in Ring 2 will exchange more kinds of support with ego than alters named in Ring 3.*

My classification of the kinds of support into emotional support, instrumental support and companionship support means that for this test, the maximum number of the kinds of support transactions that can occur between ego and alter is three. Panel A of Table 8 shows that of the alters engaged in 3 kinds of support transactions with ego, 82.9%

**Table 8.** Kinds of Support Transactions Between Ego and Alter, by Ring Placement (%).

A. Kinds of Support					
Ring	None	One Kind	Two Kinds	Three Kinds	Total (N)
Ring 1	33.3	63.8	48.9	82.9	(168)
Ring 2	37.9	27.7	32.6	14.6	(116)
Ring 3	28.8	8.5	18.5	2.5	( 73)
Totals (N)	100.0 (177)	100.0 (47)	100.0 (92)	100.0 (41)	(357)

Chi-square = 43.11  
 $p < .05$ , d.f. = 6  
gamma = .40

B. Mean Kinds of Support Per Ring			
	Ring 1	Ring 2	Ring 3
Mean Kinds of Support Transactions Per Ring	1.3 (1.2)	0.8 (1.0)	0.6 (0.9)

$F(2, 354) = 16.42$ ,  $p < .05$   
Tukey's HSD ( $p \leq .05$ ):  
Ring 1 and Ring 2  
Ring 1 and Ring 3

Note: standard deviations are in parentheses

were named in Ring 1, 14.6% were named in Ring 2 and 2.5% were named in Ring 3. Panel B shows that there were significant differences in the mean number of kinds of support across the rings. The Tukey HSD test reveals that these significant differences were between Ring 1 and Ring 2, and Ring 1 and Ring 3. Therefore, the predicted hierarchical pattern of the kinds of support exchanged is not totally supported.

These results are consistent with Wellman and Wortley's (1990:566) finding that strong ties provide broader support than weaker ties. The tests of the Convoy Structure Prediction have already demonstrated that most of the alters named with the target diagram represent strong ties. However, Table 8 also repeats the finding from Table 7 above and shows that 177 of the 357 target diagram alters were not engaging in any of the three kinds of support tapped by my emotional support, instrumental support and companionship support classification of support transactions. This finding suggests that the target diagram alters may not all be related to ego in terms of social support.

### Overall Predictions

1. *All of the alters named on the target diagram will engage in social support transactions with ego.*
2. *All of the alters who engage in support transactions with ego will be named on ego's target diagram.*



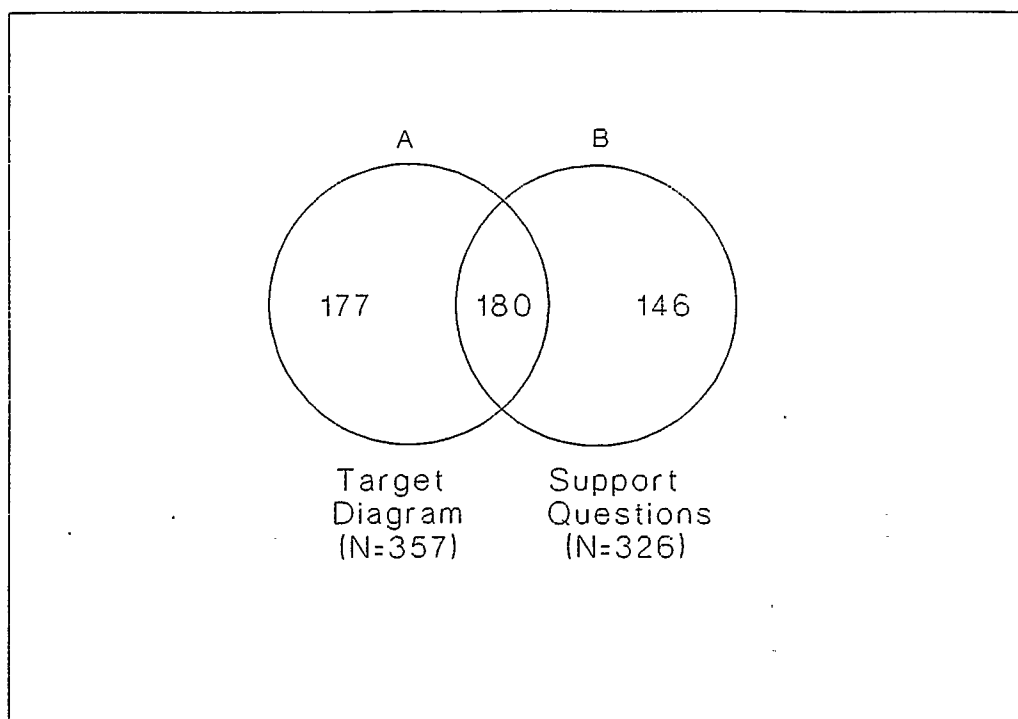


Figure 4: Venn Diagram Representation of Alters named with Alternative Name Generators (N=503)

Figure 4 presents a Venn Diagram representation of my comparison of the alters named with the alternative name generators. Circle A represents the alters named with the intimacy constraint of the CNS target diagram (N=357). Circle B represents the alters named with the relational content constraints of the Specific Support Questions. The intersection set represents the alters who were named with both the target diagram and the Specific Support Questions.

Of the total number of different alters named with these two name generators (N=503), only 35.8% (N=180) were named with both the target diagram and the Specific Support Questions. This intersection set of 180 alters represents

49.6% of the alters named with the target diagram and 55.2% of the alters named with the Specific Support Questions.

It is clear from Figure 4 that Kahn and Antonucci's overall predictions about convoy functions are not supported. Prediction 1 is not supported because 177 of the 357 alters who were named with the target diagram were not identified by my respondents as supportive or supported others in terms of any of the range of support transactions tapped by the various Specific Support Questions. It is possible that these alters were engaging in support transactions that were not tapped by the CNS Specific Support Questions. This explanation seems unlikely for two reasons. First, the CNS Specific Support Questions include a broad range of the kinds of support transactions routinely found in studies of the social support transactions of the elderly and in studies of social support transactions more generally. Therefore, it is likely that the kinds of support transactions that are important to my respondents would be tapped by the these questions. Second, when my respondents provided the qualitative information about the criteria they used to select their target diagram alters, they did not indicate that these alters were involved in any other kinds of support transactions with them. These 177 alters were most often described by my respondents in terms of either role obligation, such as one woman who said she included a Ring 3 alter because "Well, she's my cousin" or in terms of

some aspect of the past relationship history between ego and alter. Consider, for example, one woman with no overlap between the alters named with her target diagram and those named with the Specific Support Questions. Her target diagram included her childhood minister who she said had given her "the earnestness of the faith" and two very elderly friends of her deceased parents of whom she confessed "I'm ashamed to say I don't even know if they are living or dead, but they were very important to me as a child". Another woman included a friend with Alzheimer's disease who didn't recognize her anymore on her target diagram, remarking "but we used to be close". These examples support my conclusion that, contrary to the argument of Kahn and Antonucci, the alters named on the target diagrams of some of my respondents do not represent people with whom they currently engage in support transactions.

The 146 alters who were named with the Specific Support Questions and not the target diagram were identified as engaging in the range of support transactions tapped by the various Specific Support Questions with my respondents. These alters, who are known to be perceived supportive and supported others, were not named with the target diagram. Therefore, Prediction 2 is not supported.

If the target diagram had been used as the only name generator in the Cochrane Network study, then the 146 alters

generated by the Specific Support Questions would have been missed. What are the consequences of excluding these 146 alters from the support networks that Kahn and Antonucci would argue are identified with my respondents' target diagrams? Are there any differences in the support functions of the networks represented by the 180 alters named in the intersection set and the 146 alters named only with the Specific Support Questions? And if there are differences, what, if any, are the implications of these differences for understanding the support transactions of the elderly?

To address these questions, I compared both the structures and the functions of the convoys represented by these two groups of alters using two sample tests for differences between proportions (Loether and McTavish, 1988: 575-579). The results of this analysis are presented in Table 9. Because it has already been shown that the alters named with the target diagram are "close" and "important" to ego, it is not surprising that the 180 alters in the intersection set represent a network structure of strong ties. 43.3% of the alters in this group are immediate family members. Panel A of Table 10 shows that 77.9% of the friends that are included in the intersection set are identified as "close friends" or "very close friends". There are very few other family members, neighbours or others in this group. Of the 13 neighbours, 69.2% are identified as "close friends" or "very close friends".

**Table 9.** Comparison of the Characteristics of the Alters Named with Alternative Name Generators (%)

Variable	Alter Group		
	TD and SSQs (N=180)	SSQs Only (N=146)	All Alters (N=503)
<i>Relation</i>			
Immediate Family	43.3*	12.3*	22.9
Other Family	5.6*	11.6*	15.3
Friends	42.8*	54.8*	47.7
Neighbours	7.2	11.0	8.2
Others	1.1*	10.3*	5.9
Totals	100.0	100.0	100.0
<i>Closeness (Two Degrees)</i>			
"Especially Close"	72.2*	37.7*	53.9
Not "Especially Close"	27.8*	62.3*	46.1
Totals	100.0	100.0	100.0
<i>Closeness (Five Degrees)</i>			
Acquaintances	1.1*	11.6*	7.2
Just Friends	10.6*	25.3*	18.5
Close Friends	26.7	32.2	30.6
Very Close Friends	39.4*	25.3*	31.4
Other	22.2*	5.6*	12.3
Totals	100.0	100.0	100.0
<i>Time Known</i>			
Less than 6 years	13.3*	37.7*	22.3
6 to 35 years	35.6	42.5	37.2
Over 35 years	51.1*	19.8*	40.5
Totals	100.0	100.0	100.0

\* proportions significantly different,  $p < .05$

**Table 9.** Continued... Comparison of Alters Named with Alternative Name Generators (%)

Variable	Alter Group		
	TD and SSQs (N=180)	SSQs Only (N=146)	All Alters (N=503)
<i>Geographical Proximity</i>			
Cochrane	56.1	56.8	46.7
Calgary	17.8	18.5	17.5
Inside Alberta <sup>a</sup>	11.7	11.6	14.3
Outside Alberta	14.4	13.1	21.5
Totals	100.0	100.0	100.0
<i>Frequency of Contact</i>			
Daily	15.0	8.9	8.3
Weekly	54.4*	38.4*	39.6
Monthly	21.7	30.8	26.6
Infrequently	8.9*	21.9*	25.5
Totals	100.0	100.0	100.0
<i>Number of All Support Transactions</i>			
no transactions	--	--	35.2
1 transaction	34.4*	54.8*	28.2
2 transactions	23.9	26.7	16.3
3 transactions	13.3	8.9	7.4
4 transactions	8.3	4.8	4.4
5 transactions	5.0*	1.4*	2.2
>5 transactions	15.1*	3.4*	6.3
Totals	100.0	100.0	100.0

<sup>a</sup> excluding Cochrane and Calgary\* proportions significantly different,  $p < .05$

**Table 9.** Continued... Comparison of Alters named with Alternative Name Generators (%)

Variable	Alter Group		
	TD and SSQs (N=180)	SSQs Only (N=146)	All Alters (N=503)
<i>Number of Supports Received from Alter</i>			
no transactions	44.4*	58.9*	68.2
1 transactions	25.6	28.1	17.3
2 transactions	15.6	11.0	8.7
3 transactions	8.9*	1.4*	3.6
4 transactions	2.8	0.6	1.2
5 transactions	2.7*	0.0*	1.0
Totals	100.0	100.0	100.0
<i>Number of Supports Provided by Ego</i>			
no transactions	38.9*	60.3*	66.6
1 transactions	32.8	26.7	19.5
2 transactions	11.7	8.9	6.8
3 transactions	10.0*	3.4*	4.6
4 transactions	3.9*	0.7*	1.3
5 transactions	1.7	0.0	0.6
>5 transactions	1.0	0.0	0.6
Totals	100.0	100.0	100.0
<i>Kinds of Support Transactions between Ego and Alter</i>			
none	--	--	35.2
one kind	26.1*	39.0*	20.7
two kinds	51.1	50.7	33.0
three kinds	22.8*	10.3*	11.1
Totals	100.0	100.0	100.0

\* proportions significantly different,  $p < .05$

**Table 10.** Cross Tabulation of Relationship and Closeness, for (A) Alters Named with the Target Diagram and with the Specific Support Questions and (B) Alters Named only with the Specific Support Questions (%)

A. Relationship for TD and SSQs Alters						
Closeness	Immed Family (N=78)	Other Family (N=10)	Friend (N=77)	Neighbour (N=13)	Other (N=2)	Total (N) (N=180)
Acquain	--	--	1.3	7.7	--	( 2)
Just Fr	--	--	20.8	23.1	--	(19)
Close Fr	10.3	10.0	42.9	38.5	50.0	(48)
V Cl Fr	48.7	20.0	35.0	30.7	--	(71)
Other	41.0	70.0	--	--	50.0	(40)
Totals	100.0	100.0	100.0	100.0	100.0	(180)
Esp Close	88.5	30.0	68.8	38.5	--	(130)
Not Close	11.5	70.0	31.2	61.5	100.0	( 50)
Totals	100.0	100.0	100.0	100.0	100.0	(180)
B. Relationship for SSQs Only Alters						
Closeness	Immed Family (N=18)	Other Family (N=17)	Friend (N=80)	Neighbour (N=16)	Other (N=15)	Total (N) (N=146)
Acquain	5.6	11.8	7.5	25.0	26.7	(17)
Just Fr	5.6	--	26.3	56.3	40.0	(37)
Close Fr	27.8	41.2	37.5	18.7	13.3	(47)
V Cl Fr	44.4	41.2	26.3	--	6.7	(37)
Other	16.6	5.8	2.4	--	13.3	( 8)
Totals	100.0	100.0	100.0	100.0	100.0	(146)
Esp Close	55.6	29.4	43.8	6.3	26.7	(55)
Not Close	44.4	70.6	56.2	93.7	73.3	(91)
Totals	100.0	100.0	100.0	100.0	100.0	(146)



In comparison, the network structure represented by the 146 alters who were named only with the Specific Support Questions consists of weaker ties. There are fewer immediate family members (12.3%), and more other family members (11.6%), friends (54.8%) and others (10.3%) than in the network structure represented by the intersection set of alters. Panel B of Table 10 shows that more alters in all relationship categories, including immediate family, are identified as "acquaintances" or "just friends" in the group of alters named only with the Specific Support Questions than the group of alters in the intersection set. These weaker relationships are particularly evident for neighbours and others.

Alters who were named only with the Specific Support Questions tended to be more recent acquaintances of ego than alters in the intersection set. Almost 40.0% of these alters had been known by ego for less than 6 years compared with just over 13.0% of the alters in the intersection set. Only about 20.0% of the alters named with the Specific Support Questions had known ego for over 35 years compared with 51.1% of the alters in the intersection set who had known ego for this length of time. It is of interest to note that there were no significant differences in the geographical proximity of ego's residence to alter's between the two groups. Over half of each group lived in Cochrane. Alters named only with the Specific Support Questions were less

likely to be in weekly contact with ego and more likely to be in infrequent contact with ego than alters in the intersection set.

Table 9 also shows that there are differences in both the number and kind of support transactions between ego and the alters in these groups. The 180 alters in the intersection set were more likely to engage in a greater number of support transactions with ego than the 146 alters named only with the Specific Support Questions. Over 40.0% of the intersection set alters engaged in 3 or more support transactions with ego compared with just 18.5% of alters named only with the Specific Support Questions. Of the 180 alters in the intersection set, 34.4% engaged in only 1 support transaction with ego compared with 54.8% of their counterparts in the alter group of 146. This pattern was the same for both support received by ego from alter and support provided to alter by ego.

Alters in the intersection set were also more likely to engage in more kinds of support transactions with ego than alters named only with the Specific Support Questions. Table 9 shows that although about half of each group had engaged in two of the three possible kinds of support transactions with ego, more alters in the intersection set were involved in all three kinds of support transactions than alters named only with the Specific Support Questions -- 22.8% compared with 10.3%. These findings suggest that the stronger ties

represented by the 180 alters in the intersection set are more likely to be multiplex in terms of both the amount and the kind of support transactions between ego and alter than the weaker ties represented by the 146 alters identified only with the Specific Support Questions. This result is not surprising. Marsden and Campbell (1984:484) note that the extent of multiplexity within a tie is a "plausible indicator of tie strength".

To determine whether or not the differences in the support functions of the networks represented by these two groups of alters were related to any one particular type of support transaction (e.g., instrumental support received by ego, or companionship support between ego and alter), I did a fine-grained comparison of the 31 different kinds of possible combinations of support transactions between ego and alter for each group. The results of this analysis, presented in Table 11, show that there were a number of differences and similarities in the support functions of the networks represented by the two groups. My respondents were more likely to name alters from whom they received instrumental support exclusively in the group of alters named with only the Specific Support Questions than in the alters named in the intersection set -- 11.0% compared with 1.7%. This finding is not totally unexpected in light of some arguments that weaker ties tend to provide instrumental

**Table 11.** Support Transaction Combinations for Alters Named with the Target Diagram and with the Specific Support Questions and Alters Named only with the Specific Support Questions (%)

Support Combination	TD and SSQs Alters		SSQs Only Alters	
1. ER	( 9)	5.0	( 6)	4.1
2. EP	(13)	7.2	( 9)	6.2
3. IR	( 3)	1.7*	(16)	11.0*
4. IP	( 8)	4.4	(14)	9.6
5. C	(39)	21.7*	(52)	35.5*
6. ER+EP	( 4)	2.2	( 1)	0.6
7. IR+IP	( 8)	4.4	( 8)	5.5
8. ER+IR	( 8)	4.4	( 4)	2.7
9. ER+IP	( 1)	0.6	( 1)	0.6
10. EP+IR	( 1)	0.6	( 1)	0.6
11. EP+IP	( 2)	1.1	( 1)	0.6
12. EP+C	(15)	8.3	( 6)	4.1
13. ER+C	( 2)	1.1	( 3)	2.1
14. IP+C	( 2)	1.1	( 2)	1.3
15. IR+C	( 7)	3.9	( 7)	4.8
16. EP+IR+C	( 2)	1.1	( 1)	0.6
17. EP+IP+C	( 1)	0.6	( 2)	1.3
18. ER+IR+C	( 2)	1.1	( 0)	0.0
19. ER+IP+C	( 4)	2.2	( 3)	2.1
20. ER+EP+C	( 4)	2.2	( 5)	3.4
21. IR+IP+C	( 3)	1.7	( 1)	0.6
22. ER+EP+IR	( 2)	1.1	( 0)	0.0
23. ER+EP+IP	( 1)	0.6	( 0)	0.0
24. ER+IR+IP	( 3)	1.7	( 0)	0.0
25. EP+IR+IP	( 5)	2.8*	( 0)	0.0*
26. ER+EP+IR+IP	( 8)	4.4*	( 0)	0.0*
27. EP+ER+IR+C	( 3)	1.7	( 0)	0.0
28. EP+ER+IP+C	( 4)	2.2*	( 0)	0.0*
29. IP+IR+ER+C	( 1)	0.6	( 0)	0.0
30. IP+IR+EP+C	( 1)	0.6	( 1)	0.7
31. ER+EP+IR+IP+C	(14)	7.7*	( 3)	2.1*
Totals	(180)	100.0	(146)	100.0

\* proportions significantly different,  $p < .05$

Key: ER = Emotional support received by ego from alter

EP = Emotional support provided by ego to alter

IR = Instrumental support received by ego from alter

IP = Instrumental support provided by ego to alter

C = Companionship support between ego and alter

Note: frequencies are in parentheses

rather than emotional support (e.g., Peters and Kaiser, 1985; Peters et al., 1987; Wellman and Wortley, 1990). What is more surprising, however, is that there are a number of ties in both groups that are characterized by emotional support. 7.2% of the alters in the intersection set and 6.2% of the alters named only with the Specific Support Questions are characterized exclusively by ego's provision of emotional support to alter. Many of the other support transaction combinations that represent the convoy functions for both of these two networks of alters involve some kind of emotional support. This finding contradicts the argument made by some researchers that only strong ties are important for the provision of emotional support (e.g., Lin, 1986; Lin et al., 1986; Lin and Ensel, 1989; Wellman and Wortley, 1990), and supports recent arguments that "the predominance of strong ties is much less consequential [for access to social support] than previous research has suggested" (Haines and Hurlbert, 1992).

This detailed analysis also highlights the importance of companionship support. Support transactions which involved this kind of support exclusively were the most common single-plex transaction in both the network represented by the intersection set of 180 alters (21.7%) and network represented by the 146 alters named only with Specific Support Questions (35.6%). Companionship support also figured in many of the combinations of support

transactions that characterized the networks of both groups. This finding is not unexpected given the wide range of socializing activities that were contained in these two name generating questions. Many CNS respondents who may have indicated only one or two alters in response to questions about lending money or discussing personal matters, named 6 or more alters in response to these questions. von Sonderen et al. (1990:115) also found that name generators about social activities did tend to elicit more names. However, the predominance of this kind of support transaction is also consistent with arguments that promote companionship support as an important form of support. For example, Fischer (1982) and Wellman and Wortley (1990) respectively identified socializing and companionship as important parts of their typologies of social support. Connidis and Davies (1992:S115) argue that this kind of support is important for the elderly because "companionship enhances recreation and social interaction, the absence of which has been shown to lead to unhappiness."

Taken together the comparisons of the structural and functional characteristics of the networks represented by these two groups of alters reveal differences that are consequential in terms of the support networks or "convoys" of my respondents. If the 146 alters identified only with the Specific Support Questions had been excluded, only part of the larger support networks of my respondents would have

been identified. This omission would not only exclude important conduits of all kinds of support but also reinforce widely accepted arguments that close and intimate ties are the most supportive ties. My results demonstrate that weaker ties are important in terms of social support and like Schuster and Butler (1989) who used a target diagram and procedure almost identical to Kahn and Antonucci's original methodology to study how the elderly utilize their support networks to cope with bereavement, they show that not all of the intimate ties represented by the alters named on my respondents' target diagrams are supportive.

## CHAPTER 6

### CONCLUSION

Since the mid 1970s, research involving the concept of social support has been characterized by ongoing debates about how to conceptualize and measure social support. Kahn and Antonucci's (1980) Convoy Model of Social Support addresses these debates by maintaining conceptual and empirical distinctions between network structure and social support. Drawing on insights from social network analysis, this structural functional-approach to studying social support concentrates on first distinguishing an individual's support system from his or her overall larger set of social relationships and then examining the types of support transactions that occur within the structure of this support system. The Convoy Model now dominates network studies of the social support transactions of the elderly.

The Convoy Model uses the name generator-name interpreter sequence to collect data on the social networks and social support transactions of the elderly. However, separating network structure and social support is only the first step in developing a network approach to the study of social support. Serious attention must be given to issues surrounding the collection of survey network data, particularly boundary specification, to ensure that the set of social relationships that make up an individual's support



network are indeed being identified. As my discussion of the name generator-name interpreter sequence makes clear, different name generators "dredge up" (Bernard et al., 1987) different parts of an individual's personal network.

To identify respondents' networks of supportive and supported others, Kahn and Antonucci use the intimacy constraint of their target diagram. My assessment of The Convoy Model demonstrates first that this type of name generator identifies only part of an individual's support network--a subset consisting of strong and intimate ties--and second that the weaker ties that it excludes are consequential in terms of social support. Because the CNS target diagram had a less stringent intimacy constraint than Kahn and Antonucci's original device, it is likely that using the original instructions would have identified an even narrower subset of strong ties. I would therefore question Antonucci's (1986:11) claim that the target diagram has been "universally successful" in identifying "social support networks". My results suggest that the published findings of Antonucci, her colleagues and others who have used The Convoy Model's approach (e.g., Townsend and Poulshock, 1986; Schuster and Butler, 1989; Morgan et al., 1991) should be reinterpreted as investigations of the support transactions among the "core intimate networks"<sup>14</sup> of their elderly respondents, rather than descriptions of the "social support networks of older adults" (Antonucci and

Akiyama, 1987a:519).

It is important to note that Kahn and Antonucci's original 1980 Supports of the Elderly survey used a national probability sample. In comparison, my study is limited by its rural location and by the size and composition of its sample. Variations in social networks and social support transactions by location (e.g., Fischer, 1982; Antonucci, 1990), by gender (e.g. Antonucci and Akiyama, 1987b; Moore, 1990) and by marital status (e.g., Schuster and Butler, 1989; Antonucci, 1990) have been found in previous studies. Nevertheless, the findings of my assessment of The Convoy Model do have important implications for network studies of the social support transactions of the elderly.

Like other recent studies (e.g., Schuster and Butler, 1989; Wellman and Wortley, 1990; Haines and Hurlbert, 1992), I found that not all of my respondents' intimate ties were supportive and that their weaker ties were important conduits of all types of social support. These findings challenge arguments made by some researchers (e.g., Lin et al., 1986; Lin and Ensel, 1989) that promote emotional support provided by strong ties as the central issue in the study of social support. My results suggest that a variety of ties and types of support are consequential in the support process. Examining a broader range of ties and types of support in future studies may provide more comprehensive understandings of the informal support networks of the

elderly. Policy makers who are concerned with designing and implementing support services and intervention programs for this steadily growing segment of the population can also benefit from more comprehensive understandings of the informal support networks of the elderly. Such knowledge can contribute to the goal of developing of a more efficient and effective balance between formal and informal support services for this age group (Chappell, 1990).

Consistent with my earlier discussion of the consequences of using alternative name generators, I found that the subset of alters that were identified by my respondents with the relational content constraints of CNS Specific Support Questions provided a better representation of their support networks than the subset of alters identified with the CNS target diagram. This finding suggests that if the purpose of a research project is to identify respondents' support networks, then using name generators with relational content constraints, rather than intimacy constraints, is a more appropriate strategy. This strategy does not limit the identification of supportive or supported others to only one particular portion (i.e., intimates) of the support network. Nor does it preclude identifying close ties as conduits of social support.

If the purpose of a research project is to examine support transactions among the respondents' intimate networks, then the target diagram may be a suitable name

generator. However, because my findings suggest that the alters generated by the target diagram are characterized by two and not three levels of intimacy, the device could be modified to include only two outer rings. My findings also demonstrate that some important intimates, particularly spouses, were not always identified with the intimacy constraint of the target diagram. Researchers should be cognizant of this problem of "the taken-for-granted associate" and may address it by including alternative name generators, such as those identifying household members or immediate family members, in their interview schedules. A further practical concern with using the target diagram to identify intimates is that collecting full name interpreter information for all of the alters named with the target diagram is very time consuming and consequently may be impractical or too expensive for large studies. Perhaps the best strategy for identifying a respondent's intimates would be to use a different intimacy constraint name generator, such as "Who do you feel especially close to?", which Burt (1984:324) points out has "been used successfully to identify particularly intimate associates in the past".

More generally, my assessment of The Convoy Model of Social Support emphasizes the importance of recent arguments that advise social network analysts to consider more seriously the issues of data collection in social network research (e.g., Marsden, 1987,1990; van Sonderen et al.,

1990; Campbell and Lee, 1991). To date, network studies of the social support transactions of the elderly have paid little attention to boundary specification and the consequences of using alternative name generators. Although Morgan (1988:S136) did suggest in his study of age differences in social network participation "that a different means of defining the network...might produce different results", my findings establish empirically that such differences do occur. Recognizing this fact is important not only for network studies of the social support transactions of the elderly, but also for any network study involving the concept of social support.

## ENDNOTES

<sup>1</sup> This approach differs from other network analysts (eg., Lin et al., 1986; Lin and Ensel, 1989) who use structural characteristics of networks to construct network measures of social support.

<sup>2</sup> The Cochrane Network Study is funded by a University of Calgary Research Committee Grant to V.A. Haines.

<sup>3</sup> This figure includes all households that were identified with both municipal addresses and legal land descriptions. The total number of households was 166. All figures for the Town of Cochrane 1992 Municipal Census come from the *Town of Cochrane Population Affidavit Information -- 1992* (Calgary Regional Planning Commission, 1992) and personal communication with Lorie Pesowski at the Calgary Regional Planning Commission.

<sup>4</sup> This figure is based on the final sampling frame of 130 households. Households where an invitation was returned as undeliverable (N=15), or ineligible (i.e., no one in that household was aged 65 or over) were not included in the final sampling frame.

<sup>5</sup> The other interested household members aged 65 or over, in all cases the spouse of the interviewee, were given the opportunity to complete a self-administered booklet of questions similar to the CNS interview schedule.

<sup>6</sup> In 11 of the 12 households containing married couples, both partners were equally willing to participate in the study. One man could not participate for health reasons.

<sup>7</sup> Name interpreter information was only collected for alters who were individually identified by name. Groups of alters, such as "church friends" or "former professional colleagues" which some respondents placed on their target diagrams were not included.

<sup>8</sup> None of my respondents named any alters in response to this question. Because all of my respondents were retired, this finding was not surprising.

<sup>9</sup> It is of interest to note that there were no statistically significant differences in the average number of alters named with the target diagram and the average number of alters named with the social support questions. This finding is different from von Sonderen et al., (1990) who found that the specific support questions generated a larger number of

alters than a modified version (i.e., 2 rings only) of the target diagram.

<sup>10</sup> Responses given in this final category included professional relationships, such as doctor/patient, or minister/congregation member, and a number of family relationships that respondents were reluctant to identify in terms of friendship (e.g., "I'd say she was something else--she's my sister").

<sup>11</sup> Although it appears that questions about instrumental support transactions are overrepresented in the Specific Support Questions, it is important to note that 26 of these questions are about ADLs and IADLs. Only 39 alters out of the 573 alters named by my respondents were named in response to these questions. And of these 39 alters, only 7 were named in response to the ADLs or IADLs questions alone.

<sup>12</sup> This figure was determined with a cross tabulation of the "Five Degree of Closeness" measure with relationship to ego.

<sup>13</sup> Marsden and Campbell (1984) found that frequency of contact figures are affected by the number of household members in the analysis. However, only 5 of the 29 alters in daily contact with alter in this analysis were household members (3 spouses and 2 adult children).

<sup>14</sup> To develop this term I follow the example of Marsden (1987) who described the alters named in response to the name generator question included in the 1985 General Social Survey (GSS) as the "core discussion networks of Americans". The 1985 GSS name interpreter question was "From time to time, most people discuss *important matters* with other people. Looking back over the past six months--who are the people with whom you discussed important matters. Just tell me their first names or initials." (cited in Marsden, 1987:123, emphasis in original). Name interpreter information was then collected for the first 6 alters named.

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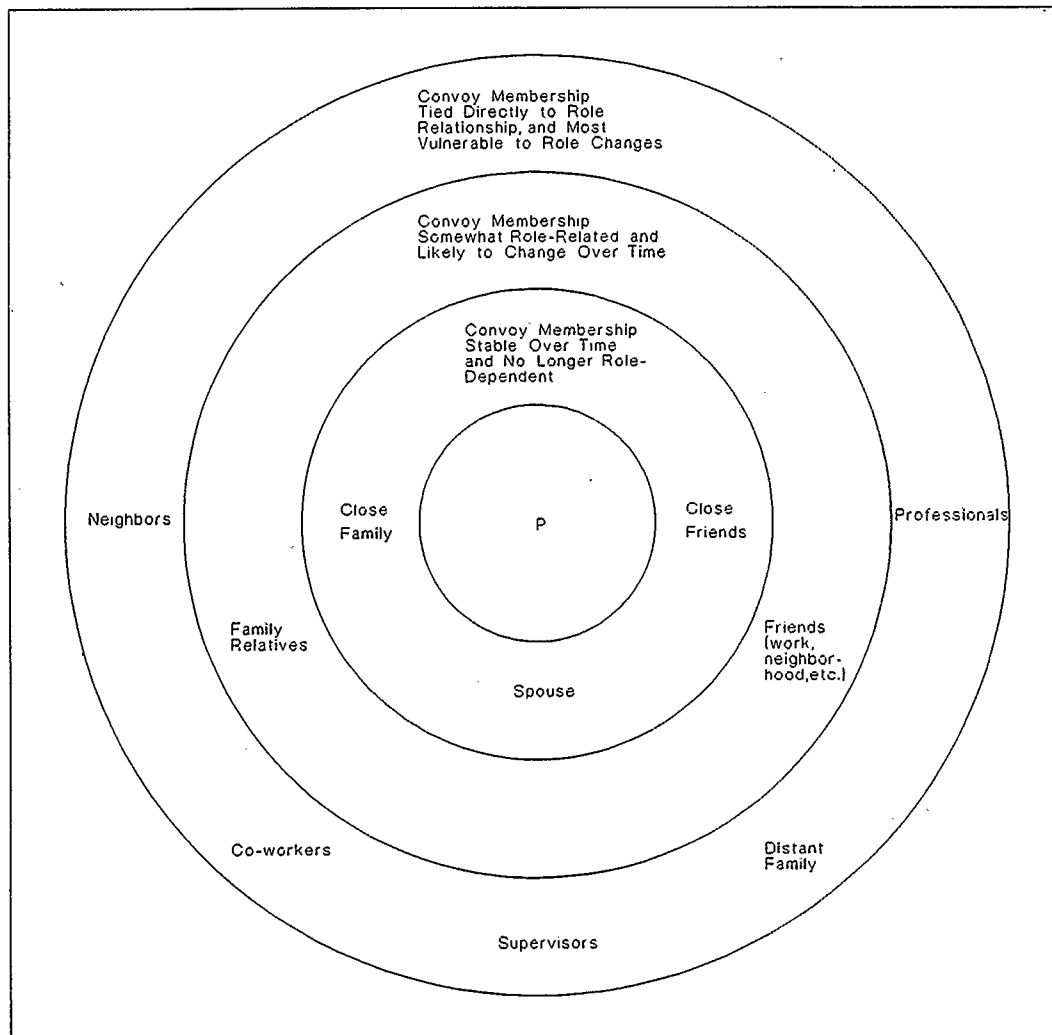


Figure 1: Conceptual Representation of the Convoy  
Source: Kahn and Antonucci, 1981:397



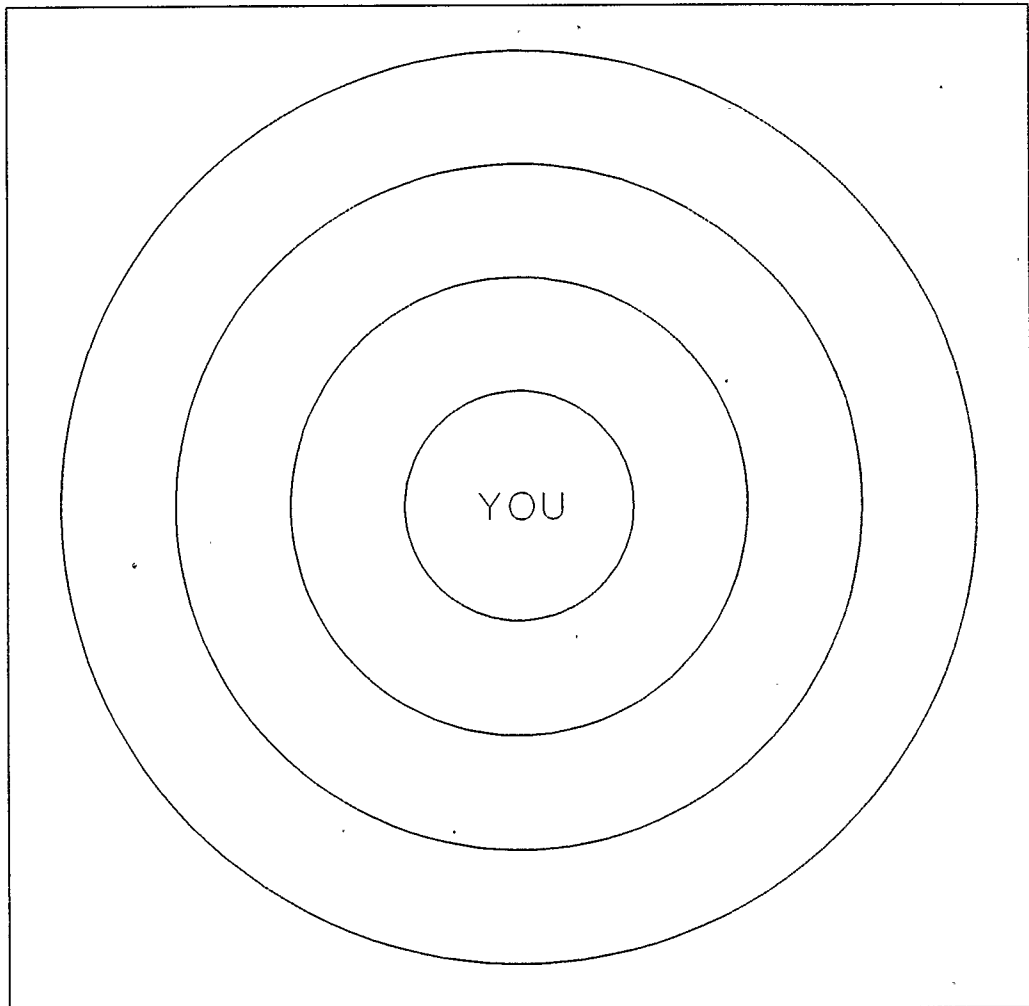


Figure 2: Network Diagram  
Source: Antonucci, 1985a:100

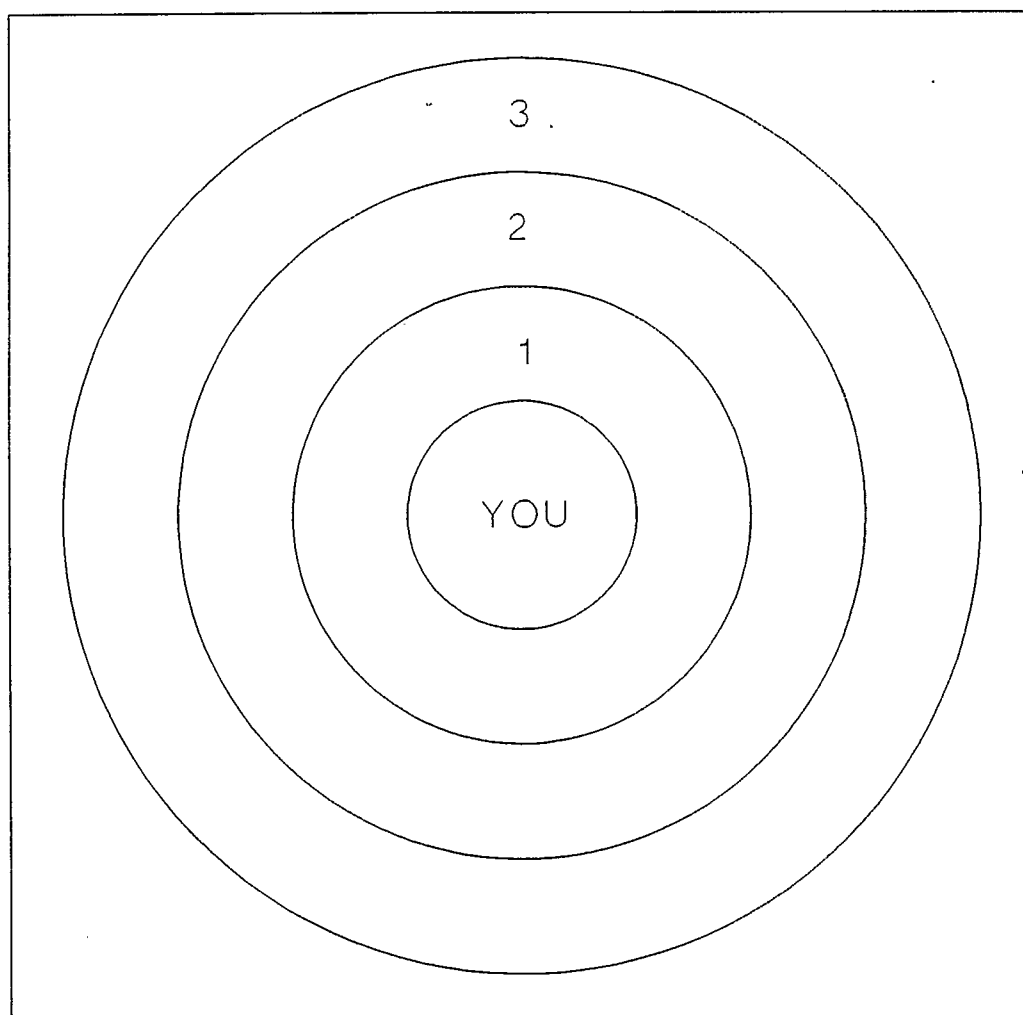


Figure 3: Cochrane Network Study Target Diagram

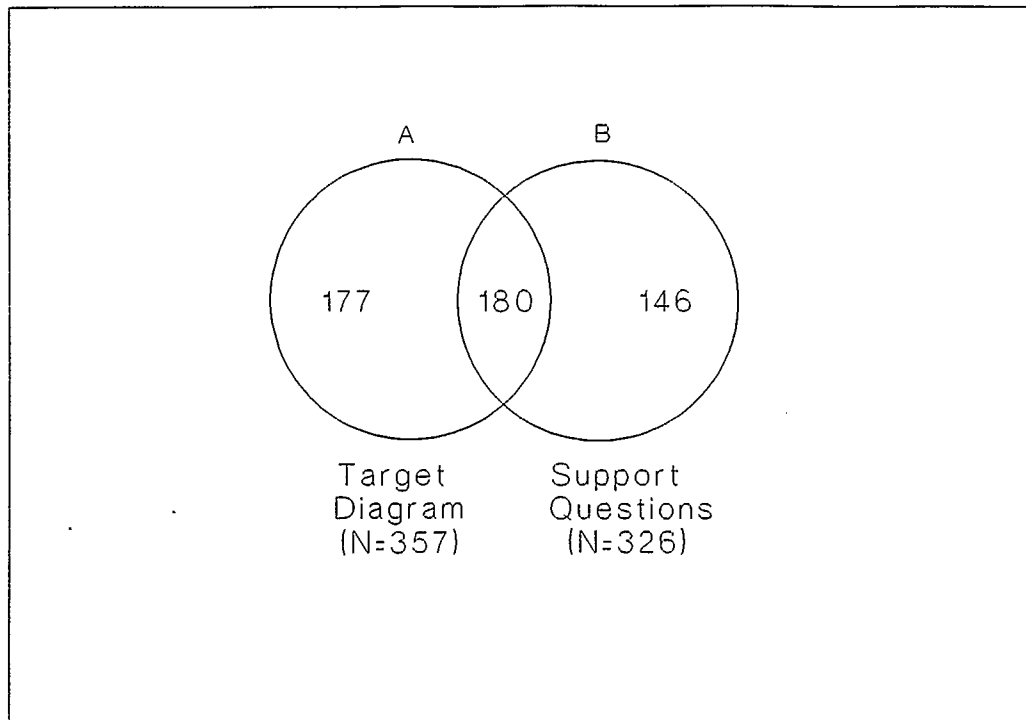
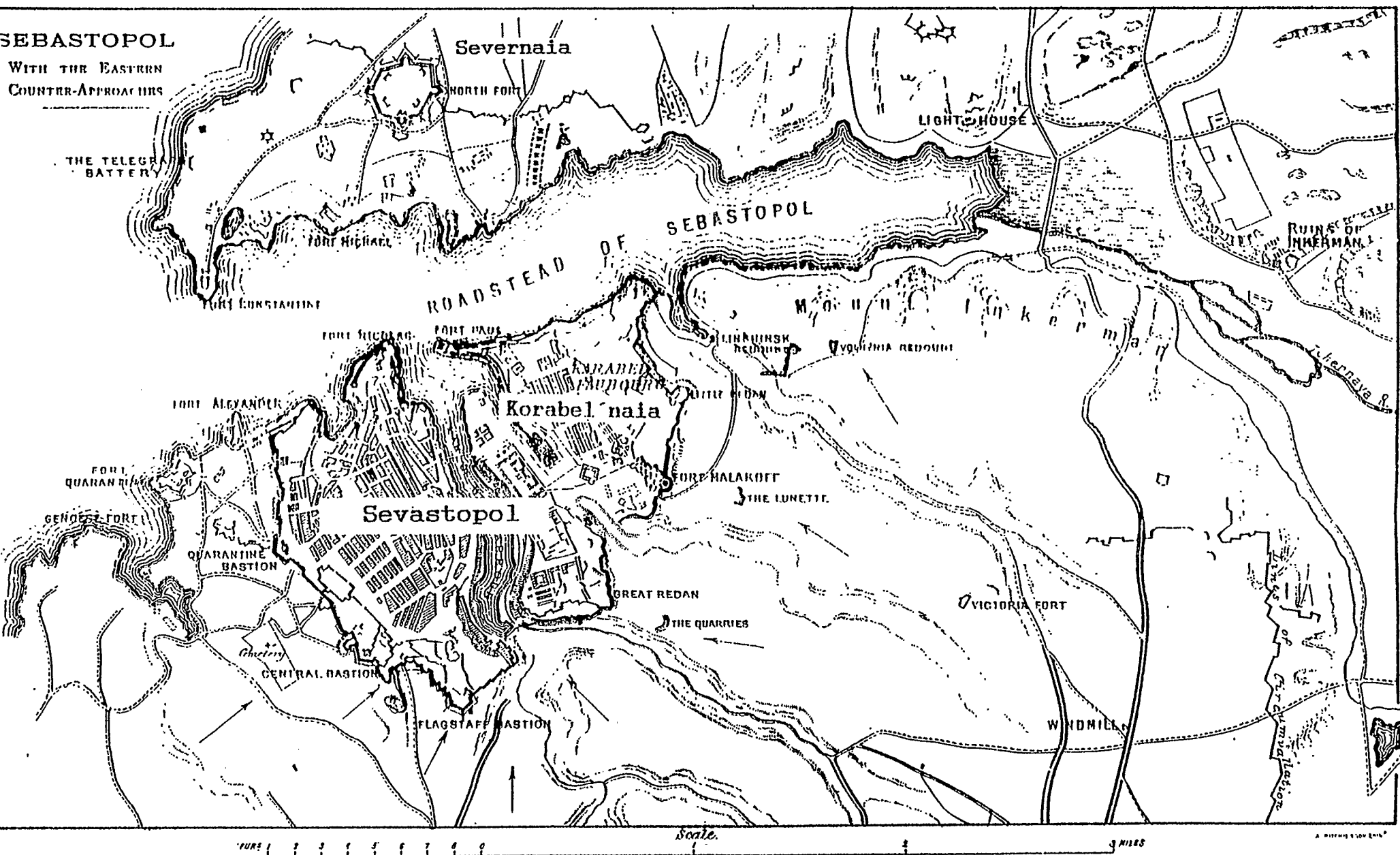


Figure 4: Venn Diagram Representation of Alters named with Alternative Name Generators (N=503)

Figure 4 presents a Venn Diagram representation of my comparison of the alters named with the alternative name generators. Circle A represents the alters named with the intimacy constraint of the CNS target diagram (N=357). Circle B represents the alters named with the relational content constraints of the Specific Support Questions. The intersection set represents the alters who were named with both the target diagram and the Specific Support Questions.

Of the total number of different alters named with these two name generators (N=503), only 35.8% (N=180) were named with both the target diagram and the Specific Support Questions. This intersection set of 180 alters represents



Map 6. Map of Sevastopol's Fortifications

(adapted from Kinglake, VIII, Frontpiece)