

Attachment, social support and loneliness in later life

by

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ABSTRACT

The purpose of this research was to study attachment, social support and loneliness in older adults. Tasks were to discover if (a) adult attachment in later life would replicate patterns found in prior research, (b) a stagewise block regression model including attachment would predict loneliness, (c) attachment would moderate the relationship between enacted support and loneliness, and (d) attachment would moderate the relationship between satisfaction with enacted support and loneliness.

Measures used were the UCLA Loneliness Scale--Version 3 (Loneliness), The Relationship Questionnaire (Attachment), The Inventory of Socially Supportive Behaviors (Enacted Received Social Support), and a one-item measure created for this study (Satisfaction with enacted received social support). Exogenous demographic variables were also included in the model.

The Dillman Tailored Design method was used and a mail survey (N=1,000) was sent to a randomly selected sample of men and women, aged 65 and older, residing in a metropolitan area of the non-industrial American Midwest. Response rate was 42% (N=378).

Results showed mean differences in attachment style, but differences were not consistent with prior findings, possibly due to measurement issues. Stagewise block regression (block order determined theoretically and conceptually before entering) revealed that attachment significantly contributed to a model predicting loneliness (16% R^2 change). The model explained 44% of the variance in loneliness. Secure and Preoccupied attachment each moderated the relationship of the directive guidance category of enacted social support and loneliness. Attachment did not moderate the relationship of satisfaction with enacted support and loneliness.

CHAPTER 1

INTRODUCTION

Statement of Purpose

The purpose of this dissertation is to study the relationship of attachment and social support to loneliness in later life. Loneliness in old age has been a concern and focus of exploration for older adults, their families, professionals and practitioners in the aging network, and researchers in the field of aging. The losses and adaptations of later life may result in elders becoming isolated emotionally or without adequate social support. Although research findings indicated that older adults generally are less lonely than younger adults, interindividual differences within older populations indicated that loneliness is a risk for this population (Russell, 1996). The current research explores loneliness in the context of individual characteristics of elders, including demographic variables found to be related to loneliness in earlier studies, as well as two dimensions not yet researched extensively in relation to loneliness in later life: enacted social support and adult attachment.

Enacted social support is supportive behavior undertaken on behalf of another person. It was measured for this study using the Inventory of Socially Supportive Behaviors (Finch et al., 1997). Much of the social support literature has focused on perceptions of emotional support as the most important type of support for predicting affective outcomes; however, research findings on instrumental support (i.e., enacted social support) indicated that enacted support could be a crucial source of well-being for elders, helping them to feel embedded in a

social milieu and offering practical help in times of need such as bereavement (Stroebe, Stroebe, Abakoumkin, & Schut, 1996; Weiss, 1973). Would enacted social support influence loneliness in older adults?

The relationship of adult attachment to loneliness was also explored for this research. The purpose of including adult attachment was to determine whether individual characteristics of affect regulation styles concerning relationships with others would influence older adults' perceptions of loneliness. Would attachment style relate to loneliness in older adults? Although adult attachment has been the focus of study for some time, most research has been in the context of young or middle-aged adult romantic relationships, retrospective relationships with parents, or peer friendships (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987; Simpson, 1990). Only recently has attachment been explored in older adults, again in the context of specific interpersonal relationships. Attachment in adults is also theorized to have global effects on whether an individual tends to feel comfortable with relying on others or not, as well as with regulating affect (Feeney, 1999). In this conceptualization, attachment has implications for influencing both enacted support and loneliness. An additional purpose of this study was to discover whether attachment would moderate the effects of enacted social support on loneliness.

This study was conducted using a mail survey sent to a sample of community-dwelling older adults. A stagewise block regression model¹ was used to determine the combined influence of demographic characteristics, attachment, and enacted social support

¹ The term "stagewise block regression" is used here to differentiate the method from both stepwise regression, and HLM (hierarchical linear model) analyses. The method used in the current study was the entering of blocks of variables into a multiple regression analysis model, based on theoretical and conceptual criteria to determine block order.

on loneliness. In addition, the interaction between enacted support and adult attachment was tested. Results from this research will be useful for addressing the issue of loneliness in later life by furthering our understanding of how personal characteristics, not just being alone, influence individual perceptions of loneliness. The following literature review presents relevant theory and research findings on the topics of loneliness, adult attachment, and social support in later life.

CHAPTER II

RELATED LITERATURE

The applied focus of this research is on the perceptions of older individuals concerning the enacted social support they received from others, their satisfaction with that support, and how these variables related to feelings of loneliness in later life. The theoretical focus of the research is that attachment theory, as developed by Bowlby (1969, 1982) concerning children and subsequently others concerning adult attachment (Griffin & Bartholomew, 1994b; Hazan & Shaver, 1994; Main, Caplan, & Cassidy, 1985), would have an influence on the amount and types of support received, satisfaction with support, and loneliness in later life. The following literature review provides an overview of findings about each of these variables in relation to aging. Finally, variables well established in the literature as germane to the experience of aging were explored: age, sex, income, marital status, race/ethnicity, self-reported health status, adult bereavement, and living arrangements.

Loneliness

In his seminal work on the topic, Weiss (1973) described loneliness as a "driving discomfort" (p. 33) and a "reaction to the absence of significant others" (p. 37), characterized by both personal and situational factors. In making those statements, Weiss drew on the attachment and affectional bond work of Bowlby (1946, 1969) and the separation and bereavement work of Parkes (1998, 1969) to describe the manner in which loneliness can

permeate and affect individuals to such an extent that no other aspect of life makes up for the lack of significant interpersonal relationships.

There are two general concepts of loneliness. The first concept is that social and emotional loneliness are two separate dimensions of loneliness and that perceived deficits in either type cannot make up for lack in the other (Cutrona, 1982; Hazan & Zeifman, 1999; Russell, Kao, & Cutrona, 1987; Russell, Peplau, & Cutrona, 1980; Weiss, 1982, 1973). Social loneliness comprises a lack of interaction with other persons in such ways that integrate an individual into the daily life of his or her community (Weiss, 1973). Emotional loneliness consists of a lack of proximity to a specific person, particularly when separation or threat of separation occurs (Bowlby, 1980; West & Sheldon-Keller, 1994), or simply not having any close confidant, intimate relationship, or pair bond (Hazan & Zeifman, 1999). In an early qualitative study, Weiss (1973) found that close relationships in marriage did not make up for women's feelings of social loneliness after moving to a new town, nor did adequate work and social activities mitigate the emotional loneliness felt by recently divorced and widowed individuals. Weiss' conclusion was that "social networks provide engagement and attachment figures provide security" (p. 148). This dissertation is concerned with the influence of the engagement aspects of social networks on loneliness.

Weiss (1973, 1982) and other researchers found that being alone, either socially or emotionally, was not necessarily a precursor to or cause of loneliness. The main reason for expressing loneliness was the perceived lack of some desired relational provision on the part of the lonely individual, regardless of the size of the social network or the presence of intimate others (Weiss, 1973). Expressions of loneliness included feeling isolated even when with other people, a discrepancy between the level of closeness one had and one wanted

(Peplau & Perlman, 1982), and interpersonal relations that generally did not meet the personal standards of an individual (Dykstra, 1995).

Discovering that simply being alone was not enough to cause loneliness was one source of support for the argument that loneliness may consist of both trait (chronic loneliness) and state (situational loneliness) dimensions. Individuals with a tendency to trait loneliness may continue to demonstrate this intraindividual pattern in a variety of social and interpersonal environments. Using a sample of new college students, researchers found evidence for trait loneliness in respondents who expressed great loneliness, yet coped in solitary ways by watching hour upon hour of television (Buhrmester & Furman, 1987). Other studies also resulted in such seemingly paradoxical findings; for example, respondents overtly expressed feeling freer or more comfortable being alone, yet also reported feeling lonely most of the time (Larson, Csikszentmihalyi, & Graef, 1982; Rook, 1987). Evidence supporting the presence of trait loneliness has implications that some other factor or factors are related to an individual's perceptions of feeling lonely, despite their behavior or environment. In the current study, adult attachment was explored as a possible influence on trait loneliness.

A second concept of loneliness included both social and emotional loneliness, but maintained that there is also a general bi-polar (low to high level) globalized unidimensional loneliness that subsumes the two-characteristic model (Russell, 1996). It is the unidimensional model that may best represent trait loneliness. The unidimensional approach has important implications for the current study because, if loneliness is not necessarily related to current environment or state of mind, to what can it be attributed? Several suggestions existed in the literature, including a significant but weak relationship between

loneliness and personality measures of extraversion and neuroticism (Carver, 1997; Russell, 1996). However, recent studies on adult attachment may suggest that the internal working model of attachment functions as a way for individuals to assess positive and negative expectations of themselves and others in interpersonal relationships (Bartholomew, 1990; Bretherton & Munholland, 1999; Griffin & Bartholomew, 1994a; Hazan & Shaver, 1994; Thompson, 1999). One proposal of the current study is to suggest that expectations of self and others in the context of both social and emotional relationships will affect the tendency for individuals to perceive themselves as generally more or less lonely.

Loneliness in Later Life

Older adults generally report less loneliness than do younger individuals (Antonucci, 1985; Peplau, Bikson, Rook, & Goodchilds, 1982; Rubenstein & Shaver, 1982; Russell, 1996). However, interindividual differences in levels of loneliness were found within older age group samples (Fees, Martin, & Poon, 1999; Russell, 1996). Although age itself predicted loneliness only for the oldest old (Fees et al., 1999), issues germane to later life were found to be related to loneliness: income (Long & Martin, 2000), bereavement (Dykstra, 1995; Lopata, 1973), health (Fees et al., 1999; Russell, 1996), marital status (Dykstra, 1995), living arrangement (de Jong Gierveld, 1987), gender (Rokach, 2000; Ryan & Patterson, 1987), and social support (Rook, 1984b; Russell et al., 1987).

Personal and situational characteristics of older adults were found to be salient in predicting loneliness. Dykstra (1995) discovered that loneliness following bereavement grew less intense over time, except in cases where a spouse had died suddenly and the widow had not experienced anticipatory grief. Dykstra also found that widows who disdained the idea of being single in general expressed more loneliness than widows who did not view being single

in a negative light (1995). The literature did not show a consensus in findings concerning the relationships among marital status, living arrangement, and loneliness. Although living single predicted loneliness (de Jong-Gierveld, 1987), older adults who had always been single reported less loneliness than those who were bereaved of a spouse (Dykstra, 1995). Living alone did not appear to be the “cause” of loneliness. This study explores the relationship of attachment to loneliness, controlling for living alone.

The literature was not clear on whether loneliness was related to age combined with marital status, age combined with living arrangement, or both. In a sample of middle-class older adults, Larsen, Zuzanek, and Mannell (1985) found that married individuals felt energized by time spent alone pursuing personal interests; whereas unmarried respondents felt depleted and disinterested in activities when alone. Unmarried respondents reported more loneliness than married respondents, who felt low levels of loneliness even during times a spouse was not present. The researchers speculated that the security of pair bonding might have facilitated an active interest in individual pursuit of activities. This finding gave a rationale for studying loneliness in relation to adult attachment because one of the functions of secure attachment, in Bowlby's (1982) view, is to provide a secure base for exploration and activities away from the attachment figure.

The literature on the relationship of bereavement, marital status, living arrangement, and age with loneliness is of interest in the current study because of the implications for a connection between relationship and loneliness. It is possible that the seemingly contradictory findings concerning these variables may be explained better by exploring how attachment might function as a differentiating factor in predicting loneliness.

Attachment Theory

Development of Attachment Theory

Bowlby's development of attachment theory grew out of his interest in analytical biology, control theory, and ethology (the study of animal behavior), particularly those behaviors that related to the establishment of close social bonds (Lorenz, 1935). Bowlby focused on how instinctive behavior was manifested in various environments, especially those environments where individual members of a species were no longer operating in the environment of evolutionary adaptiveness in which the instinctual behavior was first formed (Belsky, 1999; Bowlby, 1982). Bowlby's approach to the concept of instinct was that it was not merely a set of rote behaviors inborn into a species. Bowlby suggested that current particular individual environments, rather than the original species environment, was crucial in understanding the behavior of individuals, albeit within certain species-characteristic patterns that developed, in the evolutionary sense, to accrue some predictable benefit, either in the genetic or species-specific sense (Bowlby, 1982).

Empirical studies of rat pup and mother behavior influenced Bowlby's (1982) imagination about humans, particularly that outcomes of thriving, weight gain, and signs of distress (measured by rat pup cries) depended upon the interactive behavior of both infant and mother together, not simply on whether the pup was fed and kept warm (Rosenblatt, 1965). Later research on rat pup/mother behavior supported early studies with findings that suggested links between the biological and psychological regulation of mother/infant interaction and subsequent development of the young rat (Hofer, 1995). Bowlby imagined that humans might function in similar ways, and that specific behaviors beyond feeding and

maintenance of physical comfort between caregiver and child might relate to the child's ability to mature and thrive.

The instinctual behavior most intriguing to Bowlby in relation to human interaction was the imprinting process and searching behavior of some young animals. The imprinting process consisted of the young, at a crucial specific time in early life, perceiving predictable patterns in the environment (for example, the shape and movement of a particular adult), thereafter seeking proximity to that pattern, especially in time of stress, and terminating the seeking behavior once the goal of desired proximity was reached (Bowlby, 1982). Influenced by the work of ethologists such as Konrad Lorenz (1935), who experimented with imprinting by becoming an "attachment figure" to newborn goslings, Bowlby theoretically extrapolated observation of various animal species to the behavior of human infants and young children, observing that young children became attached to particular adults even if those adults did not behave in what outside observers might consider to be optimally attentive ways. Bowlby called this tendency for human infants and young children consistently to seek contact with particular others "attachment" and suggested that the influence of attachment persisted in humans "from cradle to grave" (Bowlby, 1979, p. 129).

Functions of Attachment

Bowlby (1982) was adamant that the function of attachment not be couched in teleological terms, that is, that the outcome of attachment (felt security) not be viewed as the "cause" of attachment behavior. He identified *functions* as the "consequences of the construction of a system; whereas *causes* are the factors or circumstances that activate or deactivate the system" (p. 126). In Bowlby's terms, attachment behavior therefore was "caused" by a particular set of circumstances, such as threatened separation, which activates

such behaviors as proximity seeking and separation protest, which in turn may lead to desired proximity with the attachment figure. From a systems perspective, Marvin and Britner (1999) described attachment in terms of how a system with little control (e.g., the human infant) attaches itself to a system with greater control (e.g., the human adult), to be protected and survive, but also to grow. This complements Bowlby's view (1982) that the ultimate functions of attachment are survival and procreation; these are more likely to be attained by successful survival to adulthood and by the subsequent activities of mating, parenting, feeding, and exploration.

Empirical Study of Childhood Attachment

The first empirical studies of attachment concerned the behavior of children upon separation from their mothers. Three patterns of human toddler attachment behavior (anxious-avoidant, secure, anxious-resistant) were defined and classified by the empirical research of Ainsworth and colleagues who studied mother-infant attachment using home observation and the "strange situation" procedure in a laboratory setting (Ainsworth, Blehar, Waters, & Walls, 1978). Other classifications emerged as more researchers took on the study of childhood attachment including the disorganized classification (Main & Solomon, 1986).

Secure attachment was theorized to be positively related to later successful relationships, a better outlook about oneself and others, and a tendency to be autonomous in exploration of the environment. Insecure attachment (avoidant or resistant) was theorized to be negatively related to optimal outcomes: distrust, dismissal, clinging to others, and curtailment of exploration of the environment. Empirical research generally has supported these broad propositions of attachment theory concerning toddlers (Feeney & Noller, 1996; Main, Kaplan, & Cassidy, 1985; Sroufe & Fleeson, 1986).

Implications of Interindividual Differences in Attachment Characteristics

Overall outcomes for individuals with different attachment characteristics were theorized to be predictive of behavior beyond infancy. A particular individual (usually the mother) was the first attachment figure for the individual child. The attachment figure represented safe haven when needed as well as offering a base of security from which the child may explore the environment. Secure children will feel safe in moving away from the attachment figure to explore and learn from the environment. The secure child is assured that the attention of the attachment figure will be available when needed; therefore, he or she feels confident in autonomous exploration. This confidence is developed out of successful outcomes when the child seeks his or her attachment figure's proximity and care.

Insecure children, whether avoidant or anxious, are predicted to curtail autonomous exploration and remain fearful of leaving the proximity of the attachment figure. Anxious children may display distressed affective behavior, while avoidant children may refuse interaction, yet also decline to leave the proximity of the caregiver to explore the environment. The lack of confidence displayed by insecure children is related to negative or ambivalent (ambiguous and/or inconsistent) outcomes of the insecure child's elicitation of comfort and proximity from the attachment figure.

To discover whether attachment type in infancy is related to attachment at different times of life, researchers have conducted mostly cross-sectional studies of attachment at different periods of life: later childhood (Main, Kaplan, & Cassidy, 1985), young adulthood (Feeney & Noller, 1996; Hazan & Shaver, 1987), and middle adulthood (Hazan & Shaver, 1990; Kirkpatrick & Hazan, 1994) with studies of later life attachment increasing yet still

few (Magai, Cohen, Milburn, Thorpe, McPherson, & Peralta, 2001; Sable, 1989, 1991; Webster, 1997).

Characteristics of Adult Attachment

Most of what is known about adult attachment is based on intraindividual correlations of present attachment with self-reported recollected attachment style (Collins & Read, 1990; Feeney & Noller, 1990; George, Kaplan, & Main, 1985; Rothbard & Shaver, 1994), the correlation of parent and child attachment styles (Bakermans-Kranenburg & van Ijzendoorn, 1993; George, Kaplan, & Main, 1985), and the attachment behavior and styles of adolescents or young to middle-aged adults in couple relationships (Brennan & Shaver, 1995; Feeney, Noller, & Callan, 1994; Kobak & Sceery, 1988; Shaver & Hazen, 1993).

Studies of attachment in later life have explored the relationship of attachment to filial bonds (Cicirelli, 1995); sibling relationships (Cicirelli, 1989); race and ethnicity (Magai et al., 2001); reminiscence (Molinari, Cully, Kendjelic, & Kunik, 2001; Webster, 1998); personality, loneliness, and relationships with adult children (Long & Martin, 2000); cognitive domains of adulthood (Labouvie-Vief & Diehl, 2000); emotion (Strongman & Overton, 1999); well-being (Webster, 1997); dementia (Magai & Cohen, 1998; Miesen, 1992); and implications of attachment for psychotherapy with older patients (Cath, 1998).

One of the most frequent applications of attachment theory concerning adults has been the empirical study of dating and marital behavior. Researchers suggested that romantic relationships are a good setting in which to study adult attachment because of the western cultural expectation that the romantic partner (especially in marriage) is the attachment figure for adults (Ainsworth, 1985; Morris, 1982). Weiss (1994) supported this idea by suggesting that an analogy between infant-caregiver attachment and adult romantic attachment could be

made by observing behavior regarding: (a) wanting proximity to the attachment figure, especially in time of stress; (b) wanting comfort and security from the attachment figure; and (c) protest at separation.

Shaver and Hazen (1993) further recommended that the context of romantic partnerships is a good area in which to study the broadness of attachment theory in adulthood, for example, in the areas of anxiety and loss as well as in how the mental models developed in childhood may remain stable or change during subsequent relationships. This approach expanded the study of attachment past the childhood years, yet, in focusing only on one type of relationship in adult life, did not address whether attachment characteristics have global effects on exploratory aspects of life beyond specific relationships as Bowlby claimed (1962). The current study attempts to discover whether attachment characteristics shown by a sample of older adults are differentiated in the context of social support and loneliness, rather than examining specific dyadic attachment relationships.

Stability of Adult Attachment

Stability of adult attachment is not yet well understood. Part of the reason why we don't know if individual attachment style remains stable across years is that attachment theory originally was formulated on the basis of infant and young child attachment to parents (specifically, mothers). Early empirical studies were designed to capture attachment behavior relevant to the maturational level of the developing young child. Although the adult attachment interview (Main & Goldwyn, 1994) measures adult retrospective perceptions and parent attachment style to determine current and past attachment style, the measure is not specifically analogous to attachment style results of the strange situation studies for the simple reason that adults have undergone physical and experiential maturation of the sort that

introduces many other possible variables that potentially could influence attachment style over time, even though attachment theoretically is antecedent to subsequent relationship expectations and experiences (Baldwin & Fehr, 1995). Longitudinal empirical studies of adult attachment stability so far have been short-term, for example, retesting after a time period ranging from two weeks (Levy & Davis, 1988) to eight months (Shaver & Brennan, 1992).

At the time of the current research, there was little consensus concerning adult attachment stability. Extant perspectives included the following arguments: (a) adult attachment is stable, although measures are limited and responsible for a lack of consensus across studies (Scharfe & Bartholomew, 1994); (b) adult attachment is unstable, even when studied over time within the same interpersonal relationships (Baldwin & Fehr, 1995); and (c) using retrospective measures to determine stability or change could be biased as self-report measures often may be (Kirkpatrick & Hazan, 1994). One longitudinal study consisted of re-contacting young adults who had been measured for attachment using the strange situation when infants (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). Results showed that a majority of respondents measured into the secure attachment category at the second time of measurement and 36% changed attachment categories between infancy and young adulthood. The researchers suggested that life experience influenced attachment; however, this implication must be explored further.

The issue of stability of attachment style is particularly salient for the study of later life attachment, not only because attachment may influence affective outcomes for older individuals, but because current research on attachment in older adults indicates that elders were more likely to measure into the dismissing category of attachment, unlike younger

adults, a majority of whom consistently measure into the secure attachment category (Magai et al., 2001; Webster, 1997). Are these differences age-based or cohort-based and do they represent a tendency for attachment styles of an individual to change over time? The answer to that question was beyond the scope of the current cross-sectional study; however, results indicated that more longitudinal and sequential studies, as well as the development of valid and reliable ways to measure attachment over time, should be pursued.

Adult Attachment and Global Influence

Global influences of attachment (the influence of attachment style on various aspects of individual lives beyond specific relationships) have not been studied extensively with older adults, although global influence was suggested in the theoretical literature (Bartholomew & Horowitz, 1991). Some research findings have indicated that attachment influenced such non-attachment relationship experiences as career development (Bluestein, Prezioso, & Schultheiss, 1995) and difficulties (Hardy & Barkham, 1994). Implications for the influence of attachment over the lifespan may be found in the theoretical concepts of the internal working model of attachment as well as in the function of attachment behavior as a goal-directed attempt to regulate affect. These theoretical explanations provide a rationale for suggesting that attachment style may predict loneliness.

The Internal Working Model of Attachment - Implications for A Lifespan Approach

Although Bowlby conducted no systematic study on attachment beyond infancy, he maintained that the functions of attachment remain salient beyond those early caregiver years and indeed throughout life (Bowlby, 1979). Unlike the Freudian view of child developmental dysfunction based on drives and internal psychic structures, Bowlby (1982) suggested that emotional problems in children derived from actual experience, particularly with early

caregivers (Bretherton, 1992). Caregivers and infants interact in ways such that the infant develops particular expectations about how he or she will be able to function autonomously in the world as well as how well he or she will be able to obtain feelings of safety and security from others when needed. The attachment goal of the individual child is not an object, that is, not the caregiver specifically, but rather a desired state of affective being (Bowlby, 1982).

Experience with early attachment figures results in the development of expectations for autonomy and relationship that Bowlby called an internal working model of attachment. The internal working model influences subsequent interpersonal relationships by affecting the perceptions, preferences, and tolerances individuals have for specific relationship characteristics and behaviors. The most comfortable affective state is maintained if interpersonal relationships are either as close or as remote as the individual can tolerate.

The mechanism through which attachment continues to influence an individual's approach to social and emotional bonds is the internal working model of attachment which contains cognitive conscious beliefs such as the amount of communication and physical availability of an attachment figure (Kobak, 1999), as well as utilizing these beliefs to plan future social and relational behavior (Cassidy, 1999). The internal working model also has unconscious aspects that develop with maturation along with other cognitive developmental representations (Thompson, 1999). Bowlby derived the idea of an internal working model of attachment from Craik (1943), who theorized that individuals construct representational models of physical and social phenomena. These models serve to function somewhat as a map for attribution and behavior. The internal working model of attachment serves to contain mental representations of self and the environment based on early experiences with an

attachment figure. These mental representations inform the beliefs, attitudes, and expectations one has of the self in relation to other people that may influence ways in which individuals subsequently try to obtain the attachment-related goal of felt security through acting out behaviors that were successful for affect regulation in the individual's past (Bowlby, 1982; Feeney, 1999).

Goal-Directed and Goal-Corrected Behavior, and Affect Regulation

The acting out of internal working model representations is called goal-directed behavior, which Bowlby (1982) derived from control systems theory. If the individual-level goals of the attachment system are to obtain felt security, a safe haven from distress and danger, and a secure base from which to explore, then the behavior of individuals will become goal-corrected, that is, the individual will adjust behavior to any environment to reach these attachment goals. Attachment theorists believe that the goal-corrected patterns of behavior experienced with early caregivers reflect attempts by the child to interact with the caregiver in such a way that felt security is obtained, even if the caregiver is inattentive to elicitation for response or over-involved in curtailing attempts by the child to explore on his or her own (Bretherton, 1992; Cassidy & Berlin, 1994).

Bowlby suggested that goal-corrected behavior developed in humans as a way for the infant and young child to maintain the desired physical and representational proximity to the source of felt security, the primary attachment figure (Bowlby, 1982). This conceptual approach indirectly links the idea of the internal working model to the behaviors and beliefs observed by empirical research. For example, the toddler who is classified with anxious-ambivalent attachment desires closeness and comfort but does not trust that it will be available, resulting in the seemingly contradictory acts of clinging to the mother and pushing

her away at the same time. The ambivalent actions thus function to regulate affect through behavior that might or might not elicit care from an inconsistently attentive caregiver.

Although a secure attachment style is considered the optimal attachment style (in terms of successful interpersonal relationships) and is used to define optimal relational functioning in many studies (Bretherton & Munholland, 1999), the "goal" of attachment is not to attain secure attachment but to regulate affect, such that the individual can function with the least amount of emotional distress possible (Kobak & Sceery, 1988; Sroufe & Waters, 1977). When attachment characteristics and behavior are viewed in this way, it is a mistake to consider secure attachment as the only "positive" outcome in studies of attachment. If individuals consider themselves more comfortable with fewer or less intense close relationships, it is erroneous to think of a greater quantity of emotional and instrumental support, or more intimate relationships, as the only "good" or normative standard. In addition, relationships that may be described as "less than optimal" (Bradley & Cafferty, 2001) may meet the affect regulation goals of some attachment patterns (for example, an abusive adult relationship may meet the proximity needs of an adult with a preoccupied attachment style). One purpose of the current study is to explore attachment in relation to loneliness in later life. Loneliness is often considered a crucial issue in old age, yet the literature consistently finds that elders report lower levels of loneliness than younger adults (Russell, 1996). This study of the relationship between attachment characteristics and loneliness could provide insight regarding why some older adults who objectively would be identified by others as lonely do not report themselves as feeling lonely.

Measuring Global Attachment Influence in Later Life

The model of adult attachment used for the current study is the Griffin and Bartholomew (1994b) two-dimensional, four-group model of attachment (see Appendix C). The main difference between this model and other models of interindividual differences in adult attachment is that the Griffin and Bartholomew model added the category of fearful to the three dimensions that more or less represent most adult attachment typologies (for example, the Adult Attachment Interview [Main & Goldwyn, 1994] categories of secure, ambivalent, and avoidant for adults, somewhat analogous to the secure, preoccupied, and dismissing categories for toddlers). The fearful category was added after numerous studies found that the dismissing and preoccupied categories often were confounded. Bartholomew and Horowitz (1991) discovered that when approaching adult attachment with a two-dimensional self/other model (within which individuals perceive expectations and preferences for themselves and others in personal relationships), a fourth quadrant emerged that was distinct conceptually from either the preoccupied or dismissing types. The characteristics of the attachment style for this quadrant were such that she labeled it "fearful attachment."

The following defining characteristics of adult attachment styles were based on the Griffin and Bartholomew (1994b) two-dimensional, four-group model of adult attachment that was used to measure global adult attachment in this study of older adults and loneliness:

1. Secure: Comfortable with close relationships. Comfortable with interdependence. Not overly dependent on others, even intimate partners. Feels willing and able to be separated from attachment figures for periods of time to pursue own interests and activities. Feels a sense of internal security and safety, along with a sense of autonomy. Goal-corrected

behavior to achieve desired affect may include appropriate levels of self-disclosure, asking for help when needed, and providing support when needed. Positive model of self, positive model of other. In the current study, secure attachment is hypothesized to be negatively related to loneliness.

2. Dismissing: Feels most comfortable without close relationships, prefers to take care of all one's own needs without depending on others. May be very involved in exploration, and high occupational achievement, as a way to avoid social and/or emotional relationships. May engage in social activities that allow for the most superficial interactions with others. Feels a sense of internal security only when there is also a sense of complete independence from relational needs. Sense of felt security resides in feelings of complete self-sufficiency. Goal-corrected behavior to achieve desired affect may involve resistance to intimate relationships. Positive model of self, negative model of other. In the current study, dismissing attachment is hypothesized to be negatively related to loneliness.

3. Preoccupied: Clinging, distressed, and needy in relationships. Wants proximity to attachment figures no matter how it is attained, even through fighting or stressful situations. Dependent, wants to be with others all the time, especially attachment figures. Not willing to go off on own pursuits if it means doing so alone. Feels a sense of insecurity and need for constant watchfulness and monitoring of relationships. Goal-corrected behavior to achieve desired affect may involve continual attempts at proximity with attachment figure, or constant thinking about or focus on particular interpersonal relationships. Negative model of self, positive model of other. In the current study, preoccupied attachment is hypothesized to be positively related to loneliness.

4. Fearful: Wants close relationships but is afraid of inability to elicit them and afraid that others will not be willing to engage in closeness with them. Uncomfortable with both dependence and interdependence, but does not feel a sense of autonomy either. May engage in social activities and relationships but feel high levels of anxiety and worry, yet without attempting to change the relational environment. Exploration and achievement may be curtailed due to the effort and energy given to anxiety and monitoring of the self and to the sense that there is no secure base to lean on. Does not have a sense of felt security in either self or through others, but achieves felt security through intermittent and inconsistently intimate interactions with others. Goal-corrected behavior may include approach/avoidance behavior with others. Negative view of self, negative view of others. In the current study, fearful attachment is hypothesized to be positively related to loneliness.

Social Support

Social support can provide individuals with emotional and instrumental resources (Cohen & McKay, 1984; Cutrona, 1990; Florian, Mikulincer, & Bucholtz, 1995; Wallston, Alagna, DeVellis, & DeVellis, 1983; Weiss, 1973, 1974) that relate to feelings of being cared for and esteemed (Cutrona, 1990; Kahn & Antonucci, 1980) as well as enhancing a sense of belonging and integration within one's environment (Baumeister & Leary, 1995; Weiss, 1973). Social support also may prevent depression by providing a sense of continuing embeddedness in one's social network following losses such as bereavement (Norris & Murrell, 1990). Sources of social support include both formal and informal social contacts (Wallston et al., 1983), specific individuals who fulfill particular supportive roles for an individual (Cohen, 1988; Kahn & Antonucci, 1980; Sarason, Shearin, Pierce, & Sarason,

1987), and dynamic interrelated networks comprised of various individuals, roles, and social environments (Tardy, 1985).

Provisions of Support

The functions of social support, that is, the elements that support provides to the individual, are a main focus of much research on social support. The development of concepts and measures addressing the provisions of support was drawn primarily from Weiss (1973, 1974), whose findings and theorizing about different types of loneliness (i.e., social and emotional) led to implications about ways in which different types of social support might relate to loneliness (Cutrona & Russell, 1987; Weiss, 1974). The development of concepts and measures resulted in the discovery that while there is a general unidimensional second-order global factor of social support (Cutrona & Russell, 1987; Finch et al., 1997; McCormick, Siegert, & Walkey, 1987; Payne & Graham Jones, 1987), specific provisions also can be identified within the global dimension.

Although all of the instruments described immediately below have shown consistent reliability and various types of validity, there are some conceptual differences in the definitions and underlying concepts behind various approaches to social support provision. These differences reside mostly in whether the study of social support is conceived as a measurement of attribution, e.g., perception of some aspects of support, or conceived of as a measure of actual support given or received (called enacted support). Cutrona and Russell (1987) used Weiss' (1974) definitions of social and emotional provisions to create the Social Provisions Scale, approaching the topic of support primarily as it is perceived by the individual. The Social Provisions measure consists of six factors: attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance

(Cutrona & Russell, 1987). The questionnaire asks respondents to identify the extent to which attitudes about various social provisions are like or unlike themselves. Another measure based on perceived support is the Social Support Questionnaire (called the SSI, for Social Support Inventory; Sarason, Levine, Basham, & Sarason, 1983), which measures the perceived availability of support as well as satisfaction level with support. Respondents are asked to identify specific sources of support, answer questions about each relationship, and rate their satisfaction with the supportive aspects of each relationship.

Provisions of support also were defined in measures of enacted support. Barrera, Sandler, and Ramsey (1981) created the Inventory of Socially Supportive Behaviors (ISSB), based on provisions embedded within a unidimensional measure of actual received support. The four provisions were identified as directive guidance, nondirective support, tangible assistance, and positive social exchange. Using the same measure, however, McCormick et al. (1987) found only three reliable and internally consistent provisional factors: directive guidance, nondirective support, and tangible assistance. Finch et al. (1997) retested the ISSB and maintained the viability of the original four factors; however, they eliminated several of the Positive Social Exchange items to maintain the measurement model. One goal of this research is to test both a three- and four-factor structure of the ISSB because it is possible that the eliminated items actually are measuring attachment.

There is empirical evidence that measures of the two broad categories of support—perceived and enacted—generally show good to very good internal reliability (Barrera et al., 1981; Sarason et al., 1983) and good to very good divergent validity from each other (McCormick et al., 1987), indicating that defining perceived and enacted support

as separate conceptualizations of social support is suitable (Sarason, Sarason, & Pierce, 1990; Tardy, 1985).

Social Support as a Buffer for Stress

An important dimension of the study of social support is the buffer hypothesis: social support serves as a mediator between stress and outcomes such as health or psychological distress. The current cross-sectional research, however, does not measure buffering effects because most empirical evidence in support of the buffering hypothesis comes from longitudinal studies (Payne & Graham Jones, 1987; Thoits, 1982) and findings indicating that buffering effects were found only when stressful events or conditions were present during the time of measurement (Cutrona & Russell, 1987; Payne & Graham Jones, 1987). Even when stressful situations were measured at the time of study, it was suggested that social support effects and negative events may be confounded, especially in later life, as stressful events such as bereavement often remove sources of support from a person's life (Thoits, 1982). Although conditions of bereavement are addressed in this study as a descriptive aspect of the sample, social support and attachment regarding specific relationships are not explored in the depth that would be required to test adequately the buffer characteristics of social support.

The following review of social support literature is focused on the conceptualization of social support as either perceived or enacted and how these conceptions relate to attachment theory and to the experiences of later life. In addition, the review presents empirical findings from studies exploring social support with various psychological and health outcomes and satisfaction with social support.

Perceived and Enacted Social Support

Perceived support. The literature on social support identified two broad categories of approaches to the topic. The first category, perceived support, comprised subjective assessments by individuals about the nature and availability of support to themselves including expectations of support and interpretation of supportive behaviors by others toward the self (Cutrona, 1990; Mallinckrodt, 1991; Pierce, Sarason, & Sarason, 1992). Such assessment may or may not reflect actual available support or supportive behaviors by others on behalf of an individual. Researchers have suggested that subjective and apparently stable (Sarason, Sarason, & Shearin, 1986) generalized perceptions of social support reflected individual personality characteristics (Lakey & Lutz, 1996). In fact, researchers with a social psychology orientation conceptualized perceived social support as the adult manifestation of childhood attachment focused on current and retrospective perceptions of self and others in the context of interpersonal relationships (Sarason, Sarason, & Pierce, 1990). Although both social psychology and attachment researchers have focused on studying how individuals seek to have relationship expectations confirmed (Belsky & Cassidy, 1994), it is the adult attachment theorists who developed specific models of expectations for self and others in the context of interpersonal relationships (Bartholomew, 1990; Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987). The social psychology approach to perceived social support does not address the functions of attachment that Bowlby suggested were manifested throughout life (Bowlby, 1973): proximity maintenance, a secure base for exploration, a safe haven for comfort, and, particularly salient to adult life, a way to regulate affect and felt security through goal-corrected behavior (Bretherton, 1992).

Perceived social support was conceptualized as a specific personality function of experienced attachment developed in childhood; whereas attachment theorists conceptualized adult attachment as a personality component of the childhood-based but lifelong developing internal working model of expectations of self and other that informs but does not fully comprise the sociability or caregiving/support systems (Hazan & Shaver, 1994; Marvin & Britner, 1999). One goal of the present research was to examine the relationship between social support and attachment. A limitation of this goal was that current measures of perceived social support may confound with measures of attachment, especially when perceived support measures are constructed on the premise that perceived social support is the cognitively constructed adult continuation of childhood attachment (Sarason, Levine, Basham, & Sarason, 1983; Sarason, Sarason, & Shearin, 1986) or when attachment itself is measured as a provision of social support (Cutrona & Russell, 1987). Therefore the current study measured enacted rather than perceived support. The issue of measurement is discussed in the Methods chapter of this dissertation.

Empirical studies on the perception of support as a personality characteristic indicated a generalized interpretive bias that individuals bring to all social relationships including supportive relationships (Mallinckrodt, 1991; Pierce, Sarason, & Sarason, 1992; Sarason, Pierce, Shearin, Sarason, Waltz, & Poppe, 1991). The tendency to perceive the availability and quality of support is therefore not necessarily tied to specific interpersonal relationships. Mallinckrodt (1991) examined social support in the context of an overall perception of support across different interpersonal relationships. Results of the study showed that adult individuals' current perceptions of support given to them by therapists reflected perceptions of care by parents when young as well as current assessments of other adult social

relationships. In addition, results of several studies showed that negative assessment of actual support received was related to a negative overall view of social and interpersonal relationships in general (Lakey & Cassady, 1990; Lakey, Moineau, & Drew, 1992), although perception bias alone accounted for less variance (less than 10%) than did characteristics of supporters (20%) and a perceiver-supporter interaction (48%; Lakey & Lutz, 1996). The implication of this finding was that environmental and specific relationship features do affect perceptions of support above and beyond personality characteristics of the individual. Thus, the study of enacted support and the actual supportive environments of individuals are as important as researching perceptions of support.

Enacted support. The second broad view of social support, enacted or instrumental support, is focused on actual supportive activity given by or received by an individual (Barrera, 1986). Enacted support can include various provisions: services (i.e., transportation), resources (including advice), problem-solving assistance (Cutrona, 1990), information (Wallston et al., 1983), a sense of emotional connectedness and care (Weiss, 1974), and tangible or material support such as money or goods (Cohen & McKay, 1984; Finch et al., 1997). Although the attributional aspects of perceived support were found to be the most salient in predicting psychological outcomes related to social support (Cutrona, 1990; Mallinckrodt, 1991; Pierce, Sarason, & Sarason, 1992; Sarason, Pierce, Shearin, Sarason, Waltz, & Poppe, 1991), some researchers found that enacted support was especially important for older adults (Caplan, 1981; Cobb, 1979; Hobfall, Nadler, & Leiberman, 1986; Krause, 1995) as long as elders did not feel overly dependent or that they were unable to reciprocate in some way (Coyne & Downey, 1991; Krause, 1995; Rook, 1984a). In addressing the issue of social support, Weiss (1974) suggested that social needs and

processes differ at various ages. Older adults may experience predictable support losses related to the role changes that come with launching children, retirement, or death of partners and close friends (Cutrona, Russell, & Rose, 1986).

Such role changes may result in a real need for social provisions that include enacted, specific supportive behavior on behalf of an older individual such as help with activities of daily living or instrumental activities of daily living (Hooyman & Kiyak, 1999). Self-concept in relation to others, along with a sense of continued growth and ability to adapt to the environment, remains important throughout life (Baltes, 1987; Baltes, Lindenberger, & Staudinger, 1998). Social support was found to be related to the mental and physical health of older adults (Barrera, 1991; Cutrona & Russell, 1986; Forster & Stoller, 1992; Gibson, 1986; Potts, Hurwicz, Goldstein, & Berkanovic, 1992). However, too much or the wrong kind of help may result in feelings of dependency and helplessness (Krause, 1995) or loss of autonomy (defined as self-regulation and volition in one's own activities Ryan & Solky, 1996). Some types of enacted support, for example, information about changes in health services, gave elders a sense of contact and integration with the ongoing concerns of the world (Weiss, 1973). In addition, Stroebe et al. (1996) found that enacted support targeted to the instrumental needs of older adults was the only type of support that showed buffering effects on bereavement distress. A study by Kraus (1986) had similar findings. Such results were not surprising, in light of Weiss' (1973) discovery that each type of loneliness—emotional and social—was resolved by emotional or social (including instrumental) support, respectively, with neither type able to substitute for the other. In the Stroebe et al. (1996) study, enacted support helped to lift a burden of instrumental need even though it did not reduce the emotional loneliness associated with bereavement.

Finally, the need for older adults to feel a part of the social world and personally connected to others may be enhanced by receiving enacted provisions of support, not only because such support allows elders to adapt and change while remaining as autonomous as possible, but also because enacted support may be an indicator of the esteem in which an individual is held by others (Baumeister & Leary, 1995).

Satisfaction with Social Support

Both the perception of availability of support and amount and type of enacted support are issues separate from whether an individual is satisfied with his or her social support experiences. Studies indicated that measures of support and measures of satisfaction with support were not highly correlated, indicating that the constructs measured did not comprise the same concepts (Henderson, Byrne, & Duncan-Jones, 1981; McCormick et al., 1987; Sarason et al., 1983; 1987). Researchers suggested that studies of social support should include measures of satisfaction because neither the amount nor type of support given or received, nor perception of what is available, capture how an individual feels about the adequacy of his or her support experience (Krause, 1986, 1995; Sandler & Barrera, 1984; Sarason et al., 1990). Of particular interest for the current study was the finding that a greater amount, or perception of more availability, of support did not necessarily relate to greater satisfaction with support. Krause (1995) found that some older adults reporting high levels of tangible, emotional, and informational support also reported low satisfaction with support. Krause suggested that lack of perceived ability to reciprocate was one possible explanation for lower satisfaction in cases of high levels of received support. Another possibility, addressed in the present study, is that differences in adult attachment style might relate to and indicate direction of satisfaction, aside from objective or subjective reports of level of social

support. The current study explored the relationship between satisfaction with enacted support and loneliness in a model containing adult attachment and tested whether an attachment/satisfaction with enacted support interaction moderated the effects of satisfaction on loneliness in later life.

Social Support and Psychosocial Outcomes

Social support was studied in relation to various outcomes, particularly in the areas of psychological and physical health. In reviewing the overall focus of research on social support, it was apparent that the most frequent relationship explored was that of social support and stress, particularly the ability of social support to reduce deleterious effects of stress: anxiety (Payne & Graham-Jones, 1987), appraisal of perceived threat (Norris & Kaniasty, 1996), and poor health (Cutrona & Russell, 1986, 1987; Payne & Graham-Jones, 1987).

Although there were significant findings for the relationship of social support and psychological distress (McCormick et al., 1987) in general, social support alone did not account for a great deal of the variance in models predicting psychological outcomes. Sometimes non-significance was found, whether measuring perceived or enacted support, although perceived support generally accounted for more variance than did enacted support. Finch et al. (1997) found differential effects of social support in a model predicting depression using the ISSB measure. The separate provision factors of the ISSB accounted for more variance than the unidimensional factor; however, neither factor of social support, although significant, showed an effect size of more than .02% of explained variance in the model. In a comparative analysis of social support findings, Payne and Graham-Jones (1987) reported that perceived social support accounted for 14% and 15% of the variance of anxiety

and depression, respectively, for adults, while network size accounted for only 1.9% of the variance for depression and .02% of the variance for anxiety, also for adults (Griffith, 1985). In the same report, Payne and Graham Jones (1987) noted that in comparing studies between adult samples, the variance accounted for was very low for either a direct or indirect (mediating, i.e., buffering) relationship of social support and stress (usually measured in terms of life events or role conflict/anxiety), for example, 3.9% (House & Wells, 1978) and 2% (Bell, Leroy, & Stephenson, 1982), respectively. In some studies, perceived social support in adult samples accounted for no variance at all in relationship to stress (Lin, Simeone, Ensel, & Kuo, 1979; Pearlin, Lieberman, Menaghan, & Mullan, 1981).

Rather than focus on the buffering effects of social support, a more fruitful way of interpreting the relationship of social support and psychological outcomes may be to address the findings of some researchers concerning the relationship of social support and intraindividual factors such as personality. In an early study on such a relationship, Eysenck and Eysenck (1994) reported that a model including neuroticism, social support, and adversity accounted for 69% of the variance in a model predicting health ill health. However, when neuroticism and adversity were controlled, the relationship between social support and illness disappeared. The researchers concluded that intrapersonal characteristics might account for some outcomes more than do external circumstances. A clearer picture of the direct and indirect effects of social support on psychological outcomes may be found when social support is conceptualized in terms not only of enacted or perceived but also in terms of satisfaction with support. The current study explores the relationship of social support with the intrapersonal characteristics of adult attachment and how these variables have direct and indirect effects on loneliness. It is expected that individuals with each of the four attachment

types (secure, dismissing, preoccupied, and fearful) will report different levels of loneliness and support satisfaction, despite the amount of enacted support received.

Social Support and Adult Attachment

A few studies exist on the relationship between social support and adult attachment. There is evidence that internal working model expectations of self and other, as delineated by the Bartholomew and Horowitz (1991) model of adult attachment, exert global effects across different types of social relationships rather than being confined to behavior and expectations within intimate or attachment figure relationships (Pietromonaco & Feldman Barrett, 1997). The current study used the Bartholomew (1990) two-dimensional, four-attachment category model to assess global characteristics that represent expectations for self and others.

Most studies on adult attachment and social support focus on interindividual differences in adult attachment style in relation to various social support outcomes. The study of the supportive functions of specific relationships in an attachment context comprised the majority of research to date, particularly romantic relationships (Feeney, 1999; Hazan & Shaver, 1987; Hazan & Zeifman, 1999; Rholes, Simpson, & Stevens, 1998; Simpson, Rholes, & Nelligan, 1992). Research on the supportive aspects of attachment in romantic couples generally found that secure women sought comfort and help from partners as a means to cope with stress, but not in a frantic manner, while avoidant women withdrew from partners, and anxious/ambivalent women clung to partners for help (Simpson, Rholes, & Nelligan, 1992).

These findings may be confounded by sex role behavior differences in attachment (as well as design bias; Simpson et al. [1992] included female support-seeking but not male support-seeking into the method), although gender differences in attachment and social

support were not found across studies using different attachment measures. For example, the four-group model of Bartholomew and Horowitz (1991) found gender differences in attachment, whereas the three-group model of Hazan and Shaver (1987) did not. In general, lower relationship satisfaction was found to be related to men's discomfort with intimacy, characterized as avoidant, and women's reaction, characterized as anxious (Collins & Read, 1990; Feeney, 1994; Kirkpatrick & Davis, 1994). There was no clear picture of how gender differences in attachment might relate to social support perceptions and experiences, particularly in relation to support-seeking behaviors from romantic partners. Research on same-sex romantic partners in the context of attachment theory found no gender or role effects within couples (Mohr, 1999), although, as in other studies, insecure-avoidant attachment was related to relationship satisfaction for men but not for women (Mohr & Fassinger, 1997). These findings suggested that gender differences existed in attachment in the context of intimate partners but whether these are intraindividual or sex-role differences remains to be explored. Although the current study will not focus on romantic relationships, inconclusive findings concerning gender differences in attachment indicated that gender differences might affect the relationship among attachment, social support, and loneliness. Therefore, gender was included in this study of attachment, social support, and loneliness in later life.

The relationship of adolescents and young adults to parents was another area of attachment and social support frequently studied, with results showing that secure attachment was related to more successful adolescent individuation, allowing adolescents to differentiate from parents yet remain bonded and emotionally close (Collins & Repinsky, 1994; Kenny & Rice, 1995; Lopez & Gover, 1993; Quintana & Lapsley, 1990). Secure adolescents were

more likely to feel comfortable exploring their individual identity as separate from parents (Collins & Repinsky, 1994) and to practice interpersonal skills, moving toward relationships with age peers in self-assured, trusting, and creative ways (Shulman, Elicker, & Sroufe, 1994). Adolescents who remained bonded but not enmeshed (in attachment terms this means secure but not anxious) with mothers had more social interaction on a daily basis than did adolescents who felt distant from mothers (Kerns & Stevens, 1996). The conclusion of some researchers studying adolescent and young adult attachment was that an ongoing secure attachment relationship with parents does not foster dysfunctional dependency or curtail individuation, but actually is a source of felt security from which the young person may feel confident in going out into the wider social world (Kenny & Donaldson, 1991; Schultheiss & Blustein, 1994). College student samples consistently showed that individuals characterized as having a secure attachment style were more likely to seek social engagement and support with other people aside from their parents (Florian et al., 1995), while those evincing a high alienation score with parents (using the Inventory of Parent and Peer Inventory by Armsden & Greenberg, 1987), carried negative expectations about social interaction into all other social relationships (Larose & Boivin, 1997). Findings on adolescent and young adult attachment showed what appeared to be some life-span continuity of attachment style and behavior; these characteristics may affect what individuals expect and/or seek from their social milieu.

All the studies cited above were cross-sectional, and no study to date has tracked the relationship of attachment with social support longitudinally. However, findings in cross-sectional research have implications for the viability of the current research, which seeks

knowledge about the ways attachment might relate to enacted support in later life and how attachment might moderate the relationship of enacted support and loneliness.

Measurement Issues of Adult Attachment and Social Support in Later Life

Only one study to date (Lanier, 1996) has explored the relationship of attachment as Bowlby (1973, 1982) and adult attachment researchers conceptualized it (Griffin & Bartholomew, 1994b) with social support in later life. Results of this study showed differences in attachment style and social support in an older sample. The Lanier study measured attachment using the Bartholomew and Horowitz (1991) two-dimensional, four-group model (secure, preoccupied, dismissing, fearful). Social support was measured using the Cutrona and Russell (1987) Social Provisions scale, a measure of perceived social support. Each of the social provisions (guidance, reliable alliance, reassurance of worth, social integration, attachment, and opportunity for nurturance) was utilized as a dependent variable in analysis of variance (ANOVA) tests of attachment differences. Although significant differences were found, there was concern that using a perceived social support instrument that conceptually embeds attachment into the construct of social support might result in confounded findings due to an unacceptable level of collinearity between attachment and social support measures. The Lanier (1996) study cannot be assessed for collinearity because, while mean differences for attachment types and each social provision were reported, correlations between the measures were not shown. Although measurement issues must not drive the conceptual approach to research, they need to be taken into account. In this case, the underlying conceptualization of social support as either perceived or enacted is an especially important distinction because some researchers have conceptualized adult-attachment as a social support construct (Sarason et al., 1991), while adult attachment

researchers identify attachment as having lifelong specific functions of a secure base for exploration, a safe haven from distress, and a means to control affect through goal-directed behavior (Brennan & Shaver, 1995; Bretherton, 1992; Hazan & Zeifman, 1999). This difference in conceptualization provided a feasible basis for not exploring the relationship of social support and attachment by utilizing support instruments that actually measure attachment as well.

As discussed above, social support was defined in the literature as perceived or enacted; researchers suggested that studies clearly define which approach to social support is being studied (Payne & Graham-Jones, 1997). Based on findings of divergent validity between perceived and enacted measures (Dunkel-Schetter & Bennett, 1990; McCormick et al., 1987; Ryan & Solky, 1996) as well as convergent validity with like-type measures (Barrera, 1986; Sarason et al., 1987), both types of which also have shown internal consistency reliability and construct validity (Sarason et al., 1987; Tardy, 1985), Tardy (1985) recommended that researchers identify the specific characteristics of support they intend to study. Such characteristics are direction (given or received), disposition (availability or enactment), description (satisfaction with enacted or perceived support), and content (emotional, instrumental, informational, and appraisal from others; Tardy, 1985). Payne and Graham-Jones (1987) stated that, "what we are still ignorant about is which aspects of support work best for whom, under what conditions" (p. 202).

The current study explores received, enacted social support (called enacted support for the remainder of this document) in relation to loneliness and satisfaction with support in later life under the condition of adult attachment. The support measure used is the Inventory of Socially Supportive Behaviors (ISSB; Barrera et al., 1981), the content of which addressed

the amount of informational, instrumental, and appraisal provisions received by respondents within a month of completing the self-report survey.

In summarizing the literature, older adults when compared with younger adults may report loneliness less frequently; however, interindividual differences in loneliness among older adults provided the impetus for us to explore the reasons for these differences. Although measures of both instrumental and emotional social support were found to be related to affective outcomes including loneliness in prior studies, the proportion of variance explained in these studies was rather low. Satisfaction with support was found to be related to psychological and affective outcomes as well but satisfaction was not always positively related to the amount or type of support received. Adult attachment is a fairly new topic in gerontological research and was found to influence several later-life psychological and relationship dimensions. In addition, the theoretical concept of attachment as having global lifelong influence on both relationship and affective outcomes provided an intriguing and useful addition to our understanding of loneliness in later life.

Rationale

Research Questions

The research questions for this study are concerned with discovering attachment style patterns in older adults, determining the strength of a model predicting loneliness in later life that contained demographic, attachment, and social support variables, and exploring the moderating effects of attachment on the relationships of enacted support and satisfaction with enacted support on loneliness in later life. There are five research questions and 10 research hypotheses. The five research questions are:

1. Will attachment style patterns across this older sample replicate earlier studies of attachment in older adults? Will the pattern show a majority of older adults in the dismissing category, as found in earlier studies?

2. Will a stagewise block regression model (with order of entry based on theoretical concepts) containing exogenous demographic variables, attachment, enacted support, and satisfaction with enacted support significantly predict loneliness in later life?

3. Will secure, dismissing, preoccupied, and fearful attachment relate to loneliness in theoretically expected directions, within a stagewise block regression model predicting loneliness?

4. Will attachment moderate the effects of enacted support on loneliness in later life?

5. Will attachment moderate the effects of satisfaction with enacted support on loneliness in later life?

Hypotheses

Hypotheses for this study addressed the five questions shown above. Several of the questions resulted in hypotheses, as shown below:

Question 1: (Hypothesis 1).

H₁: A sample of adults aged 65 and older will show a higher mean of dismissing attachment than the means of secure, preoccupied, and fearful attachment.

Question 2: (Hypothesis 2).

H₂: A stagewise block regression model containing exogenous demographic variables (age, sex, income, living alone, bereavement, and self-reported health), attachment (secure, dismissing, preoccupied, fearful), enacted support (tangible, directive guidance,

interpersonal), and satisfaction with enacted support, will significantly predict loneliness in later life.

Question 3: (Hypotheses 3-6).

H₃: Secure attachment will be related to less loneliness for older adults.

H₄: Dismissing attachment will be related to less loneliness for older adults.

H₅: Preoccupied attachment will be related to greater loneliness for older adults.

H₆: Fearful attachment will be related to greater loneliness for older adults.

Question 4: (Hypotheses 7-9).

H₇: Attachment will moderate the relationship of received tangible support and loneliness in older adults.

H₈: Attachment will moderate the relationship of received directed guidance and loneliness in older adults.

H₉: Attachment will moderate the relationship of received interpersonal support and loneliness in older adults.

Research Question 5: (Hypothesis 10).

H₁₀: Attachment will moderate the relationship of satisfaction with received enacted social support and loneliness in older adults.

CHAPTER III

METHOD

Sample

A list comprising a sample of 1,000 adults, age 65 and older, was purchased from a company called Survey Sampling, Inc., in Fairfield, Connecticut. The requested sample consisted of individuals living in a specific metropolitan county of the non-industrial Midwest. Sampling sources included the white page listings of the phone book and other public records that are currently legal to use in sampling. The sample was selected by age (65 and older), and community dwelling living status; however, it was not possible to stratify by gender. The sampling frame consisted of 308 females and 693 males.

Procedures

Data were collected using self-report measures gathered via a mail survey (see Appendix A). The appropriate forms for conducting research with human subjects were completed and approved by the Iowa State University Institutional Review Board. The Dillman Tailored Design Method was used as the method for data collection (Dillman, 1999). Each individual in the sampling frame received up to four mailings (see Appendix A). The first letter announced that a survey was forthcoming, described the purpose of the survey, disclosed how the researcher obtained his or her name, reassured confidentiality, and emphasized the voluntary nature of participation. The second letter included the survey and reemphasized the importance, yet the voluntary nature, of responding. A postcard to remind

or thank respondents was followed by a fourth letter and another survey that was sent only to individuals who had not responded to the first survey mailing. The time frame for sending out the four mailings was one month from first letter to last, each mailing going out approximately one week apart.

Measures

Measures of the exogenous variables of age, sex, living alone, household income, bereavement, and self-reported health status can be seen on the survey (Appendix A) and codebook (Appendix A). Measures for adult attachment, enacted support, satisfaction with enacted support, and the outcome measure of loneliness are described below.

Loneliness

Loneliness was measured by the short format of the revised UCLA Loneliness Scale, Version 3 (Russell, 1996). The short form consists of 10 items culled from the original 20 items (Appendix B) and asks respondents to indicate how often (never, rarely, sometimes, always) they felt particular feelings that represented a unidimensional measure of social and emotional aspects of loneliness. Because the current study was conducted in the form of a mail survey, a shorter instrument was preferable to reduce the length of the questionnaire and enhance response rate (Dillman, 1999). Russell (1996) found that the short form had reliabilities and validities comparable to those of the long form. Corrected total-item correlations from several studies using the scale indicated which items were best to keep in the 10-question version. Scores were summed to create an index of loneliness from low to high (Russell, 1996).

The UCLA Loneliness Scale was tested with various samples including college students, schoolteachers, nurses, and older adults (Russell, 1996). Factor analysis across

samples validated using the scale as a unidimensional measure ranging from low to high loneliness (Russell, 1996). The scale was significantly correlated with other measures of loneliness, thus establishing construct validity. In addition, these correlations were greater in magnitude than significant correlations with measures of personality, self-esteem, and depression, thereby supporting the existence of discriminant validity (Russell, 1996). For older adults, the UCLA loneliness scale was significantly correlated with relationship variables: perceived social provisions, life satisfaction, depression, chronic illness, and self-rated health (Cutrona, Russell, & Rose, 1986; Russell, 1996). It should be noted that in prior studies comparing different-age samples, older adults measured lowest on loneliness overall (Russell, 1996). The current study did not compare levels of loneliness across age, but provided a descriptive distribution of loneliness scores for a sample aged 65 and older.

Adult Attachment

Adult attachment was assessed by two measures developed according to the Bartholomew and Horowitz (1991) two-dimensional, four-category model of adult attachment. This model is useful in the study of attachment style and various outcomes in a global sense, not necessarily related to particular interpersonal (i.e., romantic) relationships. The first measure used was the four-paragraph scenario Relationship Questionnaire (RQ), in which respondents identified the extent (ranging from 1 = not at all to 7 = very much like me) to which they agreed with four statements that characterized beliefs about themselves and others concerning interpersonal relationships (Appendix B).

The second measure used was the 30-item Relationship Scales Questionnaire (RSQ), in which respondents rated themselves from 1 (not at all) to 5 (most like me; Appendix B), with the intention of placing respondents into one of the four attachment types based on

scores on each of four factors. The results section of this study explains why the RSQ was not used for this study.

The two underlying dimensions of attachment were not measured for the current research, but were found to be viable in prior research (Griffin & Bartholomew, 1994). The two dimensions represent the internal working model of attachment, although that model cannot be measured directly. The model comprises both positive and negative images of self in regard to relationships with other people and positive and negative images of others in relation to self (Appendix C). Each of the four attachment types (secure, dismissing, preoccupied, and fearful) represents the configuration of the model of self and other. For example, the secure attachment type represents a positive model of self and positive model of other, while a dismissing attachment type represents a positive model of self and negative model of other.

The Bartholomew and Horowitz (1991) four-group model of attachment was found to be meaningful theoretically when compared empirically with other measures of adult attachment. This convergent validity was found both for the four categories of attachment type and for the two underlying dimensions of self and other (Brennan, Shaver, & Tobey, 1991; Griffin & Bartholomew, 1994). Discriminant validity was established as well; it was shown, for example, that the attachment dimensions were not reducible to the Big Five factor model of personality (Bartholomew & Horowitz, 1991). Finally, the RQ was found to be predictive of attachment effects among adults for self-confidence, psychological well-being, and social functioning (Diehl, Elnick, Bourbeau, & LaBouvie-Vief, 1998) and, in a sample of older adults, for depression and anxiety (Lanier, 1996), thus indicating that the use of the instrument is not limited to measuring the effects of attachment in dyadic relationships.

Enacted Support

The Inventory of Socially Supportive Behaviors (ISSB; Barrera, Sandler, & Ramsey, 1981) measured enacted support. The measure consists of 40 items that ask respondents how often in the last month (1 = not at all, 2 = once or twice, 3 = about once a week, 4 = several times a week, 5 = about every day) they received particular actions of support from anyone (Appendix B). The ISSB has a single second-order factor with high internal consistency across several studies, including, for example, .93 (Tardy, 1985) and .94 (Pretorius & Diedricks, 1993) in college student samples. A test-retest correlation of .88 was found over a time period of at least two days (McCormick et al., 1987). Reliability coefficients on the first-order factors were .85 (positive social exchange), .71 (tangible assistance), .83 (nondirective support), and .77 (directive guidance; Tardy, 1985). Construct validity was indicated by significant, though modest, correlations with a measure of negative life events in two studies, with coefficients of .41 (Barrera, 1981) and .38 (Sandler & Barrera, 1984), respectively. The ISSB demonstrated convergent validity in significantly correlating with the cohesion subscale of the Moos Family Environment scale (Barrera et al., 1981) and with network size measures (Sandler & Barrera, 1984), indicating that enacted support captured aspects of an individual's general social embeddedness. In addition, divergent validity between perceived and enacted support was demonstrated (Lakey & Lutz, 1996; Sarason et al., 1987).

Results of tests of predictive validity for the ISSB were mixed. Some question exists as to whether the unidimensionality is related to psychological outcomes, as suggested in Sarason et al. (1987), which indicated no significant relationship between the ISSB and loneliness, or whether three or four factors of the ISSB are more predictive. One study used

stepwise regression to explore outcomes for both the unidimensional and factored subscales of the ISSB to predict depression and life satisfaction (Finch et al, 1997). The unidimensional factor significantly predicted life satisfaction ($B = .22, p < .001$) but not depression ($B = .05, n.s.$). Of the ISSB subscales of tangible assistance, directive guidance, nondirective support, and positive social exchange, only tangible assistance and positive social exchange significantly predicted depression and only positive social exchange predicted life satisfaction.

The current research tested for a three- or four-factor measurement model, and utilized the ISSB instrument to measure received enacted support for older adults and the relation of enacted support to loneliness in later life. See the results section of this document for an explanation and description of how the factor structure of the ISSB was modified for the current study based on possible age/cohort-related responses to ISSB items.

Satisfaction with Enacted Support

A one-item measure was created to capture perception of satisfaction with overall social support. Respondents were asked to indicate how satisfied they were in general with the received support interactions they have with people in the context of the types of help asked about in the ISSB measure. The item was scored as 1 = very dissatisfied, 2 = dissatisfied, 3 = satisfied, and 4 = very satisfied. No neutral category was included, to force committed responses. The satisfaction measure was created for this study; therefore, there were no established reliabilities, validities, or predictive results from prior studies to report.

Other Variables in the Survey Not Used in the Current Study

A future project to come out of this research will be to study the relationship of attachment and social support to the experiences of caregiving and bereavement. The survey

(Appendix A) shows questions that were asked that addressed those issues. A contingency format was used so that respondents who had not been caregivers would be finished with the survey after answering the loneliness, social support, attachment, and demographic items. A final item allowed respondents to fill in an open-ended response with anything that they would like to add. It is the experience of this researcher that older respondents often want to explain or express thoughts and feelings aside from the closed-response items; they either may not answer those items or may alter them in some way. Older respondents seem to want to “tell” us about their experiences of bereavement and loss in particular. Providing a space for them to do so may preserve the format of the survey as well as allow respondents to feel that they are benefiting from participating in the research.

Analysis Plan

All analysis for this study was quantitative. Descriptive statistics were presented for all variables in either tabular or narrative form. After providing descriptive statistics on results, the task of creating indexes for the loneliness, adult attachment, and enacted support measures was undertaken. The original analysis plan for this research was to use the LISREL program for structural modeling for analysis; however, several of the standardized measures used (the ISSB to measure enacted support and the RSQ items to measure adult attachment) did not replicate factor structures reported in prior literature (see the results chapter for a description of alternate procedures). A new, as yet unreplicated measure of enacted support was created out of ISSB variables and the RSQ was eliminated from the study. The elimination of the RSQ from the study meant that only one measure of attachment (RQ), consisting of four separate single attachment category variables (secure, dismissing, preoccupied, and fearful), remained, precluding the use of structural modeling based on a

combination of items to measure the latent construct of attachment. Instead, a priori stagewise block regression models were used to analyze the results.

Stagewise block regression is an appropriate method for this study because the main predictor variables in question (attachment variables and enacted support variables) are at the interval level of measurement. The intentions of this research are to (a) determine if attachment, enacted support, and satisfaction with enacted support would significantly predict loneliness in a model containing prior known predictors; and (b) determine if attachment would moderate enacted support and satisfaction with enacted support in the outcome variable of loneliness. A limitation of using stagewise block regression was that the outcome variable of loneliness was measured on an ordinal scale (although used in regression in prior studies; e.g., Russell, 1996), as was the satisfaction with enacted support. However, an additional justification for using stagewise block regression was that, in lieu of utilizing structural modeling (which was precluded for this study, as noted above), the order in which the predictor variables should be entered into the model could be determined theoretically and conceptually in advance (Licht, 1995; Pedhazur & Schmelkin, 1991; Tabachnick & Fidell, 1989). The results presented in Chapter IV provide a detailed description of specific procedures used in analyzing the data.

CHAPTER IV

RESULTS

Response Rate

Three hundred seventy-eight viable, completed surveys were returned out of 1,000 surveys mailed (not including duplicate surveys sent out in the fourth mailing). After adjusting for deceased and unreachable potential respondents, the response rate (based on 892 cases) was 42%. The response rate was calculated by basing the sample size on the number of individuals in the sampling frame who actually received the survey. Although the sample was selected randomly from a particular demographic area, the researcher had no input as to the nature of the sample except for age and being community-dwelling rather than living in long-term care settings. The company compiling the sample used telephone book entries and other allowable public records as the sampling frame.

Of the original 1,000 surveys mailed, 108 were eliminated from the sampling frame: 15 were unusable because respondents were less than 65 years of age, 33 were undeliverable due to out-of-date addresses, and 60 were deceased (as reported by spouses or children). The elimination of these cases resulted in 892 remaining cases in the sampling frame, 47 of whom refused to participate in the study (7 wrote that they were disabled and would not or could not respond) but were included in the final sample size because they had received the survey. The number of surveys unaccounted for due to nonresponses were 514. Initially, then, the number of cases available for analysis was 378; however, in the course of data management,

the number of usable cases was reduced to 365 due to the further elimination of inappropriate participants (see the discussion below in the results section on living arrangements) and the elimination of several outliers identified during regression analysis. Finally, listwise deletion of cases during statistical analysis resulted in a functional sample of 295 cases for some of the data analysis procedures.

Demographic Characteristics of the Sample

Table 1 shows the characteristics of sex, age, marital status, living arrangement, occupational status, and household income.

Table 1

Demographic Characteristics of Sample Respondents (N = 378)

| | Number | Percent | Missing (n) |
|---|--------|------------------|-------------|
| Sex | | | |
| Male | 237 | 63.5 | 5 |
| Female | 136 | 36.5 | |
| Age | | | |
| 65-74 | 198 | 53.7 | 9 |
| 75-84 | 139 | 37.7 | |
| 85 and Older | 32 | 8.7 | |
| Marital Status | | | 5 |
| Married | 210 | 56.3 | |
| Separated or Divorced | 32 | 8.6 | |
| Widowed | 118 | 31.6 | |
| Never Married | 11 | 2.9 | |
| Other | 2 | .5 | |
| Living Arrangement ^a | | | |
| Alone | 142 | 38.2 | 6 |
| Spouse or Partner | 210 | 56.5 | 6 |
| Parent | 1 | .3 | 6 |
| Child | 16 | 4.3 | 6 |
| Brother or Sister | 4 | 1.1 | 6 |
| Other | 12 | 3.2 | 7 |
| Occupational Status ^a | | | |
| Working Full-time for Employer or self-employed | 24 | 6.4 ^a | 5 |
| Working Part-time for Employer or self-employed | 38 | 10.1 | 5 |

Table 1 (Continued)

| | | | |
|-----------------------------|-----|------|----|
| Working at home (homemaker) | 26 | 7.0 | 5 |
| Retired | 309 | 82.8 | 5 |
| Unemployed | 15 | 4.0 | 5 |
| Other | 18 | 4.8 | 5 |
| Household Income 2000 | | | |
| < \$14,999 | 59 | 17.5 | 41 |
| \$15,000 - \$29,999 | 97 | 28.8 | |
| \$30,000 - \$44,999 | 72 | 21.4 | |
| \$45,000 - \$59,999 | 44 | 13.1 | |
| \$60,000 - \$74,999 | 16 | 4.7 | |
| \$75,000 - \$99,000 | 24 | 7.1 | |
| > \$100,000 | 25 | 7.4 | |

^a Total number and percentage values do not add up to 378 and 100 respectively because respondents were asked to answer all that applied by responding “yes” or “no” to each category.

Race and Ethnicity

Race/ethnicity was not included in the table, although respondents were asked to answer yes or no about identifying themselves as African-American, Asian/Pacific Islander, Caucasian/White, Native American Indian/Alaskan Native, Other/Multiracial, and Spanish/Hispanic/Latino. Nearly all respondents were Caucasian/White ($n = 355$, 96.7%); 5 reported they were African American (.01%), 3 reported they were Asian/Pacific Islander (< .01%), 1 reported being American Indian/Alaskan Native (< .01%), and one reported Other (< .01 /Hispanic/Latino comprised only 2.4% of the sample ($n = 8$, missing = 39). The above percentages were calculated using the valid percent based on 367 cases.

Sex and Age

The majority of respondents were male ($n = 237$, 63.5%), matching the pattern of the original sample strata. Mean age of the sample was 74.7 (median = 74). The largest percentage of this non-institutionalized sample was aged 65-74 (53.7%), followed by 75-84 (37.7%) and 85 and older (8.7%). A weighted variable for sex was created to approximate a stratified sample by sex based on the population of the midwestern county where the sample

was drawn. However, this weighting had no effect on data analysis results, so the original unweighted variable was used in the analysis.

Marital Status

A slight majority of the sample was married at the time of the survey (56.3%). Because nearly twice as many males were included in the sampling procedures and responses, finding a majority in the married category was not unusual as older males are more likely to be married than older females (U.S. Bureau of the Census, 2001). Cross-tabulation using Pearson chi-square revealed significant sex differences for marital status ($\chi^2(3, n = 371) = 179.501, p < .01$). Table 2 shows marital status for males and females.

As expected in a sample of older adults, there were more married males and more widowed females (U.S. Bureau of the Census, 2001). The incidence of separated or divorced status was not great for this sample, but was slightly higher for females than for males. Never-married status was least common in this older sample, with slightly more females than males having never married.

Table 2

Marital Status for Males and Females in a Sample of Adults Age 65 and Older (N=371, missing = 1)

| <u>Sex</u> | <u>Marital Status^a</u> | | | | <u>% Total</u> |
|------------|-----------------------------------|---------------------------|-----------------------|------------------------|------------------------|
| | <u>% Married</u> | <u>% Separated or Div</u> | <u>% Widowed</u> | <u>% Never Married</u> | |
| Male | 52.4 (<i>n</i> = 194) | 3.0 (<i>n</i> = 11) | 7.3 (<i>n</i> = 27) | .8 (<i>n</i> = 3) | 63.5 (<i>n</i> = 235) |
| Female | 4.1 (<i>n</i> = 15) | 5.7 (<i>n</i> = 21) | 24.6 (<i>n</i> = 91) | 2.2 (<i>n</i> = 8) | 36.5 (<i>n</i> = 135) |

Note. Listwise Deletion

^a "Other" category eliminated from contingency analysis because of empty cell (two cases eliminated)

Living Arrangement

Respondents were asked to choose all that applied from a list of possible living arrangements. Table 1 above shows the distribution of living arrangements, with the majority living with a spouse or partner (56%, $n = 210$), followed by living alone (38%, $n = 142$). There were significant sex differences in living arrangements, with 82% of males living with a spouse or partner compared to 17.5% of females living with a spouse or partner ($\chi^2 \{1, n = 358\} = 168.419, p < .001$). There also were significant sex differences in living alone, with 16.2% of males living alone compared with 80.6% of females living alone ($\chi^2 \{1, n = 358\} = 141.298, p < .001$). Upon examination of the living arrangement write-in category of “other,” it was discovered that 6 of the 12 respondents selecting this category were living in assisted living or other congregate housing facilities with services for older adults. These were among seven cases that also were identified as possibly influential outliers during the subsequent regression analysis. The requested sample was for older adults living independently in the community, and, because it was not possible to tell whether these six congregate-living cases were living independently, they were removed from the cases used for analysis. In addition, the remaining six cases responding “other” were removed because the space provided for a write-in response was left blank or because answers were ambiguous as to the nature of the living arrangement.

Income and Occupation

A question on household income revealed that half of the sample had household incomes between \$15,000 and \$44,999 in the year 2000. A sizable percentage (17%) had household incomes of less than \$14,000 in that year, and 19.2% had incomes of \$60,000 or

more. Finally, 83% of respondents were retired at the time of the survey ($n = 309$). Eighty-five percent of males were retired ($n = 198$), compared to 78% of females ($n = 98$).

Descriptive Results for the Outcome Variable, Loneliness

As reported in prior literature (Russell, 1996), older adults generally reported less loneliness than younger adults, and results of individual loneliness variables tended toward a low level of loneliness for this sample of older adults. Table 3 presents mean levels of loneliness reported by this sample.

A loneliness index was created based on responses to 10 items comprising the short form of the UCLA Loneliness Scale (Russell, 1996). Response categories were reverse-coded from the survey for all variables so that the responses ranged from 1 = less loneliness to 4 = more loneliness. In addition, five items were further reverse-coded for direction (“How often do you feel close to people?”, “How often do you feel that there are people who really understand you?”, “How often do you feel that there are people you can turn to?”, “How often do you feel that there are people you can talk to?”, and “How often do you feel a lot in common with the people around you?”). Missing values for the index items were replaced by the mean for individual cases but only if a respondent had answered at least 8 out of the 10 index items. After recoding, a bivariate correlation matrix indicated that all 10 items were significantly and positively correlated. Cronbach’s reliability coefficient alpha value of .85 shows a strong pattern of internal consistency for the index.

Table 3

Means and Standard Deviations for Loneliness Items of the UCLA Loneliness Scale for A Sample of Older Adults (N = 365)

| Variables | Mean | SD | n | Missing |
|--|------|------|-----|---------|
| How often do you feel you lack companionship? | 2.11 | .836 | 359 | 6 |
| How often do you feel a lot in common with the people around you?* | 3.16 | .681 | 357 | 8 |
| How often do you feel close to people?* | 3.17 | .680 | 354 | 11 |
| How often do you feel left out? | 2.15 | .727 | 354 | 11 |
| How often do you feel that no one really knows you well? | 2.31 | .788 | 356 | 9 |
| How often do you feel isolated from others? | 2.00 | .799 | 357 | 8 |
| How often do you feel there are people who really Understand you?* | 2.91 | .721 | 356 | 9 |
| How often do you feel that people are around you but not with you? | 2.36 | .769 | 357 | 8 |
| How often do you feel that there are people you can talk to?* | 3.38 | .709 | 355 | 10 |
| How often do you feel that there are people you can turn to?* | 3.38 | .772 | 357 | 8 |

^a Measurement: Range = 1 (low loneliness) to 4 (High loneliness) 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Always.

* Variable reverse-coded for direction before constructing Loneliness index.

A higher index score indicated a higher level of loneliness. Creation of the index included dividing the summation by 10, the number of items in the scale, such that results would be interpretable based on the original measures of loneliness on ordinal scales, each with a range of 1-4. The mean loneliness score for the sample of valid cases ($n = 358$, missing = 7) was 1.99, with standard deviation of .4846. The median was 2.0, with minimum score of 1.0 and maximum score of 3.50. Figure 1 shows the histogram for the distribution of the loneliness index.

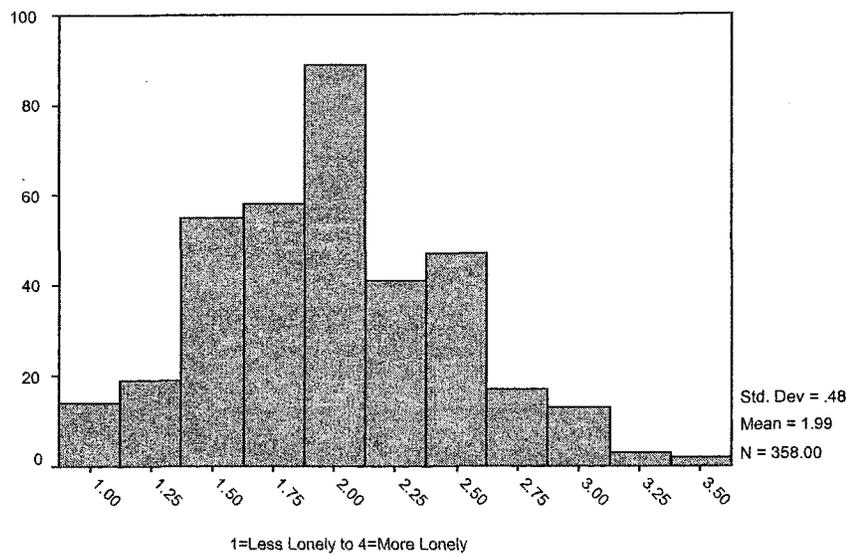


Figure 1. Histogram of Distribution of Loneliness Index (10 variables) in a Sample of Adults Age 65 and Older ($n = 295$).

Descriptive Results for Health and Bereavement

As reported in Chapter I, prior literature on loneliness in later life was related to age, sex, marital status, living alone, and income. In addition, loneliness was found to be related to health status and recent bereavement. Health status was measured for this study by asking respondents to report subjectively on their own health as excellent, good, fair, or poor. A majority of respondents rated their health as “good” (54%, $n = 193$), followed by “fair” (26%, $n = 92$) and “excellent” (14%, $n = 52$). Only 6% ($n = 20$) identified their own health as “poor.”

Bereavement was measured by asking respondents if they had experienced the death of someone to whom they were close in their adult lives. A great majority of the sample responded “yes” to this question (92%, $n = 365$, missing = 9). The literature reported findings that bereavement of someone close was related to loneliness (Stroebe et al., 1996).

In addition, 35% of respondents to the current survey indicated that their most recent loss due to death had occurred between 1998 and the time of data collection in 2001 ($n = 124$).

Descriptive Results for Attachment

Two instruments—the Relationship Scales Questionnaire (RSQ) and the Relationship Questionnaire (RQ)—both measures of adult attachment developed by Griffin and Bartholomew (1994), were used to measure attachment. The modified RSQ utilized for this study (modified by using only those items considered appropriate for a typical older sample by, for example, eliminating items referring specifically to dating) consisted of 17 questions for which respondents circled numbers in the range from 1 = “not at all like me” to 5 = “very much like me.” Individual variables were intended to be combined into indexes reflecting the extent to which respondents manifested four attachment types (secure, dismissing, preoccupied, and fearful). Results of the RSQ are shown in Table 4.

Table 4

Means and Standard Deviations for Relationship Scales Questionnaire Items of Attachment in Older Adults (N = 365)

| Variables | Mean | SD | n | Missing |
|--|------|-------|-----|---------|
| I find it difficult to depend on other people (F) | 3.18 | 1.342 | 355 | 10 |
| It is important for me to feel independent (D) | 3.99 | 1.256 | 360 | 5 |
| I find it easy to get emotionally close to others (S) | 3.01 | 1.260 | 360 | 5 |
| I worry I'll be hurt if I allow myself to become too close to others (F) | 2.10 | 1.258 | 353 | 12 |
| I am comfortable without close emotional relationships (D) | 3.08 | 1.317 | 358 | 7 |
| I want to be completely emotionally intimate with others (P) | 2.16 | 1.228 | 358 | 7 |
| I worry about being alone (S-reversed)* | 2.04 | 1.294 | 357 | 8 |
| I am comfortable depending on other people (S) | 2.05 | 1.192 | 360 | 5 |
| I find it difficult to trust others completely (F) | 2.60 | 1.318 | 359 | 6 |
| I am comfortable when others depend on me (S) | 3.50 | 1.228 | 359 | 6 |
| I worry that others don't value me as much as I value them (P) | 2.28 | 1.271 | 358 | 7 |
| It is very important to me to feel self-sufficient (D) | 4.19 | 1.094 | 357 | 8 |
| I prefer not to have others depend on me (D) | 2.82 | 1.379 | 356 | 9 |
| I am uncomfortable being close to others (F) | 2.34 | 1.270 | 356 | 9 |
| Others are reluctant to get as close as I want (P) | 2.32 | 1.245 | 354 | 11 |
| I prefer not to depend on others (D) | 3.59 | 1.413 | 359 | 6 |
| I worry about having others not accept me (S-reversed)* | 2.24 | 1.295 | 358 | 7 |

Note: S = secure attachment, D = dismissing attachment, P = preoccupied attachment, F = fearful attachment. Measurement: 1 = not at all like me, to 5 = very much like me.

* Variable reversed before analyzing descriptive statistics

Although distributions of the RSQ items were normal, the items did not sort into appropriate attachment categories using either a structural approach (in LISREL) nor in checking for Cronbach alpha internal consistency reliability. Cronbach alpha values for each of the four attachment scales were unacceptably low: Secure Attachment (alpha = .3204, five variables), Dismissing Attachment (alpha = .5942, five variables), Preoccupied Attachment (alpha = .4705, three variables), and Fearful Attachment (alpha = .5582, four variables). An exploratory factor analysis, with maximum likelihood extraction restricting factor solutions to four, resulted in outcomes that could not be interpreted conceptually. The majority of individual items would not load exclusively on each of the four factors, much less on the factor conceptually appropriate for each attachment type. An interesting pattern was that question wording appeared to influence loading. In particular, items with the terms “worry,” “depend,” and “independent” tended to factor together, no matter which type of attachment the item was measuring. Although it was beyond the scope of the current study to explore, it was possible that this older sample was interpreting the words “worry,” “depend,” and “independent” in different, age/cohort-related ways than the younger samples most often measured by the RSQ up to this point (Griffin & Bartholomew, 1994). Because of this possibility the RSQ was not used as planned for the current study, with a recommendation that question wording for attachment measures for older adults be explored in future research.

The second adult attachment measure used for this research was the Relationship Questionnaire (RQ; Griffin & Bartholomew, 1994). This measure consists of four paragraphs (Appendix B) that were found to describe each of the four adult attachment types (secure,

dismissing, preoccupied, fearful) accurately (Griffin & Bartholomew, 1994). Individuals selected how much or how little they were like or unlike each paragraph on a scale ranging from 1 = least like me, to 7 = most like me.

Individual respondents were not sorted into discrete attachment categories for the current study due to some survey respondents choosing the same level (on the 1-7 scale) for more than one attachment style. The measure asks respondents to choose the strength of agreement they have along a continuum of attachment for each paragraph describing an attachment style. Self-directed mail survey results were that many individuals selected the same number on the continuum for more than one attachment style variable. Therefore, the interpretation of results was based on overall mean differences of attachment styles rather than on taking a grouping approach. Discrete grouping approaches have the advantage of allowing the type of analysis that captures complex differences between types; however, Griffin and Bartholomew (1994b) also pointed out that a grouping approach may lead to a simplistic interpretation of individual behavior, requiring particular features that are “individually necessary or jointly sufficient to define group membership” (Griffin & Bartholomew, 1994b, p. 23). A dimensional approach to attachment measurement, on the other hand, that is, determining how each individual in a sample measures on all four attachment types, can give a more complete picture of the predictive power of attachment overall (Griffin & Bartholomew, 1994b). For the current study the dimensional approach to adult attachment measurement is used to predict loneliness in older adults. Descriptive results of the RQ for this study can be seen in Table 5.

Table 5

Means, Standard Deviations, and Standard Errors for the Relationship Questionnaire (RQ) Attachment Measure of a Sample of Adults Age 65 and Older (N = 365)

| Attachment Categories | Mean | SD | SE | <i>n</i> | Missing |
|-----------------------|------|-------|------|----------|---------|
| Secure | 4.54 | 1.640 | .087 | 356 | 9 |
| Dismissing | 4.58 | 1.681 | .089 | 359 | 6 |
| Preoccupied | 3.02 | 1.689 | .089 | 357 | 8 |
| Fearful | 3.13 | 1.646 | .087 | 357 | 8 |

Note. Range of possible scores for each category variable: 1 = least like me, to 7 = most like me

The RQ data were normally distributed, with an empirical range of 1-6 and a possible range of 1-7. Attachment mean results supported prior findings for older samples, showing a pattern of higher means in the dismissing and secure categories than in the preoccupied and fearful categories (Webster, 1997). Prior research also found that older adults tended to measure predominantly into the dismissing category of attachment (Magai et al., 2001; Webster, 1997), in comparison to studies with younger adult samples who generally measured highest in the secure category (Feeney & Noller, 1996). For the current study, in which individuals were not restricted to discrete categories of attachment, the secure and dismissing means were alike, as were the preoccupied and fearful categories. Although the means and standard deviations of the secure and dismissing categories for the current study

were virtually identical, the dismissing category median was slightly higher (5.00) compared to the secure category median (4.00).

Enacted Support

The Inventory of Socially Supportive Behaviors (ISSB) (Barerra et al., 1981) measured enacted support. Descriptive results are shown in Table 6. Distribution of the enacted support variables, with a minimum of 1 (not at all) and maximum of 5 (about every day), indicated the presence of floor effects and little variation in the dimensions of directive guidance (grand mean = $22.67/14 = 1.6$) and tangible support (grand mean = $16.29/12 = 1.4$). Positive social exchange (grand mean = $18.88/8 = 2.36$) and non-directive support (grand mean = $14.81/6 = 2.46$) had slightly more normal distributions, although measurement of some individual variables revealed floor effects on these dimensions as well. Confirmatory factor analysis was attempted in LISREL to test whether the ISSB was more viable as a three- or four-factor model, as both found support in prior literature (Finch et al., 1997; McCormick et al., 1987). For this sample of older adults, the ISSB items did not load discriminately into any identifiable dimensions, as outlined by Finch or McCormick, even after attempts taking up to 26 iterations. Removal of specific non-normally-distributed variables from the analysis (the four money related tangible support variables) did not improve discriminant factor loading or model fit. Ultimately, confirmatory factor analysis was not used to index the enacted support measures for this research. Although it was beyond the scope of this study to determine why the ISSB scales did not factor as expected, a suggestion for further exploration would be to replicate use of the measure with more samples of older adults to determine if age/cohort issues affect the behavior of this measure,

particularly regarding the way current older cohorts interpret the language used to describe support.

Table 6

Means and Standard Deviations for the ISSB Measure of Received Social Support for a Sample of Adults Age 65 and Older (n = 365)

| Support Dimensions and Variables | Mean | SD | <i>n</i> | Missing |
|--|------|-------|----------|---------|
| Directive Guidance | | | | |
| Information on how to do something | 2.20 | 1.030 | 354 | 11 |
| Helped understand why you didn't do well | 1.52 | .851 | 352 | 13 |
| Suggested some action you should take | 1.97 | 1.019 | 354 | 11 |
| Gave neutral feedback on action | 1.77 | 1.021 | 350 | 15 |
| Made clear what expected of you | 1.61 | .962 | 350 | 15 |
| Gave information to understand situation | 1.67 | .898 | 351 | 14 |
| Checked to see if followed advice | 1.36 | .718 | 352 | 13 |
| Taught you how to do something | 1.57 | .748 | 352 | 13 |
| Told you who to see for assistance | 1.55 | .756 | 353 | 12 |
| Told you what to expect in situation | 1.46 | .750 | 352 | 13 |
| Said things to make situation clearer | 1.69 | .827 | 351 | 14 |
| Assisted in setting goal for yourself | 1.36 | .711 | 352 | 13 |
| Told what he/she did in similar situation | 1.47 | .739 | 352 | 13 |
| Told what he/she felt in similar situation | 1.47 | .715 | 352 | 13 |
| Non-Directive Support | | | | |
| Told you he/she feels close to you | 2.38 | 1.401 | 350 | 15 |
| Let you know will always assist | 2.68 | 1.441 | 354 | 11 |
| Expressed interest in your well-being | 3.05 | 1.327 | 354 | 11 |
| Comforted you with physical affection | 2.71 | 1.478 | 353 | 12 |
| Told you you're OK just the way you are | 2.20 | 1.330 | 349 | 16 |
| Told you he/she would keep talk private | 1.79 | 1.129 | 351 | 14 |

Table 6 (continued)

Positive Social Exchange

| | | | | |
|---|------|-------|-----|----|
| Expressed esteem for personal quality | 2.35 | 1.184 | 347 | 18 |
| Was physically with you in time of stress | 2.36 | 1.442 | 345 | 20 |
| Listened to you talk about private feelings | 2.40 | 1.319 | 349 | 16 |
| Participated in activity to distract you | 2.24 | 1.278 | 350 | 15 |
| Let you know you did something well | 2.50 | 1.219 | 346 | 19 |
| Talked to you about your interests | 2.62 | 1.229 | 346 | 19 |
| Joked and kidded to try and cheer you up | 2.33 | 1.332 | 349 | 16 |
| Agreed what you wanted to do was right | 2.08 | 1.217 | 351 | 14 |

Tangible Assistance

| | | | | |
|--|------|-------|-----|----|
| Gave you over \$25.00 | 1.17 | .481 | 351 | 14 |
| Gave you under \$25.00 | 1.10 | .419 | 352 | 13 |
| Loaned you over \$25.00 | 1.01 | .106 | 352 | 13 |
| Loaned you under \$25.00 | 1.02 | .232 | 352 | 13 |
| Provided you with a place to stay | 1.38 | 1.076 | 352 | 13 |
| Pitched in to help do something important | 2.34 | 1.228 | 352 | 13 |
| Loaned/Gave something (not money) | 1.55 | .921 | 351 | 14 |
| Provided you with transportation | 1.81 | 1.224 | 353 | 12 |
| Went with you to someone taking action | 1.37 | .850 | 349 | 16 |
| Provided a place for you to get away | 1.26 | .724 | 348 | 17 |
| Looked after family member while you were away | 1.24 | .746 | 352 | 13 |
| Watched your possession while you were Away | 1.73 | 1.182 | 353 | 12 |

Note. Each variable was measured by asking respondents how often in the last month other people had provided the support described. Response categories offered were: 1 = not at all, 2 = once or twice a month, 3 = once a week, 4 = several times a week, and 5 = just about every day.

The measured enacted support variables of the ISSB were utilized to create enacted support scales for the current study, based on conceptual groupings for different dimensions of received support. Because of the extreme floor effects for all variables concerning money received by respondents from others, these four variables of the tangible support dimension were not used in the analysis. The ISSB variables were indexed into three measures of received support and the dimensionality of these indexes was checked using a-priori-determined maximum likelihood factor analysis with varimax rotation. The methodology of the process for creating enacted support indexes for this research is described below.

Internal Consistency of Four Factors of Enacted Support

Internal consistency reliability for each of the four identified scales (leaving out the four variables concerned with receiving money; Barerra et al., 1981) was tested using Cronbach's alpha in SPSS 10.1. Robust values of coefficient alpha were obtained for all four indexes: Positive Social Exchange (alpha = .9182, nine variables), Non-Directive Support (alpha = .9012, five variables), Directive Guidance (alpha = .9248, 14 variables), and Tangible Assistance (alpha = .8003, 12 variables).

Reduction of Enacted Support Measure to Three Factors

Correlation analysis between the four indexes revealed a high correlation between Positive Social Exchange and Non-Directive Support ($r^2 = .789, p < .001$). Statistically, this indicated a potential multicollinearity problem for using these indexes as separate predictors in subsequent analysis. Conceptually, the items comprising both indexes concerned interpersonal support received, but may not have been perceived by respondents as falling into separate patterns of positive social exchange and non-directive support as conceptualized

by Barerra et al. (1981). Although further research on these measures with older adults must be carried out, for the current sample it appeared that the interpersonal support of positive social exchange (i.e., “Talked to you about your interests”) was not differentiated from the general supportive presence of non-directive support (i.e., “Told you he/she feels close to you”). The decision was made to combine the items from the categories of positive social exchange and non-directive support and to re-test internal reliability consistency. Results yielded high internal consistency for the index ($\alpha = .9437$, 14 variables). Bivariate Pearson correlations between the three dimensions were all significant (see Table 7) but, as there were no correlations so high as .80, they were not so high that multicollinearity would be likely to pose the threat of a Type II error (Licht, 1995).

Table 7

Pearson Correlation of Three Enacted Received Social Support Indexes (n = 353)

| | Direct Guidance | Personal Support | Tangible Support |
|--------------------|-----------------|------------------|------------------|
| Directive Guidance | 1.00 | | |
| Personal Support | .453** | 1.00 | |
| Tangible Support | .435** | .518** | 1.00 |

** $p < .01$

Note. Two-tailed, listwise deletion.

Factor Analysis Verification of Three-Factor Enacted Support Measure

The dimensionality of the 36-viable items of the enacted support measures was analyzed using maximum likelihood factor analysis with varimax rotation. The criteria used to determine the number of factors to rotate were the: (a) a priori hypothesis that there would

be three factors, each one representing a specific enacted support concept; (b) scree plot; and (c) interpretability of the factor solution (that is, did individual items load together in the expected conceptual patterns?). Figure 2 shows the scree plot three-factor solution.

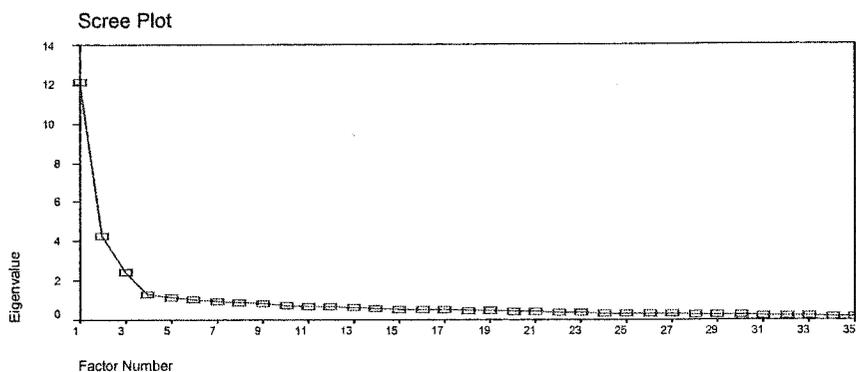


Figure 2. Scree Plot for Enacted Received Social Support Factors Using Maximum Likelihood Factor Analysis ($n = 353$)

Three factors were rotated using varimax rotation. The rotated solution (as shown in Table 8) resulted in three interpretable factors. These factors conceptually represented enacted support in the following dimensions: (a) someone helping respondents take specific action to solve a problem (called Tangible Support); (b) someone helping respondents to address a problem through verbal interaction with the respondent, such as giving advice (called Directive Guidance); and (c) someone helping respondents by general interpersonal support that may not be specifically problem-directed but shows care and regard for the person (called Interpersonal Support). One item (“pitched in to help do something important”) loaded strongly on two factors. This item was included in the Tangible Support index based on a higher loading there, and because the variable describes actually taking an action to solve a problem. The three-factor structure explains 49.3% of the total item variance.

Table 8

Correlations Between Received Social Support Items and Received Social Support Factors (n = 353)

| Items | Factors | | |
|--|------------------|--------------------|-----------------------|
| | Tangible Support | Directive Guidance | Interpersonal Support |
| Tangible Support | | | |
| Provided you with a place to stay | .600 | .010 | .091 |
| Pitched in to help do something important | .515 | .126 | .436 |
| Loaned/gave something needed (not money) | .455 | .307 | .202 |
| Provided you with transportation | .610 | .138 | .184 |
| Went with you to someone taking action | .662 | .278 | .174 |
| Provided a place for you to get away | .628 | .204 | .124 |
| Looked after family member while you away | .501 | .228 | .015 |
| Watched your possessions while you were away | .561 | .131 | .082 |
| 8.93% of Item Variance | | | |
| Directive Guidance | | | |
| Information on how to do something | .123 | .590 | .203 |
| Helped understand why you didn't do well | .200 | .643 | .004 |
| Suggested some action you should take | .238 | .546 | .179 |
| Gave neutral feedback on action | .188 | .503 | .264 |
| Made clear what expected of you | .141 | .620 | .167 |
| Gave information to understand situation | .171 | .711 | .208 |
| Checked to see if you followed advice | .123 | .724 | .072 |
| Taught you how to do something | .056 | .694 | .080 |
| Told you who to see for assistance | .208 | .651 | .119 |
| Told you what to expect in situation | .210 | .661 | .250 |
| Said things to make situation clearer | .090 | .662 | .210 |
| Assisted in setting goal for yourself | .099 | .655 | .187 |
| Told what he/she did in similar situation | .073 | .658 | .148 |
| Told what he/she felt in similar situation | .102 | .625 | .199 |
| 18.8% of Item Variance | | | |
| Interpersonal Support | | | |
| Told you he/she feels close to you | .063 | .101 | .731 |
| Let you know will always assist | .107 | .086 | .794 |
| Expressed interest in your well-being | .134 | .095 | .803 |
| Comforted you with physical affection | .101 | .065 | .767 |
| Told you you're OK just the way you are | .091 | .125 | .741 |
| Told you he/she would keep talk private | .167 | .263 | .528 |
| Expressed esteem for personal quality of yours | .068 | .204 | .734 |
| Was physically with you in times of stress | .317 | .267 | .619 |
| Listened to you talk about private feelings | .168 | .159 | .731 |
| Participated in activity to distract your mind | .106 | .223 | .795 |
| Let you know you did something well | .211 | .213 | .606 |
| Talked to you about your interests | .081 | .226 | .679 |
| Joked and kidded to try and cheer you up | .151 | .251 | .689 |
| Agreed what you wanted to do was right | .396 | .245 | .599 |
| 21.5% of Item Variance | | | |

Note. Listwise deletion

Internal consistency of each scale of the three-factor measure of enacted support was tested using Cronbach's alpha. Internal consistency was determined to be acceptable for all three measures: Tangible Support (alpha = .8155, 8 items), Directed Guidance (alpha = .9193, 14 items), and Interpersonal Support (alpha = .9437, 14 items).

Descriptive Results for Satisfaction with Enacted Support

Satisfaction with enacted support was measured by asking respondents to circle one number on a scale that best described their perspective, ranging from 1 (very dissatisfied) to 7 (very satisfied; see survey, Appendix A). The intervening numbers, 2 through 6, were labeled roughly as "dissatisfied," "neither satisfied nor dissatisfied," and "satisfied." However, the labels were not representative of specific numbers on the scale, but act as guides of directionality for respondents. The majority of respondents indicated that they were satisfied or very satisfied with enacted support (mean = 5.45, SD = 1.207, median = 6.00, mode = 6). The distribution was negatively skewed, ($z_{\text{skewness}} = -.921/.129 = 7.139$), reflecting the majority of "satisfied" responses. Kurtosis was positive and slightly above the acceptable limit of 1.96 (Field, 2000) ($z_{\text{kurtosis}} = .560/.257 = 2.187$). A natural log was taken of the satisfaction with received support measure; however, this resulted in no improvement in the closeness to normality of the distribution. Collapsing the variable (i.e., assigning numbers on the scale 1–3 as dissatisfied and 5–7 as satisfied, and eliminating number 4 as neutral) was not feasible as the scale was not set up as discrete numerical categories. Labels of "satisfied," "neither satisfied nor dissatisfied," etc., were applied simply as guides for respondents in selecting a response on the continuum between very dissatisfied and very satisfied. The importance of satisfaction with support in predicting affective outcomes was

shown in the literature (Sarason et al., 1983); therefore, the measure was used in this analysis with the limitation that due to skewness, caution must be taken when interpreting results.

Hypothesis Tests

Stagewise block regression was used to address four research questions by testing 10 hypotheses. The first research question explored the distribution of attachment styles (1 hypothesis), the second question tested a stagewise block model for predictors of loneliness (five hypotheses), the third research question concerned moderation effects of attachment on enacted support for predicting loneliness (three hypotheses), and the fourth research question concerned attachment as a moderator for the relationship of satisfaction with enacted support and loneliness (one hypothesis).

The following section reports on the results of hypothesis tests for the model. There is an extensive explanation of model adjustment and diagnostics in the result report for hypothesis two, the stagewise block regression model.

Results of the Attachment Mean Distribution(Hypothesis 1)

The first research question was “Will attachment style patterns across this older sample replicate earlier study of attachment in older adults? Will the pattern show a majority of older adults in the dismissing category as found in earlier studies?”

H₁: A sample of adults aged 65 and older will show a higher mean of dismissing attachment than for means of secure, preoccupied, and fearful attachment.

Hypothesis one was not supported. Older adults did not indicate a significantly greater dismissing attachment style than a secure attachment style. A one-way, within-subjects repeated measures ANOVA was conducted in SPSS to determine mean differences of attachment styles across the sample of respondents, each of whom was measured for a

level on each attachment type variable. Diagnostics showed that the data violated the assumption of sphericity (using Mauchly's test of sphericity), which indicated that the variances of the differences in attachment styles may not have been equal. The Greenhouse-Geisser correction is a test for the severity of the violation of sphericity, and should indicate a value as close to 1.00 as possible, although this test is also quite conservative and may result in a Type I error (Field, 2002). The Greenhouse-Geisser statistic for the comparison of attachment means was .915, indicating that the sphericity violation was not severe.

Between subjects effects were significant ($(F, [1,353] = 5424, p = <.001]$). The within-subjects factors were four attachment styles (secure, dismissing, preoccupied, and fearful), each with seven levels (scales measured from 1 = least like me, to 7 = most like me). Results, using the Greenhouse-Geisser correction, showed significant within-subjects effects ($(F, [3, 969] = 103.80, p < 0.001)$)

Six paired-sample t-tests, using Bonferroni correction ($.05/6 = .0083$), were used to analyze the results of the significant omnibus test. Results (using listwise deletion) showed that:

- The mean of secure attachment ($M = 4.53, SD = 1.63$) was significantly greater than the mean of preoccupied attachment ($M = 3.03, SD = 1.69$) $t(354) = 12.72, p = <.001$.
- The mean of secure attachment ($M = 4.53, SD = 1.63$) was significantly greater than the mean of fearful attachment ($M = 3.14, SD = 1.65$), $t(354) = 10.84, p = <.001$.
- The mean of dismissing attachment ($M = 4.56, SD = 1.67$) was significantly greater than the mean of preoccupied attachment ($M = 3.03, SD = 1.69$) $t(355) = 13.1, p = <.001$.
- The mean of dismissing attachment ($M = 4.56, SD = 1.67$) was significantly greater than the mean of fearful attachment ($M = 3.14, SD = 1.65$), $t(355) = 13.24, p = <.001$.

Preliminary Test of A Stagewise Block Model Predicting Attachment (Hypothesis 2)

The second research question was “Will a stagewise block regression model (with order of entry based on theoretical concepts) containing exogenous demographic variables, attachment, enacted support, and satisfaction with enacted support significantly predict loneliness in later life?”

Hypothesis 2: A stagewise block regression model containing exogenous demographic variables (age, sex, income, living alone, bereavement, and self-reported health), attachment (secure, dismissing, preoccupied, fearful), enacted support (tangible, directive guidance, interpersonal), and satisfaction with enacted support, will significantly predict loneliness in later life.

A planned multiple stagewise block regression was conducted to test whether attachment predicted loneliness in a model containing the known predictors of age, sex, living arrangement, marital status, income, self-reported health, and bereavement, as well as theorized predictors of attachment, enacted support, and satisfaction with social support. Exogenous variables entered in the first ordered block were age, sex, living arrangement, marital status, income, self-reported health, and bereavement. The attachment variables (secure, dismissing, preoccupied, and fearful) were entered in the second block as antecedent theoretically to enacted support and satisfaction with social support. Enacted support variables were entered in the third block (Tangible, Directive Guidance, and Interpersonal) and satisfaction with received support was added in the fourth block.

Adjustments to the Stagewise Block Model

Upon examination of the full model, it was found that the variance inflation factors for marital status and living alone were considerably higher than for all other predictor

variables (5.147 and 4.593, respectively; all other VIFs were < 2). This was a concern, although it is customary to be concerned about predictor multicollinearity > 10 (Bowerman & O'Connell, 1990; Myers, 1990). Recall from the literature review in Chapter 2, however, that prior research on the behavior of these variables when used together in models predicting loneliness had not separated successfully the effects of sex, marital status, and living arrangement (de Jong-Gierveld, 1987; Dykstra, 1995). In the current study, bivariate exploration of the correlations between marital status, living alone, and sex showed that the relationship between living alone and marital status was significant and highly correlated ($r = .865, p < .01$). Sex was correlated significantly to both living alone ($r = .657, p < .01$) and marital status ($r = .648, p < .01$). In light of the difficulty of determining the separate influence of these variables when used together in prior research, it was decided to attempt to reduce confounding in the current study and produce a more parsimonious model by eliminating marital status from the analysis. Living alone was retained because marital status had a higher correlation with the predictor variable of sex than did living alone, and because living alone covered broader conceptual territory in the sense that respondents of any marital status could be living alone. It should be noted that sex, marital status, or living alone were not related significantly to loneliness in bivariate correlation. Only sex was significant in the stagewise block model, although sex, marital status, and living alone contributed to the overall model for predicting loneliness, as t-tests are conditioned by all values in models, whether significant or not (Lillifors, 2002), and effect size for the model in this study was reduced when living alone was removed.

A second model was estimated with all of the original variables included, except for marital status. Once again, age, sex, household income, living alone, self-reported health, and

the death of someone close within the past two years were entered in the first ordered block, followed by the attachment variables in the second block (secure, dismissing, preoccupied, and fearful), enacted support in the third block (tangible, direct guidance, interpersonal), and finally satisfaction with social support in the fourth block. Listwise deletion of missing cases was used, resulting in analysis conducted on 295 cases out of 365. This resulted in 19 cases per variable, which was an acceptable ratio (Field, 2000). The model without marital status showed a significant change in F for each added block of variables, resulting in a slight improvement in the value of adjusted R^2 ($R^2 = .438$, $F\{1, 280\} = 43.460$, $p < .001$, adjusted $R^2 = .410$). Table 9 shows the model summary for all four blocks.

Table 9

*Stagewise Block Regression Model Effect Size for Change Predicting Loneliness in Adults Age 65 or Older (n = 295)**

| Model Summary | | | | | | | | | |
|---------------|------|----------|-------------------|----------------------------|-------------------|--------|-----|-----|---------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
| | | | | | R Square Change | F | df1 | df2 | Sig. F Change |
| 1 | .280 | .079 | .059 | .47492 | .079 | 4.099 | 6 | 288 | .001 |
| 2 | .484 | .235 | .208 | .43589 | .156 | 14.471 | 4 | 284 | .000 |
| 3 | .592 | .350 | .320 | .40372 | .116 | 16.687 | 3 | 281 | .000 |
| 4 | .662 | .438 | .410 | .37629 | .087 | 43.460 | 1 | 280 | .000 |

* Listwise deletion and removal of influential outliers resulted in analysis sample size of $n = 295$.

Model Diagnostics

Assumptions regarding the model were checked by evaluating the Durbin-Watson statistic for autocorrelation, plots (regression, residual, and normal probability), a model histogram, partial probability plots, confidence intervals, and collinearity diagnostics.

The Durbin-Watson statistic tests for correlation between errors, which, if it exists, is a violation of the assumption of independent residuals. Values of the Durbin-Watson statistic that are significantly different from 2 indicate that this assumption has been violated (Field, 2000). The Durbin-Watson statistic for the current model was 2.096, which is just within acceptable standards.

Regression plots indicate whether there is a linear relationship between variables in the model. The regression plot for the current model indicated a linear relationship (see Figure 3).

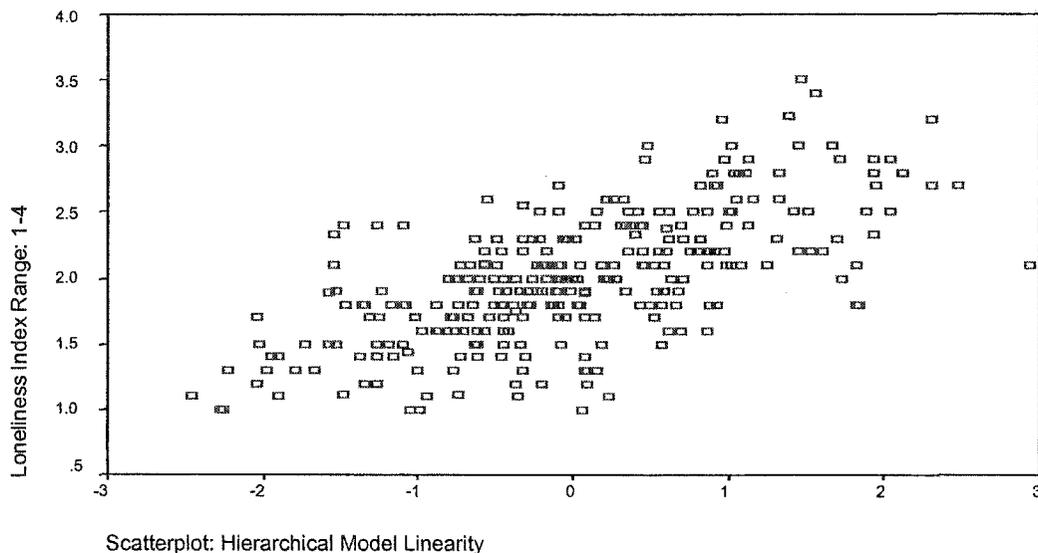


Figure 3. Regression Standardized Predicted Values Plot for Stageswise Block Model Predicting Loneliness in Adults Aged 65 and Older ($n = 295$)

Several possible influential outliers were apparent on the regression plot for the model and were identified in the analysis as influential. Thus, the three influential cases were removed before estimating the final model. The current model had no identified predicted values with standard deviations of more than three.

Residual plots can show whether the assumption of homoscedasticity is violated by the data. In other words, can we expect that different populations would have equal variances in the dependent variable for the same values in the independent variable (Vogt, 1999)? The plot pattern indicating homoscedasticity should show a random array of data points around zero. The residual plot of the current stagewise block model showed this random pattern, indicating that the assumption of homoscedasticity was not violated (see Figure 4).

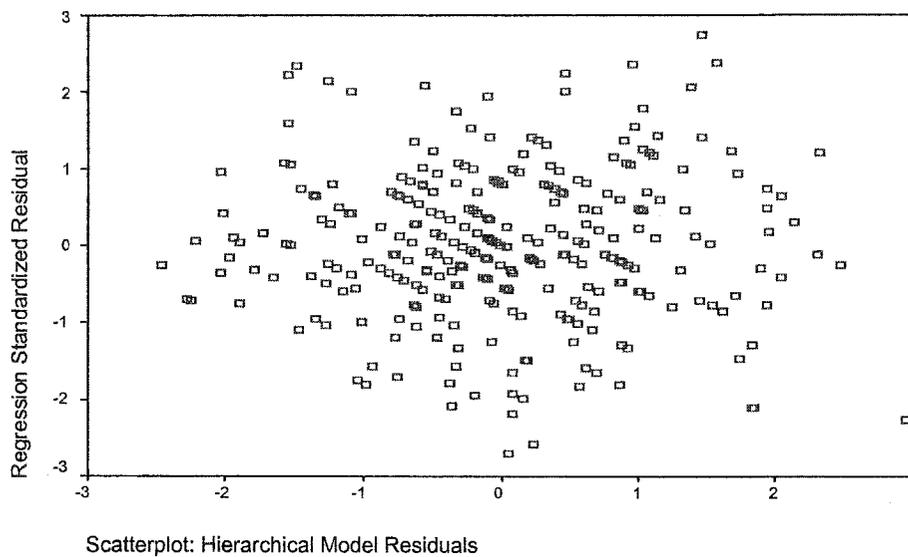


Figure 4. Regression Standardized Residual Plot for Stagewise Block Model Predicting Loneliness in Adults Aged 65 and Older ($n = 295$)

The histogram and P-P plots of normality should indicate that the residuals for the model are distributed normally. The histogram should show a roughly normal, bell-shaped curve and the P-P plot should show the residuals distributed as close to the straight diagonal line as possible (Field, 2000). The histogram and P-P plots for the current regression model indicated normality, although there was a very slight S-curve pattern around the line of the normal probability plot indicating slight deviations from a normal distribution (see Figure 5).

Partial probability plots show whether there is homoscedasticity between each of the residuals of each predictor variable and the outcome variable, as well as indicating cases that may be influential outliers and whether or not the relationship between variables is linear. The ideal pattern for each plot is a random array of data points around zero, the center point on the Y-axis.

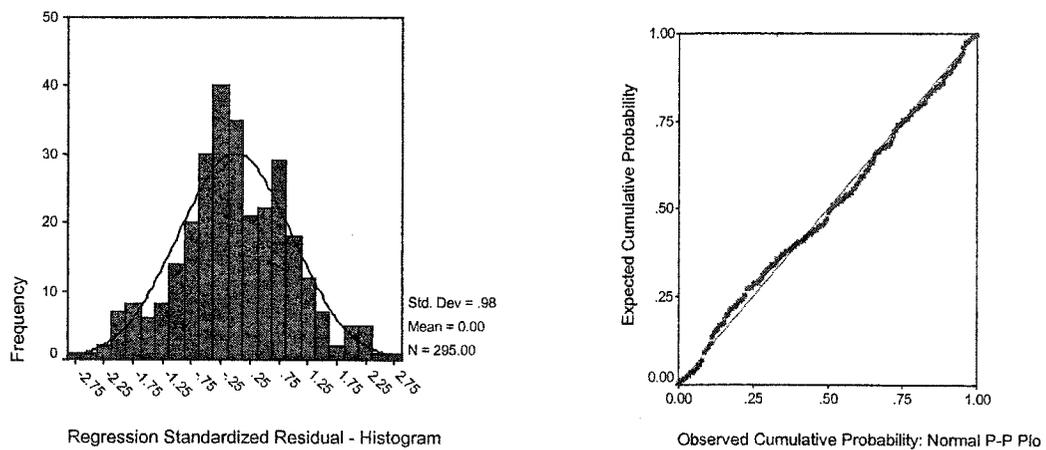


Figure 5. Histogram and Normal P-P Plot for Stagewise Block Regression Model Predicting Loneliness in Adults Age 65 and Older ($n = 295$).

For the current stagewise block regression model, all but two partial probability plots appeared normal, linear, and without obvious outliers. The two plots (see Figure 6) with possible non-random error variance were for interpersonal support received, which funneled

out at higher levels (indicating greater variance in loneliness for more interpersonal support received) and for tangible support received, which funneled out at lower levels (indicating greater variance in loneliness for less tangible support received). Recall that these two variables were created through the reconceptualization of the ISSB measure of enacted support. Acceptable Cronbach alpha scale reliability was established for each (.95 for interpersonal support received, .80 for tangible support received), and maximum likelihood factor analysis supported the a priori conceptual grouping of received support variables. However, the lower reliability coefficient for tangible support, along with the results of the partial probability plots, indicate that some caution must be used in interpreting results based on these two support measures.

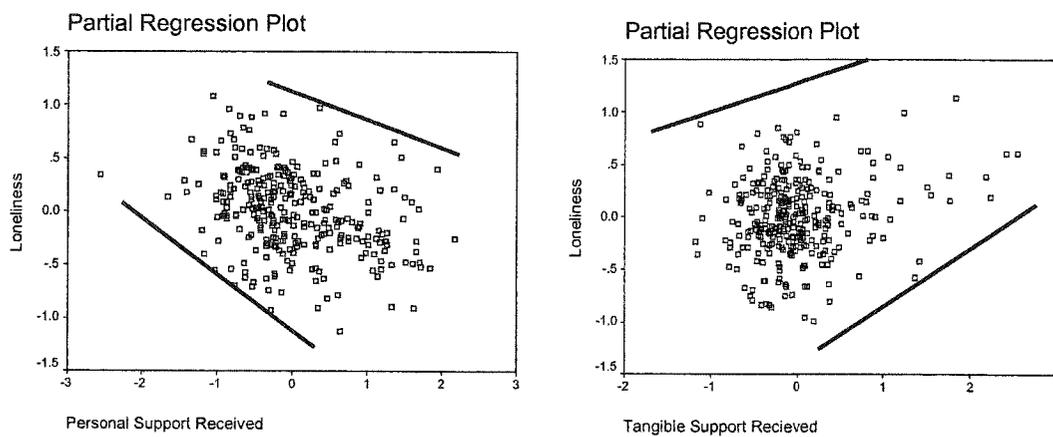


Figure 6. Partial Regression Plots Showing Heteroscedasticity for Regression Relationship of Tangible Received Support and Interpersonal Received Support in Predicting Loneliness in Adults Age 65 and Older ($n = 295$).

Confidence intervals for variables significant in Model 4 showed no indication that any of them would not contain the population parameter. All confidence intervals for significant variables indicated an acceptably narrow distance between the lower and upper

bound. None contained zero, which would indicate a change in sign and thus a wide interval unlikely to contain the population parameter.

Finally, interpreting the variance inflation factor and tolerance values for all variables in the model assessed collinearity. With the exception of living alone (VIF = 2.114, tolerance = .473), all VIF statistics were < 2 , and tolerance was well over .01, indicating that the possibility of making a Type Two error due to highly related predictor variables was unlikely (Field, 2000). As discussed above, the VIF for living alone was acceptable (< 10) and tolerance was $> .01$.

Correlation

Table 10 shows the correlation matrix for the complete model for predicting loneliness.

Pearson 2-tailed correlation analysis revealed that 8 of the 14 predictor variables had a significant bivariate relationship with the criterion variable of loneliness. Variables for which higher values significantly predicted lower loneliness were income, self-reported health status, secure attachment, received interpersonal support, and satisfaction with social support. Variables for which lower values predicted higher loneliness were the death of someone close in adult life and preoccupied attachment. The positive and negative relationships of the significant correlations supported prior research and met conceptual expectations for the directional relationships between these variables.

Table 10: Pearson Correlations : A Model Predicting Loneliness in Older Adults (N = 295)

| Model | | | | | | | | | | | | | | | |
|---------------|---------|---------|---------|---------|---------|--------|---------|--------|--------|--------|---------|--------|--------|--------|------|
| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Loneliness | 1.00 | | | | | | | | | | | | | | |
| Age | -.017 | 1.00 | | | | | | | | | | | | | |
| Sex | .068 | .117* | 1.00 | | | | | | | | | | | | |
| Income | -.162* | -.206** | -.280** | 1.00 | | | | | | | | | | | |
| Living Alone | .032 | .196** | .657** | -.358** | 1.00 | | | | | | | | | | |
| Death | .100* | .075 | .168** | .004 | .160** | 1.00 | | | | | | | | | |
| Health Status | -.232** | -.113* | -.007 | .338** | -.038 | -.016 | 1.00 | | | | | | | | |
| Secure | -.356** | -.008 | .102* | .140** | .098* | -.045 | .227** | 1.00 | | | | | | | |
| Dismissing | .058 | .045 | .056 | -.041 | .140** | -.024 | -.017 | -.050 | 1.00 | | | | | | |
| Preoccupied | .188** | .134* | -.081 | -.080 | -.019 | -.063 | -.120* | .096* | .142** | 1.00 | | | | | |
| Fearful | .261** | -.016 | -.093 | -.137** | -.046 | -.031 | -.219** | -.113* | .293** | .443** | 1.00 | | | | |
| Tangible | .000 | .149** | -.115** | -.038 | -.167** | -.119* | -.118* | .009 | -.062 | .148** | .097 | 1.00 | | | |
| Guidance | .004 | .077 | -.118* | .030 | -.068 | .021 | -.055 | .086 | -.111* | .125* | .170** | .483** | 1.00 | | |
| Interpersonal | -.347** | .090 | -.099* | -.009 | -.162** | -.011 | -.090 | .244** | -.118* | .030 | -.020 | .515** | .474** | 1.00 | |
| Satisfaction | -.500** | .093 | .060 | .116* | .078 | -.061 | .156** | .296** | -.016 | -.117* | -.223** | .183** | .090 | .296** | 1.00 |

Note: Listwise analysis

*p < .05, **

The correlation matrix revealed significant relationships between some predictor variables; however, none of the correlations were large enough to warrant concern about multicollinearity attenuating the model. The highest correlation (.657) was between living alone and sex, which would be expected in a sample of older adults.

Results of the Stagewise Block Model Hypothesis (Hypothesis 2)

Each block addition resulted in a significant R^2 change (see Table 9 above).

Hypothesis 1 was supported (after removing marital status as described above). Loneliness was predicted by a model containing age, sex, household income, living alone, the death of someone close, self-report health status, attachment, enacted support, and satisfaction with social support. All four ordered blocks showed a significant F change, with 48% of the variance in loneliness explained after entering all four ordered groups of variables. Table 11 presents the results of the regressions.

Table 11

Summary of Stagewise Block Regression Analysis for Variables Predicting Loneliness in Older Adults (n= 295)

| Variable | B | SE B | B | Part Corr |
|--------------------------------------|-------|------|---------|-----------|
| Block 1 – Exogenous Variables | | | | |
| Age | -.005 | .004 | -.066 | -.064 |
| Sex | .071 | .079 | .068 | .051 |
| Household income | -.030 | .018 | -.111 | -.096 |
| Living Alone | -.065 | .080 | -.064 | -.046 |
| Death of someone close | .187 | .108 | .101 | .098 |
| Self-Report health status | -.131 | .039 | -.202** | -.189 |

($R^2 = .079$; Adj $R^2 = .059$)

Table 11 (continued)

Block 2 – Attachment Variables added

| | | | | |
|---------------------------|-------|------|----------|-------|
| Age | -.01 | .004 | -.076 | -.072 |
| Sex | .135 | .073 | .129 | .096 |
| Household income | -.01 | .017 | -.037 | -.031 |
| Living Alone | -.023 | .074 | -.023 | -.016 |
| Death of someone close | .159 | .099 | .085 | .083 |
| Self-Report health status | -.064 | .037 | -.099 | -.089 |
| Secure | -.102 | .017 | -.338*** | -.318 |
| Dismissing | -.008 | .016 | -.026 | -.024 |
| Preoccupied | .049 | .017 | .173** | .150 |
| Fearful | .042 | .019 | .140* | .116 |

(R² = .235; Adj R² = .208)

Block 3 – Received Support Variables added

| | | | | |
|---------------------------|-------|------|----------|-------|
| Age | -.005 | .004 | -.063 | -.059 |
| Sex | .141 | .068 | .135* | .100 |
| Household income | -.019 | .015 | -.071 | -.060 |
| Living Alone | -.097 | .071 | -.096 | -.066 |
| Death of someone close | .202 | .093 | .108* | .104 |
| Self-Report health status | -.092 | .035 | -.142** | -.127 |
| Secure | -.068 | .016 | -.224*** | -.200 |
| Dismissing | -.007 | .015 | -.023 | -.021 |
| Preoccupied | .041 | .016 | .146** | .126 |
| Fearful | .031 | .018 | .105 | .086 |
| Tangible Support | .105 | .043 | .149* | .117 |
| Direct Guidance | .105 | .049 | .129* | .103 |
| Interpersonal Support | -.223 | .031 | -.444*** | -.340 |

(R² = .350; Adj. R² = .320)

Table 11 (continued)

Block 4 – Satisfaction with Received Support added

| | | | | |
|------------------------------------|-------|------|----------|-------|
| Age | -.003 | .004 | -.037 | -.035 |
| Sex | .137 | .064 | .131* | .096 |
| Household income | -.009 | .015 | -.033 | -.028 |
| Living Alone | -.046 | .066 | -.047 | -.031 |
| Death of someone close | .159 | .087 | .085 | .082 |
| Self-Report health status | -.074 | .032 | -.115* | -.103 |
| Secure | -.049 | .015 | -.162** | -.142 |
| Dismissing | -.001 | .014 | -.002 | -.002 |
| Preoccupied | .032 | .015 | .114* | .098 |
| Fearful | .018 | .017 | .059 | .047 |
| Tangible Support | .135 | .041 | .191** | .148 |
| Direct Guidance | .090 | .046 | .111* | .089 |
| Interpersonal Support | -.181 | .030 | -.362*** | -.271 |
| Satisfaction with Received Support | -.141 | .021 | -.337*** | -.295 |

($R^2 = .437$; Adj $R^2 = .409$)

Note. $R^2 = .079$ for block 1; R^2 change = .156 for block 2 ($p < .001$); R^2 change = .116 for block 3 ($p < .001$); R^2 change = .087 for block 4 ($p < .001$).

* $p < .05$

** $p < .01$

*** $p < .001$

The exogenous variables in block one accounted for 8% of the variance explained. Addition of the attachment variables in block two significantly increased the effect size to 24%, with attachment adding 16 percentage points of variance explained to the model. The enacted support measures added in block three resulted in an effect size of 35%, significantly increasing variance explained by 11 percentage points. The introduction of satisfaction with received support in block four added 9 percentage points of variance explained to the model, for a total of nearly 44% of variance explained ($R^2 = .437$, $F\{1, 280\} = 43.460$, $p < .001$).

Significant individual variables in the full model (block four in order of the magnitude of standardized coefficients, see Table 9) were interpersonal support received ($t = -6.047, p < .001$), satisfaction with received support ($t = -6.592, p < .001$), tangible support received ($t = 3.310, p < .01$), secure attachment ($t = -3.172, p < .01$), sex ($t = 2.150, p < .05$), self-reported health status ($t = -2.292, p < .05$), preoccupied attachment ($t = 2.197, p < .05$), and direct guidance received ($t = 1.997, p < .05$). All of the relationships of the significant variables in the model were in the expected direction, as reported in the literature, as well as suggesting areas for further inquiry (specifically, the positive relationships of tangible support and directive guidance with loneliness).

Significant variables showing a positive relationship with loneliness for this sample of older adults were tangible received support, sex (female), directive guidance, and preoccupied attachment. Significant variables showing a negative relationship with loneliness were interpersonal received support, satisfaction with enacted support, secure attachment, and higher self-reported health status.

Semi-partial correlations were squared to determine the unique variance each significant variable added to the prediction of loneliness. Results showed that satisfaction with social supported contributed the greatest unique variance (.087), followed by interpersonal support received (.073), tangible support received (.022), secure attachment (.020), self-reported health status (.010), preoccupied attachment and sex (both .009), and direct guidance (.007).

Results of the Attachment Directional Hypotheses (Hypotheses 3-6)

Research question three was “Will secure, dismissing, preoccupied, and fearful attachment relate to loneliness in theoretically expected directions, within a stagewise block regression model predicting loneliness?”

Hypotheses 3-6:

H₃: Secure attachment will be related to less loneliness for older adults.

H₄: Dismissing attachment will be related to less loneliness for older adults.

H₅: Preoccupied attachment will be related to greater loneliness for older adults.

H₆: Fearful attachment will be related to greater loneliness for older adults.

Hypotheses 3 and 5 were supported: Secure and preoccupied attachment were related significantly to loneliness. Older adults with a secure attachment style reported less loneliness and older adults with a preoccupied attachment style reported more loneliness. These findings were in the expected direction as reported in the literature. Dismissing attachment and fearful attachment were not individually significant in predicting loneliness. Overall, the attachment variables entered in block two of the stagewise block regression analysis had an effect size of 16 percentage points, significantly increasing R^2 from .079 to .235 ($R^2 = .235$, $F \{4, 284\} = 14.471$, $p < .001$).

Results of the Moderation Hypotheses (Hypotheses 7-10)

Research question 4 was, “Will attachment moderate the effects of enacted support on loneliness in later life?”

H₇: Attachment will moderate the relationship of received tangible support and loneliness in older adults.

H₈: Attachment will moderate the relationship of received directed guidance and loneliness in older adults.

H₉: Attachment will moderate the relationship of received interpersonal support and loneliness in older adults.

Research question 5 was, “Does attachment moderate the relationship of satisfaction with enacted support and loneliness for adults aged 65 and older?”

H₁₀: Attachment will moderate the relationship of satisfaction with received enacted social support and loneliness in older adults.

Hypothesis H₈ was supported. There was a significant change in effect size for the model with the addition of the interaction of attachment and directive guidance. Table 12 shows the result of block five of the stagewise block regression including the interaction of attachment and directive guidance.

Table 12

Summary of Stageswise Block Regression Analysis (Block 5 Only) for a Moderation Effect of Attachment on the Relationship of Received Directed Guidance and Loneliness in Older Adults (n = 295).

| Variable | B | SE B | B | Part Corr |
|--|-------|------|----------|-----------|
| Block 5 – Attachment/Directive Guidance | | | | |
| Interactions added | | | | |
| Age | -.003 | .004 | -.035 | -.032 |
| Sex | .154 | .063 | .148* | .108 |
| Household income | -.005 | .014 | -.019 | -.016 |
| Living Alone | -.054 | .066 | -.053 | -.036 |
| Death of someone close | .127 | .087 | .068 | .065 |
| Self-Report health status | -.072 | .032 | -.111* | -.099 |
| Secure | .035 | .041 | .115 | .038 |
| Dismissing | -.027 | .042 | -.091 | -.029 |
| Preoccupied | .132 | .046 | .466** | .125 |
| Fearful | .035 | .051 | .115 | .030 |
| Tangible Support | .132 | .041 | .187** | .144 |
| Direct Guidance | .482 | .181 | .590** | .117 |
| Interpersonal Support | -.171 | .030 | -.341*** | -.253 |
| Satisfaction with Received Support | -.145 | .021 | -.345*** | -.300 |
| Secure/Directive Guidance | -.052 | .024 | -.432* | -.095 |
| Dismissing/Directive Guidance | .016 | .025 | .121 | .028 |
| Preoccupied/Directive Guidance | -.063 | .028 | -.456* | -.099 |
| Fearful/Directive Guidance | -.011 | .029 | -.083 | -.017 |
| (R ² = .462, Adj R ² = .417) | | | | |

Note. R² change = .024 for block 5 ($p < .05$).

* $p < .05$, ** $p < .01$, *** $p < .001$

Hypothesis 8 was supported in part. Two attachment variables, secure and preoccupied, showed significant interaction with directive guidance in moderating the effects of enacted support and loneliness in this sample of older adults. The effect of the interaction additions on R^2 was small (2.4%). Hypotheses H₇, H₉, and H₁₀ were not supported. Attachment did not modify the effects of received tangible support, received interpersonal support, or satisfaction with received support.

To help clarify the main and interaction effects of the significant predictor variables conceptually, the model was re-analyzed, using the General Linear Model procedure in SPSS, after collapsing the significant attachment variables and directive guidance variable from ordinal into categorical variables, with a high-low split at the median. Results of the interaction terms using the collapsed variables in the model were not significant, neither for the secure/directive guidance interaction, nor for the preoccupied/directive guidance interaction.

CHAPTER V

DISCUSSION AND CONCLUSION

This study contributes to our understanding of some of the characteristics of elders that relate to feelings of loneliness in later life. Results showed that 44% of the variance explained for the outcome of loneliness in older adults was accounted for by a model containing exogenous demographic variables, attachment, enacted support, and satisfaction with social support. In addition, one attachment/enacted support (directive guidance) interaction contributed a small but significant increase in variance explained, to 46%. The findings of this study provide an important advance in understanding how individual characteristics and received social support influence affective outcomes in later life, as well as furthering our understanding of adult attachment in the context of aging.

The following discussion presents discussion of the findings, including implications and puzzles, as well as limitations of the study, suggestions for future research, and a concluding statement.

Attachment Style Patterns in Later Life

The study of adult attachment increasingly has included an interest in discovering the influence of attachment in the lives of older adults. The current research results did not replicate prior findings on older adult attachment, specifically that mean results for attachment styles in older adults distributed more often into the dismissing category of attachment than any other category (Magai et al., 2001; Webster, 1997; Wensauer &

Grossmann, 1995). Although significant differences were not found between secure and dismissing attachment, or between preoccupied and fearful attachment, there were significant differences between secure attachment and both preoccupied and fearful attachment, and between dismissing attachment and preoccupied and fearful attachment. Conceptually, based on the Griffin and Bartholomew model (1994, Appendix C), significance differentiated along the dimensions of a positive view of self in relationships (secure and dismissing attachment types), and a negative view of the self in relationships (preoccupied and fearful attachment types). The dimensions addressing positive and negative views of others in relationships did not differentiate significantly. These findings have intriguing implications for further study of self concept in relation to attachment in later life.

Suggestions for the age differences found in attachment distribution include the effects of accommodation to losses in later life (Webster, 1997), affective resignation with accompanying lower levels of well-being (Wensauer & Grossman, 1995), and small but significant effects of income, immigration, and racial prejudice (Magai et al., 2001). A possible reason that has not been explored is that of age/period/cohort differences between younger and older respondents taking part in current studies. Although attachment is conceptualized as a universal developmental construct (Bowlby, 1969) that affects lifelong individual assessments of self and others (Bartholomew, 1990; Bartholomew & Horowitz, 1991; Bowlby, 1969; Hazan & Shaver, 1987), there is little research as yet on environmental or lifespan influences on adult attachment nor on whether there may be age-related universal individual attachment style changes over a lifetime. These suggestions are preliminary at this point, and more studies must be conducted (using longitudinal, sequential designs) to explore further this intriguing age difference in attachment style distribution.

Predicting Loneliness in Later Life

Loneliness was predicted by a model including age, sex, living arrangement, bereavement, self-report health status, attachment, enacted support, and satisfaction with enacted support. Support was shown for prior research indicating that demographic factors of age (Fees, Martin, & Poon, 1999; Russell, 1996), sex (Rokach, 2000; Ryan & Patterson, 1987), marital status (Dykstra, 1995), income (Long & Martin, 2000), health status (Fees et al., 1999; Russell, 1996), living arrangement (de Jong Gierveld, 1987), and the recent death of someone close (Dykstra, 1995; Lopata, 1973) predicted loneliness. Prior findings that marital status, sex, and living arrangement could not be well separated in effect also were confirmed by the current research. Marital status was removed, to reduce the possibility of attenuating the effects of sex and living alone, two variables that contributed to the effect size for the model.

Attachment and Loneliness in Later Life

The current study did not sort individual respondents into discrete attachment style groups, but looked at mean differences of a measure of attachment in which individuals indicated their level of response to a descriptive definition of each attachment style. Therefore, the interpretation of results is limited to comparisons in outcome for the different attachment styles across the whole sample rather than on attachment characteristics for groups of respondents. Nevertheless, differences in attachment style were found in relation to loneliness and are discussed in the next section.

As suggested in the literature, the effects of attachment on affective outcomes are not based merely on whether an individual is securely attached or not, but on preferred types of interaction with others typical of each attachment style prototype (Bartholomew, 1990, 1993;

Bartholomew & Horowitz, 1991; Bradley & Cafferty, 2001; Kobak & Sceery, 1988; Sroufe & Waters, 1977). The hypotheses concerning the relationship of attachment style to loneliness were based on theoretical adult peer attachment prototypes as conceptualized by Bartholomew (Bartholomew, 1990, 1993; Bartholomew & Horowitz, 1991). In the current study, two attachment styles, secure and preoccupied, were significant in the final model predicting loneliness. Secure attachment was related to less loneliness and preoccupied attachment was related to greater loneliness. These results were in the expected theoretical direction, and were consistent with prior research on attachment and affective outcomes such as depression (Lanier, 1996) and psychological well-being, (Diehl et al., 1998). Secure attachment is typified by feeling comfortable with closeness and interaction with other people, yet also with being able to withstand autonomy. Interpretation of the relationship of attachment to loneliness in this study can be addressed best not only by describing the results of the stagewise block regression model but also by reporting the results of the bivariate correlational relationships between attachment and loneliness (see Table 10 in Chapter 3).

Bivariate Relationships of Secure Attachment and Loneliness

In bivariate correlation, interpersonal support and secure attachment were significantly and positively correlated, as were secure attachment and satisfaction with support. The standardized beta values for secure attachment in the stagewise block model indicated that secure attachment predicted less loneliness even though bivariate relationships for secure attachment and two types of enacted support (tangible assistance and directive guidance) were not significant. It may be that older adults with secure attachment feel less loneliness so long as interpersonal support and level of satisfaction with that support are

perceived as adequate and that more hands-on types of received support are less important. The interaction effects of secure attachment and directive guidance were significant, however, and suggestions for the meaning of this finding are discussed below in the section on how attachment moderated the effects of enacted support on loneliness.

Stagewise Block and Bivariate Relationships of Preoccupied Attachment and Loneliness

That preoccupied attachment was related to greater loneliness in this study was not surprising. In fact, the finding may lend support to the social support literature concerning how different dimensions of support (instrumental and emotional) relate to affective outcomes. Interpretation of the findings of the current study suggests that results for preoccupied attachment and loneliness be considered not only in the context of the stagewise block regression model, but in the bivariate relationship of preoccupied attachment with enacted support (see Table 10 in Chapter 3).

Preoccupied attachment is typified by an anxious need for proximity with attachment figures. Although the current research was not measuring attachment in the context of specific relationships, the global influence of attachment on relationships was implicit in the finding that preoccupied attachment was related to greater loneliness in the regression model despite having significant positive bivariate relationships with tangible assistance and directive guidance. Older adults with a preoccupied attachment style who received enacted support from others nevertheless reported feeling lonely. A preoccupied attachment style in later life may result in feelings of loneliness despite the amount of instrumental, hands-on support received. The significant, negative bivariate correlation of preoccupied attachment and satisfaction with enacted support lends credence to this suggestion. Older adults with

preoccupied attachment were not satisfied with the enacted support they received from others. In addition, the relationship between preoccupied attachment and the enacted support dimension of interpersonal support was not significant. Do older adults with preoccupied attachment simply not receive interpersonal support from others, or do they not recognize it as such when others intend to provide interpersonal support?

It is not common to conjecture about non-significant statistical relationships in research; however, the results of the stagewise block regression model relationship of preoccupied attachment to loneliness and the bivariate correlations between model variables both point to the need for new areas of investigation. The lack of significance between preoccupied attachment and interpersonal support coupled with the significant positive relationship between preoccupied attachment and the hands-on types of enacted support (tangible and directive guidance) as well as the significant negative relationship between preoccupied attachment and satisfaction with support, all have implications that may substantiate the conceptualization that adults with a preoccupied attachment style may have proximity and contact with others yet still feel lonely because they do not perceive that contact as satisfactory. Although this suggestion supports prior views that perceived support would be predictive of affective outcomes (Mallinckrodt, 1991; Pierce, Sarason, & Sarason, 1992; Sarason, Pierce, Shearin, Sarason, Waltz, & Poppe, 1991), the differential satisfaction results for secure and preoccupied attachment in the current study have implications that attachment may influence perception despite type of support received. This conjecture is quite sweeping in the context of the current study, of course, and must be researched with greater complexity.

Non-significance of Dismissing and Fearful Attachment

Dismissing attachment and fearful attachment, while contributing to the overall variance explained in the model, were not individually significant as predictors of loneliness. The lack of significance for dismissing attachment in predicting loneliness is especially intriguing. Recent research found that older adults were more likely to measure higher on dismissing attachment than on the other attachment styles (Magai et al., 2001; Webster, 1997; Wensauer & Grossmann, 1995). The current study made a similar finding, in the sense that the mean of secure attachment was not greater than the mean of dismissing attachment. When comparing attachment means across all respondents in the current study, the means and standard deviations of secure and dismissing attachment were virtually identical. Yet, secure attachment had a significant relationship with loneliness while dismissing attachment did not. This finding is puzzling unless the effects of the different attachment styles on affect regulation are taken into account. Based on the attachment prototypes, dismissing attachment could be hypothesized to have a significant negative relationship with loneliness because of a desire for less closeness with others than is shown in any of the other three attachment styles. However, consider that, theoretically, the function of dismissing attachment is to regulate affect by holding a positive model of self and negative model of others with little expectation of or desire for emotional closeness (Bartholomew, 1990, 1993; Bartholomew & Horowitz, 1991).

How is the concept of "loneliness" (either social or emotional) interpreted by individuals who have no expectations of or desire for closeness? Do older adults who measure high on dismissing attachment perceive loneliness in different ways than those with other attachment types and are these perceptions measurable on an instrument designed to

determine high or low levels of loneliness based on social or emotional interactions with other people? The current study cannot answer this question, but further research on this topic is certainly warranted.

Enacted Support and Loneliness in Later Life

Enacted support was found to be related to loneliness in prior research (Rook, 1984a; Russell et al., 1987). For the current study, the standardized ISSB (which had not been used in self-report survey format with older adults in prior research) did not factor as expected. It may be that the interpretation of questions asking about help received from others has age or cohort differences in meaning. Independence is highly prized in American culture, and today's older adults may attribute needing or accepting enacted support as a weakness or lack of independence. For example, in the current study, all variables concerning being given or lent money had severe floor effects, meaning that nearly all of the sample responded that they had not been the recipients of this kind of support in the past month. These variables were removed from the analysis and not included in the factor analytic reconfiguration of the ISSB measure, which then conceptually and statistically sorted into three new indexes, all of which had acceptable internal consistency reliability, although the index that would have contained the money items (tangible support) was more marginally acceptable (Cronbach alpha = .8155). The new indexes reflected enacted support in the dimensions of tangible assistance other than receiving money (but including actions taken on behalf of respondents), directive guidance (advice and information), and interpersonal support (emotional support, respect, and affection). These three reconfigured indexes contributed a significant 11% to the regression model predicting loneliness.

It is interesting to note that each index of enacted support individually was significantly related to loneliness and in ways that lent credence to the idea that today's older adults may feel uncomfortable receiving help other than emotional support. Tangible and directive guidance were significantly and positively related to loneliness, showing that elders who reported receiving these kinds of support more frequently also reported feeling greater loneliness. On the other hand, interpersonal support was significantly and negatively related to loneliness, a finding that might be interpreted as supporting prior conceptualizations of emotional support and instrumental support as different dimensions of support, as reported in much of the social support literature (e.g., Cutrona & Russell, 1987; Weiss, 1974), and that these dimensions differentially relate to affective outcomes. In addition, directive guidance was the only enacted support variable that interacted significantly with attachment as a moderating factor on the outcome of loneliness. The interaction effect implications are discussed in a section to follow.

The Relationship of Satisfaction with Enacted Support and Loneliness

Satisfaction with enacted support added a significant 8 percentage points of variance explained to the stagewise block regression model, showing a negative relationship between loneliness and satisfaction with support. As expected, greater satisfaction with support received was related to less loneliness.

In the current study, an older sample indicated overall low utilization of enacted support; yet all three dimensions of that support (tangible, directive guidance, and interpersonal support) were significantly related to loneliness in later life. Does attachment influence the effect of enacted support on loneliness? Does attachment influence the effect of

satisfaction on received support on loneliness? These questions were tested by exploring whether attachment would moderate the effects of enacted social support in predicting loneliness in later life and whether attachment would moderate the effects of satisfaction on enacted social support in later life. A discussion of the results of these questions can be found in the next section.

Attachment Moderation of Effects of Enacted Support on Loneliness

Two attachment styles (secure and preoccupied) modified the effects of one index of received enacted support (directed guidance) on loneliness. There were no moderating effects of attachment for the relationship of enacted received tangible support or enacted received interpersonal support on loneliness in later life and attachment did not moderate the effects of satisfaction with enacted social support on loneliness.

A meaningful interpretation of the significant interaction effects for this study is limited, in part, because the value of R^2 change to the model after the addition of the interaction terms was so small (2.4%) that the interaction effects may be trivial (Jaccard, Turrisi, & Wan, 1990). In addition, further analysis to determine a conceptual meaning of interaction effects (through collapsing ordinal variables into nominal variables to interpret graphs showing ordinal or disordinal interaction, for example) resulted in a non-significant interaction effect contribution to the model. This result may have been due to the loss of information that can occur when continuous variables are dichotomized (Cohen & Cohen, 1983). Alternate measurement methods should be used in the future to determine if attachment moderates the effects of received support in the outcome of loneliness.

The reason that further study should be conducted on the interaction of attachment and received support is that the moderating effects found in this study for attachment on directed guidance have several interesting implications. The following sections present a discussion of these implications.

Secure Attachment Directive Guidance Interaction

Before the interaction of secure/directive guidance was added to the stagewise block regression model, secure attachment had a significant negative relationship with loneliness, that is, older adults who measured high on secure attachment measured low on loneliness. Implications of the secure attachment/directive guidance moderating relationship with loneliness were that older adults who reported receiving greater directive guidance had greater loneliness unless they also scored high on secure attachment, in which case they had less loneliness. Secure attachment moderated the influence of enacted support on loneliness for the directive guidance type of support. Older adults scoring high on secure attachment and on received directive guidance reported lower loneliness, while greater loneliness was found for respondents not scoring high on secure attachment but reporting having received directive guidance.

Interpreting these findings in the context of theoretical conceptualizations of attachment influence, older adults with secure attachment will feel more comfortable taking advice and other types of directive guidance from others because people with secure attachment do not feel threatened or diminished by interdependence.

Preoccupied Attachment and Directive Guidance Interaction

Results of including the interaction in the model were that older adults scoring high on preoccupied attachment and high on received directive guidance reported lower loneliness, while greater loneliness was found for respondents not scoring high on preoccupied attachment but reporting having received directive guidance. Implications are that preoccupied attachment moderates the relationship of the directive guidance type of enacted support on loneliness for older adults. Older adults who reported receiving high directive guidance reported more loneliness unless they also scored high on preoccupied attachment, in which case they reported less loneliness.

Interpreting these findings in the context of theoretical conceptualizations of attachment influence, older adults with high preoccupied attachment will feel lonelier if they do not have a great deal of contact and proximity with attachment figures. The advice and attention given to respondents as embodied in the directive guidance measure might reduce feelings of loneliness because individuals with preoccupied attachment characteristics desire proximity and contact in any context.

Moderation Implications for an Underlying Two-Dimensional Attachment Model

One implication of the moderating effects of attachment on the influence of directive guidance on loneliness is that secure older adults who receive directive guidance may be less lonely because they do not have a negative view of themselves about needing advice or directive support from others and thus are less likely impose social or emotional isolation on themselves. Although this research did not directly measure the two-dimensional aspects of self and other regarding attachment, these findings suggest that older adults with a secure

attachment style who receive directive guidance maintain positive views of self and others (e.g., those giving support to study respondents), which influenced feelings of less loneliness. On the other hand, older adults with a preoccupied attachment style who received directive support maintained a negative view of self but also a positive view of others (perhaps as being wiser than the self regarding advice and direction), which influenced feelings of less loneliness due to the attention and proximity of the persons providing the directive guidance.

Limitations of the Study

Limitations of this study included issues of measurement, data collection procedures, and interpretability of results. The first limitation was that a pilot study was conducted to determine whether the mail survey method of using the research measures would be appropriate for older adults. Resource restriction for conducting a pilot with a representative sample of elders similar to the sampling frame (that is, elders living independently in the community) was the reason for lack of a preliminary test of the survey; however, the necessity of altering the factor structure of one measure after data collection (the ISSB) and not using another at all (the RSQ) points out the advisability of conducting a pilot test, especially when a self-report survey will be used containing some measures that are more frequently administrated as semi-structured interviews and/or those that have not been established as reliable for use with older adults.

The second limitation was that respondents could not be sorted into discrete attachment categories due to some survey respondents choosing the same highest level (on the 1-7 scale) for more than one attachment style. Although the attachment measure used in the analysis (the Relationship Questionnaire) is comprised of scales that can be used to determine mean levels of attachment across samples, it would have been useful to determine

if, for example, more older adults measured into the dismissing category than into the secure category, as found in earlier studies. Sorting individual respondents into discrete attachment categories may have facilitated this replication.

A third limitation had to do with interpretability of results due to measurement issues. First, there were floor and ceiling effects for several measures. Satisfaction with enacted support showed positive kurtosis, as nearly all of the sample indicated high satisfaction with support. An opposite problem was that all of the variables that involved being lent or given money (contained in the tangible support measure of the ISSB) showed floor effects with nearly all of the sample responding “never” to all questions about receiving money. The latter problem was resolved by removing the money variables from the measure after data collection.

The re-structuring of the ISSB due to the inability to interpret the standard factors with confirmatory factor analysis is a fourth limitation in the current study. Although the creation of new indexes is not necessarily a limitation and may be entirely appropriate for use with older adults, the new indexes developed for this research have yet to be reliably replicated in other studies with older adults. In addition, one of the indexes (tangible support) showed an acceptable but lower than optimal internal consistency reliability. Finally, the residual plots for two of the created indexes (tangible support and interpersonal support) showed evidence of heteroscedasticity. Therefore, all results of this study involving the enacted support measure indexes must be interpreted with caution.

Suggestions for Future Research

First, the applicability of self-report surveys for administration of the RSQ attachment measure and the ISSB enacted support measure for older adults should be determined. It may

be that a semi-structured interview using these instruments would provide more variation in results for some of the items. Second, attempts at confirmatory factor analysis in LISREL revealed that similarly worded items generally showed a tendency to group together in factoring for both the ISSB and the RSQ. Examination of question wording should be undertaken to determine if there are age/cohort differences in the ways older adults interpret terms such as “anxious,” “worry,” “depend,” “independent,” and others. It is possible that question wording appropriate for the reliability of measures used with younger adults is interpreted quite differently for today’s older adults.

Additional study of attachment in older samples should be conducted in such a way that respondents can be sorted into discrete categories of attachment. Since the time these data were collected in 2001, one of the developers of the Relationship Questionnaire (RQ) has suggested that duplicate numeric responses may be resolved by tossing a coin and letting probability determine which attachment category will retain the duplicate number, or, for more than one duplication among the four attachment variables, cases should be removed from the data set (Bartholomew, 2002). This solution was not optimal for the current research, as it would have reduced the sample size substantially. Future research still may measure attachment across samples but appropriate sample sizes should be obtained and procedural methods used such that the RQ may be used to obtain individual attachment type results as well.

The inclusion of moderation analysis should again be undertaken in further research, using methods that will clearly allow for conceptual interpretation of the main and interaction effects. Measurement issues must also be addressed, including determining whether continuous or categorical variables will provide the most viable methods for interpretation. In

the current study the plan to conduct structural modeling was ultimately untenable, therefore precluding the opportunity to analyze moderation effects by that method.

Another area for future research involves a reconceptualization of the time order of relationships between the variables used in this study. The interpretation of interaction results here was based on the theoretical assumption that attachment is antecedent to behavior and affect (e.g., Bowlby, 1969). An alternative explanation for the relationship of attachment, social support and loneliness in later life, is that receiving enacted support mediates the influence of attachment on loneliness in later life. Recently, attachment researchers were exploring whether adult attachment style may be altered, and, if so, under what conditions (Fogel, 1993). To date there has been little research on change in adult attachment style and existing study results were not conclusive concerning change (Davila, Karney, & Bradbury, 1999; Kirkpatrick & Hazen, 1994), although some evidence of change may be attributable to measurement error (Feeney, 1999). None of these studies were conducted to measure change in older adults. A study of the mediation effects of enacted social support could be useful in exploring adult attachment in the context of environment, experience, and change in relationship to affective outcomes.

This research provided a preliminary exploration of the relationship between loneliness in later life and characteristics of older individuals using enacted social support and attachment measurement instruments standardized primarily with young or middle aged adults. A final suggestion for future research is to replicate the current study using measures and methods that are found reliable and valid for use with older adults. For example, a structured or semi-structured in-person interview may be more appropriate with older individuals. Once appropriate measurement models have been established, a statistical

method such as structural equation modeling should be used to utilize properly a multi-method approach to studying the influence of attachment and enacted received social support on loneliness in later life.

Conclusion

This study has addressed gaps in the literature on aging concerning the relationship of loneliness, attachment, and social support by (a) replicating earlier studies by including demographic characteristics predictive of loneliness in prior research, (b) including adult attachment in a model predicting loneliness in older adults, (c) comparing the distribution of four adult attachment styles in a sample of older adults with the results of prior research conducted with young and middle-aged adults, (d) including measures of enacted support in a model predicting loneliness in older adults, and (e) discovering whether attachment was a factor in moderating the effects of enacted support on loneliness in later life.

The purpose of this study was to examine the relationships of attachment, social support, and loneliness in later life. Two stagewise block regression models (the second model including significant interactions of attachment and social support) with block entry of variables predetermined by the researcher resulted in explaining 46% of the variation in loneliness for a sample of community-dwelling adults aged 65 and older. Variables found predictive in prior research contributed significantly here too to the prediction of loneliness as did attachment, enacted support, and satisfaction with enacted support. In addition, the mean distribution pattern of attachment approximated the results of earlier studies of attachment and older adults; two attachment styles were related to loneliness in theoretically expected directions, and two attachment styles moderated the relationship of one type of enacted support for the outcome of loneliness.

Results from this study will be useful in planning further research on attachment, social support, and loneliness in later life, as well as helping older adults, researchers, and service providers in the field of aging better understand and address the issues of aging in developmental and social contexts.

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APPENDIX A

Connections

Family and Friends in Later Life



A survey conducted at Iowa State University

Note on the survey format: The survey sent to respondents was formatted 14 font, on 8 ½ x 11 paper. This copy for the dissertation document has

Listed below are questions about your social and personal relationships. Please think about your experiences with the people in your adult life.

Q1. The following statements describe how people sometimes feel. For each statement, please indicate how often you currently feel the way described, by circling one number for each item below:

| | Never | Rarely | Sometimes | Always |
|---|-------|--------|-----------|--------|
| 1. How often do you feel you lack companionship? | 1 | 2 | 3 | 4 |
| 2. How often do you feel a lot in common with the people around you? | 1 | 2 | 3 | 4 |
| 3. How often do you feel close to people? | 1 | 2 | 3 | 4 |
| 4. How often do you feel left out? | 1 | 2 | 3 | 4 |
| 5. How often do you feel that no one really knows you well? | 1 | 2 | 3 | 4 |
| 6. How often do you feel isolated from others? | 1 | 2 | 3 | 4 |
| 7. How often do you feel there are people who really understand you? | 1 | 2 | 3 | 4 |
| 8. How often do you feel that people are around you but not with you? | 1 | 2 | 3 | 4 |
| 9. How often do you feel that there are people you can talk to? | 1 | 2 | 3 | 4 |
| 10. How often do you feel that there are people you can turn to? | 1 | 2 | 3 | 4 |

Q2. How would you rate your overall health at the present time? (Please circle one number from the list below):

- 1. Excellent
- 2. Good
- 3. Fair
- 4. Poor

Q3. Thinking about your life in general, are you very unhappy, unhappy, neither happy nor unhappy, happy, or very happy. Please circle one number on the scale below:

| | | | | |
|--------------|---------|---------------------------|-------|------------|
| Very Unhappy | Unhappy | Neither Happy nor Unhappy | Happy | Very Happy |
| 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | | | |

Page Two

Q4. Now think about some different kinds of assistance and support you may have received from other people within the last month. Please circle one number for each of the following items.

| During the <i>past month</i> please tell me how often anyone: | Not at All | Once or Twice a month | About Once a Week | Several Times a Week | About Every Day |
|---|------------|-----------------------|-------------------|----------------------|-----------------|
| 1. Gave you some information on how to do something..... | 1 | 2 | 3 | 4 | 5 |
| 2. Helped you understand why you didn't do something well..... | 1 | 2 | 3 | 4 | 5 |
| 3. Suggested some action that you should take..... | 1 | 2 | 3 | 4 | 5 |
| 4. Gave you feedback on how you were doing without saying it was good or bad..... | 1 | 2 | 3 | 4 | 5 |
| 5. Made it clear what was expected of you..... | 1 | 2 | 3 | 4 | 5 |
| 6. Gave you information to help you understand a situation you were in..... | 1 | 2 | 3 | 4 | 5 |
| 7. Checked back with you to see if you followed the advice you were given..... | 1 | 2 | 3 | 4 | 5 |
| 8. Taught you how to do something..... | 1 | 2 | 3 | 4 | 5 |
| 9. Told you whom you should see for assistance..... | 1 | 2 | 3 | 4 | 5 |
| 10. Told you what to expect in a situation that was about to happen..... | 1 | 2 | 3 | 4 | 5 |
| 11. Said things that made your situation clearer and easier to understand..... | 1 | 2 | 3 | 4 | 5 |
| 12. Assisted you in setting a goal for yourself..... | 1 | 2 | 3 | 4 | 5 |
| 13. Told you what he/she did in a situation that was similar to yours..... | 1 | 2 | 3 | 4 | 5 |
| 14. Told you how he/she felt in a situation that was similar to yours..... | 1 | 2 | 3 | 4 | 5 |
| 15. Told you that he/she feels very close to you..... | 1 | 2 | 3 | 4 | 5 |
| 16. Let you know that he/she will always be around if you need assistance..... | 1 | 2 | 3 | 4 | 5 |
| 17. Expressed interest and concern for your well being..... | 1 | 2 | 3 | 4 | 5 |
| 18. Comforted you by showing some physical affection..... | 1 | 2 | 3 | 4 | 5 |

Please continue with Q4 from page two...

| During the <i>past month</i> please tell me how often anyone: | Not at All | Once or Twice a month | About Once a Week | Several Times a Week | About Every Day |
|--|------------|-----------------------|-------------------|----------------------|-----------------|
| 19. Told you that you are OK just the way you are | 1 | 2 | 3 | 4 | 5 |
| 20. Told you that he/she would keep the things you talked about private. | 1 | 2 | 3 | 4 | 5 |
| 21. Expressed esteem or respect for a competency or personal quality of yours. | 1 | 2 | 3 | 4 | 5 |
| 22. Was right there with you (physically) in a stressful situation. | 1 | 2 | 3 | 4 | 5 |
| 23. Listened to you talk about your private feelings. | 1 | 2 | 3 | 4 | 5 |
| 24. Let you know that you did something well. | 1 | 2 | 3 | 4 | 5 |
| 25. Participated in some activity with you to help you get your mind off things. | 1 | 2 | 3 | 4 | 5 |
| 26. Talked with you about some interests of yours. | 1 | 2 | 3 | 4 | 5 |
| 27. Joked and kidded to try and cheer you up. | 1 | 2 | 3 | 4 | 5 |
| 28. Gave you over \$25.00. | 1 | 2 | 3 | 4 | 5 |
| 29. Gave you under \$25.00. | 1 | 2 | 3 | 4 | 5 |
| 30. Loaned you over \$25.00. | 1 | 2 | 3 | 4 | 5 |
| 31. Loaned you under \$25.00. | 1 | 2 | 3 | 4 | 5 |
| 32. Provided you with a place to stay. | 1 | 2 | 3 | 4 | 5 |
| 33. Pitched in to help you do something that needed to get done. | 1 | 2 | 3 | 4 | 5 |
| 34. Loaned you or gave you something (other than money) that you needed. | 1 | 2 | 3 | 4 | 5 |
| 35. Provided you with transportation. | 1 | 2 | 3 | 4 | 5 |
| 36. Went with you to someone who could take action. | 1 | 2 | 3 | 4 | 5 |
| 37. Provided you with a place to get away for awhile. | 1 | 2 | 3 | 4 | 5 |
| 38. Looked after a family member while you were away. | 1 | 2 | 3 | 4 | 5 |
| 39. Watched after your possessions when you were away. | 1 | 2 | 3 | 4 | 5 |
| 40. Agreed that what you wanted to do was right. | 1 | 2 | 3 | 4 | 5 |

Page Four

Q5. For each item below, please circle one number on the scale from 1 (Not at all like me) to 5 (Very much like me) for each of the following questions about yourself:

| | Not at all Like Me | | | | Very Much Like Me |
|---|-----------------------|---|---|---|----------------------|
| 1. I find it difficult to depend on other people..... | 1 | 2 | 3 | 4 | 5 |
| 2. It is very important for me to feel independent..... | 1 | 2 | 3 | 4 | 5 |
| 3. I find it easy to get emotionally close to others..... | 1 | 2 | 3 | 4 | 5 |
| 4. I worry that I will be hurt if I allow myself to become too close to others..... | 1 | 2 | 3 | 4 | 5 |
| 5. I am comfortable without close emotional relationships..... | 1 | 2 | 3 | 4 | 5 |
| 6. I want to be completely emotionally intimate with others..... | 1 | 2 | 3 | 4 | 5 |
| 7. I worry about being alone..... | 1 | 2 | 3 | 4 | 5 |
| 8. I am comfortable depending on other people..... | 1 | 2 | 3 | 4 | 5 |
| 9. I find it difficult to trust others completely..... | 1 | 2 | 3 | 4 | 5 |
| 10. I am comfortable having other people depend on me..... | 1 | 2 | 3 | 4 | 5 |
| 11. I worry that others don't value me as much as I value them..... | 1 | 2 | 3 | 4 | 5 |
| 12. It is very important to me to feel self-sufficient..... | 1 | 2 | 3 | 4 | 5 |
| 13. I prefer not to have other people depend on me..... | 1 | 2 | 3 | 4 | 5 |
| 14. I am uncomfortable being close to others..... | 1 | 2 | 3 | 4 | 5 |
| 15. I find that others are reluctant to get as close to me as I would like..... | 1 | 2 | 3 | 4 | 5 |
| 16. I prefer not to depend on others..... | 1 | 2 | 3 | 4 | 5 |
| 17. I worry about having others not accept me..... | 1 | 2 | 3 | 4 | 5 |

Q6. In general, how satisfied are you with the assistance and support you receive from other people?
 (Please circle one number that best describes your level of satisfaction)

| | | | | |
|----------------------|--------------|---------------------------------------|-----------|-------------------|
| Very Dissatisfied | Dissatisfied | Neither Satisfied nor Dissatisfied | Satisfied | Very Satisfied |
| 1 | 2 | 3 | 4 | 5 |
| 6 | | | | 7 |

Q7. The following four paragraphs describe ways people sometimes feel about themselves and others.
 Please show how much *each* of the descriptions below is like you or not like you, by
 circling one number on the scale from 1 ("least like me") to 7 ("most like me") for *each* paragraph:

Paragraph 1: It is relatively easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me.

| | | |
|---------------|------------------|--------------|
| Least Like Me | Somewhat Like Me | Most Like Me |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | | |

Paragraph 2: I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

| | | |
|---------------|------------------|--------------|
| Least Like Me | Somewhat Like Me | Most Like Me |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | | |

Paragraph 3: I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

| | | |
|---------------|------------------|--------------|
| Least Like Me | Somewhat Like Me | Most Like Me |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | | |

Paragraph 4: I am somewhat uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I sometimes worry that I will be hurt if I allow myself to become too close to others.

| | | |
|---------------|------------------|--------------|
| Least Like Me | Somewhat Like Me | Most Like Me |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | | |

Page Six

Please tell me a little about yourself:

Q8. What is your current marital status? (Please circle one number from the list below):

1. Currently married
2. Currently separated or divorced
3. Currently widowed/widower
4. Never married
5. Other (please write in) _____

Q9a. What is your race/ethnicity? (Please circle all that apply)

1. African American/Black
2. Asian/Pacific Islander
3. Caucasian/White
4. Native American Indian/Alaskan Native
5. Other, including multiracial (please write in) _____

Q9b. Are you Spanish/Hispanic/Latino? (please check one) ____ Yes ____ No

Q10. What are your current living arrangements? (Please circle all numbers that apply)

1. alone
2. with spouse or partner
3. with parent
4. with child
5. with brother or sister
6. with other (please write in) _____

Q11. Please write in the year you were born: _____

Q12. Are you male or female? ____ Male ____ Female

Q13. What is your current occupational status? (Please circle all numbers that apply):

1. Working full time for an employer or self employed
2. Working part time for an employer or self employed
3. Working at home (homemaker)
4. Retired
5. Unemployed
6. Other (please write in) _____

Q14. What was your household income, before taxes, for the year 2000? (Please check one space):

- ____ less than \$14,999
 ____ \$15,000 - 29,999
 ____ \$30,000 - 44,999
 ____ \$45,000 - 59,999
 ____ \$60,000 - 74,999
 ____ \$75,000 - 99,999
 ____ greater than \$100,000

Q15. In your adult life, have you experienced the death of any person whom you considered very close to you?

(please check one) ____ Yes ____ No

└───┬───>

If Q15 is YES, please write the year in which the most recent death occurred _____

Some adults experience providing care for another adult who is ill or otherwise unable to care for him or herself. In the following section I'd like to ask you some questions about whether you have been such a caregiver for someone to whom you feel or felt close, and if so, how you perceive your most recent caregiving experience.

Q16. A primary caregiver may be defined as the person most responsible for taking care of the day-to-day needs of another adult who is ill or otherwise unable to care for him or herself. Please circle one number from the list below and indicate the most recent time you have spent as a primary caregiver for another adult to whom you feel or felt close:

1. Never
 2. I am currently a primary caregiver and began caregiving for this person in (year) _____
 3. I was a primary caregiver at one time but not now. I most recently gave care for (number of months) _____
- ↳ If you circled #3, why did your most recent function as a caregiver end? (Please write below)

***If you circled "currently" or "at one time" to Question 16, please continue with question 17.
If you circled 1 (Never) to question 16, please turn to the back cover to complete the survey.***

The remainder of the questionnaire asks about your most recent caregiving experience, whether you are currently providing care or have done so in the past. Please think about your most recent caregiving experience when answering the rest of the questions.

Q17. If you answered "currently" or "at one time" to being a caregiver for an adult who is close to you, please identify the person for whom you currently or most recently served as a primary caregiver:

1. Spouse or romantic partner
2. One or more of your children
3. Parent
4. In-law
5. Sister or brother
6. Friend
7. Other (please specify) _____

Q18. Does or did this person have Alzheimer's disease or some other form of dementia?
 ___Yes ___No

Q19. Does or did this person have a chronic long-term illness (more than six months long) that was not Alzheimer's disease or some other dementia?
 ___Yes ___No

Q20. Where does or did your most recent caregiving take place: (please circle all that apply)

1. In my home
2. In his or her home
3. In a long term care facility of some sort
4. Other (please write in) _____

Page eight

Q21. Listed below are some thoughts that people sometimes have about caregiving. Thinking about your own current or most recent caregiving experience, which of these perceptions about providing care apply to you? (Please circle a number for all that apply)

1. Happy to be able to help.
2. Upset at the disruption of my usual routines and/or way of life.
3. Confident in my abilities to provide the care that is needed.
4. Caregiving made the relationship closer between myself and the person receiving my care.
5. Unsure about whether or not I always make the right decisions about care.
6. Caregiving put a strain on the relationship between myself and the person receiving my care.
7. Caregiving changed the relationship between myself and the person receiving my care.
8. Fear for my future.
9. A sense of accomplishment at fulfilling a need for someone who needs me.
10. A sense of obligation to provide care.

Q22. The following items are specific examples of feelings people sometimes express about experiences they have had while giving care for someone close. For each statement listed below, please circle one number on the scale.

How much do you or did you feel each of the following about your current or most recent caregiving experience?

| Not at all | A Little | Some | A Lot | Extremely |
|------------|----------|------|-------|-----------|
|------------|----------|------|-------|-----------|

I feel or felt:

| | | | | | |
|---|---|---|---|---|---|
| 1. Resentful of other relatives who could, but don't or didn't do enough for the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 2. Requests by the person in my care are or were over and above his or her needs..... | 1 | 2 | 3 | 4 | 5 |
| 3. Not enough time for myself because of my involvement with the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 4. Stressed at trying to balance time spent giving care and time spent with other responsibilities..... | 1 | 2 | 3 | 4 | 5 |
| 5. Embarrassed about the behavior of the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 6. Guilty about my interactions with the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 7. That I don't or didn't do as much as I could for the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 8. Angry about my interactions with the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 9. Nervous or depressed about my interactions with the person in my care..... | 1 | 2 | 3 | 4 | 5 |

Please continue this question on the next page ...

How much do you or did you feel each of the following about your current or most recent caregiving experience?

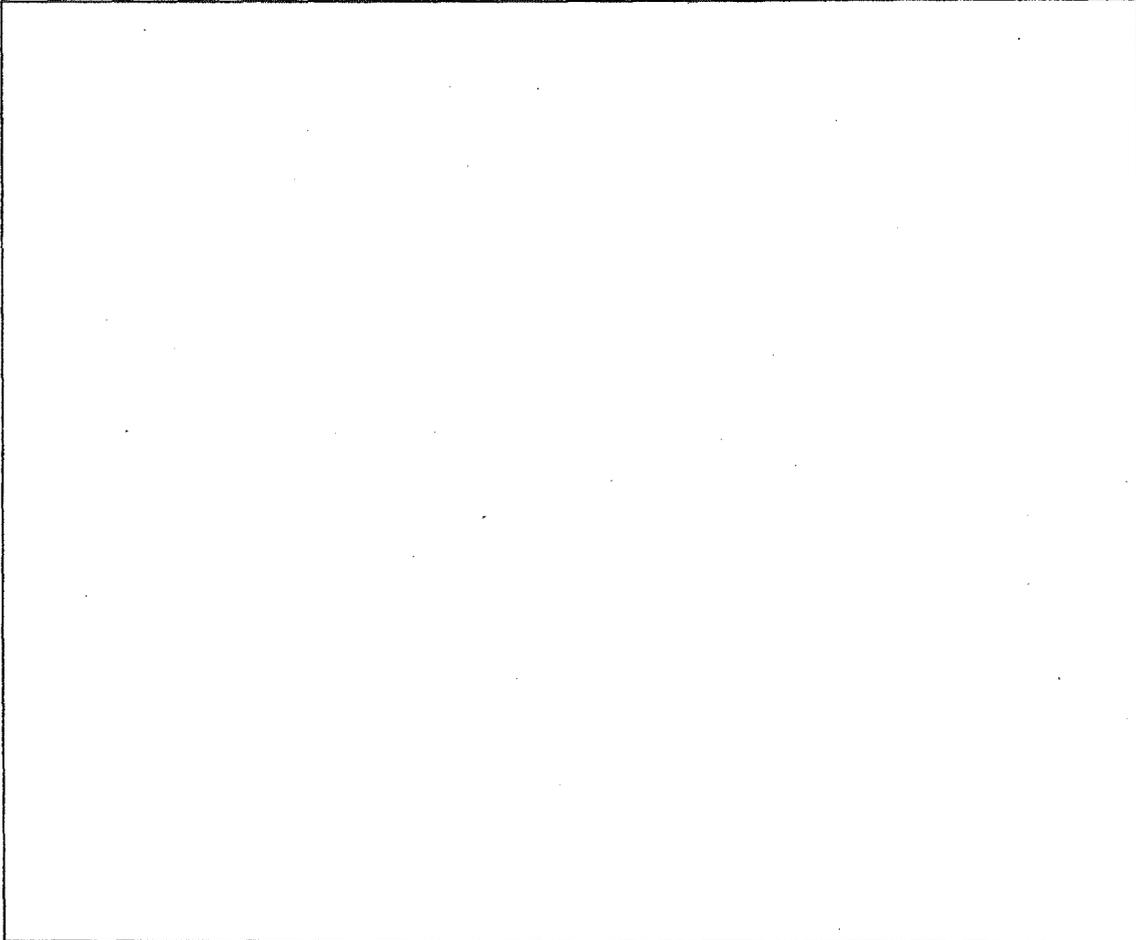
| Not at all | A Little | Some | A Lot | Extremely |
|------------|----------|------|-------|-----------|
|------------|----------|------|-------|-----------|

I feel or felt :

| | | | | | |
|--|---|---|---|---|---|
| 10. Caregiving for this person affected my relationships with other family and/or friends in a negative way..... | 1 | 2 | 3 | 4 | 5 |
| 11. Resentful about my interactions with the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 12. Pleased about my interactions with the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 13. Useful in my interactions with the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 14. The person in my care is or was dependent..... | 1 | 2 | 3 | 4 | 5 |
| 15. Strained in my interactions with the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 16. My own health has suffered because of my involvement with the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 17. I contribute/contributed to the well-being of the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 18. Less privacy than I would like, due to caregiving..... | 1 | 2 | 3 | 4 | 5 |
| 19. Less social life than I would like, due to caregiving..... | 1 | 2 | 3 | 4 | 5 |
| 20. I wish there was or had been a better relationship between myself and the person in my care..... | 1 | 2 | 3 | 4 | 5 |
| 21. The person in my care does not or did not appreciate my caregiving as much as I would like..... | 1 | 2 | 3 | 4 | 5 |
| 22. The person in my care tries or tried to manipulate me..... | 1 | 2 | 3 | 4 | 5 |
| 23. The person in my care expects or expected me to be the only one he or she will depend on..... | 1 | 2 | 3 | 4 | 5 |
| 24. Not enough money to support myself while giving care..... | 1 | 2 | 3 | 4 | 5 |
| 25. I want or wanted to be able to provide more financial support to the person in my care..... | 1 | 2 | 3 | 4 | 5 |

**Thank you for telling me about your experiences with caregiving.
Please turn to the back of the survey booklet for one final question**

If you have anything more you would like to say about the topics in this survey, please feel free to write them in the space below. When you are finished, please fold the questionnaire in half and return it to the address at the bottom of the page. A stamped, addressed envelope is provided.



Thank you for participating in this survey. Your willingness to share your experiences is important for our understanding and appreciation of later adult life.

**Susan M. Collins
Iowa State University
1091 LeBaron Hall
Ames, IA 50011 -1120**

Connections Project Codebook

| Q | Variable Name | Variable Description (Variable Label) | Value Label - Code as: |
|----|---|--|---|
| Q1 | q1 (a-j) (Russell Loneliness Scale, short form) | The following statements describe how people sometimes feel. For each statement, please indicate how often you currently feel the way described, by circling one number for each item below: qlona =How often do you lack companionship? qlonb =How often do you feel a lot in common with the people around you? qlonc =How often do you feel close to people? qlond =How often do you feel left out? qlone =How often do you feel that no one really knows you well? qlonf =How often do you feel isolated from others? qlong =How often do you feel there are people who really understand you? qlonh =How often do you feel that people are around you but not with you? qloni =How often do you feel that there are people you can talk to? qlonj =How often do you feel that there are people you can turn to? | code each, a-j (Ordinal) 1=Never 2=Rarely 3=Sometimes 4=Always Missing=9 |
| Q2 | q2 | health =How would you rate your overall health at the present time (please check one): | (Ordinal) 1=Excellent 2=Good 3=Fair 4=Poor Missing=9 |
| Q3 | q3 | Thinking about your life in general are you... (Please circle one number on the scale below) Very unhappy Unhappy Neither Happy nor Unhappy Happy Very Happy | (Interval Scale) code as 1-7 missing=9 |
| Q4 | q4 Q4a - Q4nn (Barerra Social Support Scale) | During the past month, please tell me how often anyone: q4a =Gave you some information on how to do something (1) q4b =Helped you understand why you didn't do something well (2) q4c =Suggested some action you should take (3) q4d =Gave you feedback on how you were doing without saying it was good or bad (4) q4e =Made it clear what was expected of you (5) q4f =Gave you information to help you understand a situation you were in (6) q4g =Checked back with you to see if you followed the advice you were given (7) | for each item q4a-q4nn: 1-Not at all 2=Once or twice a month 3=Once a week 4=Several times a week 5=About every day missing=9 |

| | | | |
|-----------|---|---|---|
| | | <p>q4h=Taught you how to do something (8) q4i=Told you whom you should see for assistance (9) q4j=Told you what to expect in a situation that was about to happen (10) q4k=Said things that made your situation clearer and easier to understand (11) q4l=Assisted you in setting a goal for yourself (12) q4m=Told you what he/she did in a situation similar to yours (13) q4n=Told you what he/she felt in a situation similar to yours (14) q4o=Told you that he/she feels very close to you (15) q4p=Let you know that he/she will always be around if you need assistance (16) q4q=Expressed interest and concern for your well-being (17) q4r=Comforted you by showing some physical affections (18) q4s=Told you that you are ok just the way you are (19) q4t=Told you that he/she would keep the things you talked about private (20) q4u=Expressed esteem or respect for a competency or personal quality of yours (21) q4v=Was right there with you (physically) in a stressful situation (22) q4w=Listened to you talk about your private feelings (23) q4x=Let you know that you did something well (24) q4y=Participated in some activity with you to help get your mind off things (25) q4z=Talked with you about some interests of yours (26) q4aa=Joked and kidded to try and cheer you up (27) q4bb=Gave you over \$25 (28) q4cc=Gave you under \$25 (29) q4dd=Loaned you over \$25 (30) q4ee=Loaned you under \$25 (31) q4ff=Provided you with a place to stay (32) q4gg=Pitched in to help you do something that needed to get done (33) q4hh=Loaned you or gave you something (not \$) that you needed (34) q4ii=Provided you with transportation (35) q4jj=Went with you to someone who could take action (36) q4kk=Provided you with a place to get away for awhile (37) q4ll=Looked after a family member while you were away (38) q4mm=Watched after your possessions when you were away (39) q4nn=Agreed that what you wanted to do was right (40)</p> | <p>for each item, q4a-q4nn: 1=Not at all 2=Once or twice a month 3=Once a week 4=Several times a week 5=About every day missing=9</p> |
| <p>Q5</p> | <p>q5 (q5a-q5q) (Bartholomew Relationship Scales Questionnaire - Attachment)</p> | <p>For each item below, please circle one number on the scale from 1 (not at all like me) to 5 (Very much like me) :</p> <p>q5a=I find it difficult to depend on other people q5b=It is very important for me to feel independent q5c=I find it easy to get emotionally close to others q5d=I worry that I will be hurt if I allow myself to be too close to others q5e=I feel comfortable without close emotional relationships q5f=I want to be completely emotionally intimate with others q5g=I worry about being alone q5h=I am comfortable depending on other people q5i=I find it difficult to trust others completely q5j=I am comfortable having other people depend on me q5k=I worry that others don't value me as much as I value them q5l=It is very important to me to feel self sufficient q5m=I prefer not to have other people depend on me q5n=I am uncomfortable being close to others</p> | <p>for each item q5a-q5q: 1=Not at all like me 2 3 4 5=Very much like me missing=9</p> |

| | | | |
|----|---|---|---|
| | | <p>q5o=I find that others are reluctant to get as close to me as I would like</p> <p>q5p=I prefer not to depend on others</p> <p>q5q=I worry about having others not accept me</p> | |
| Q6 | q6 | <p>In general, how satisfied are you with the assistance and support you receive from other people? (Please circle one number that best describes your level of satisfaction)</p> | <p>Code as 1-7 on vertical scale</p> <p>1=Very dissatisfied Dissatisfied Neither satisfied nor dissatisfied Satisfied 7=Very satisfied</p> <p>missing=9</p> |
| Q7 | <p>q7 (q7a-q7d)</p> <p>(Bartholomew Relationship Questionnaire - Attachment)</p> <p>Secure Dismissing Preoccupied Fearful</p> | <p>The following four paragraphs describe ways people sometimes feel about themselves and others. Please show how much <i>each</i> of the descriptions below is like you or not like you, by circling <u>one</u> number on the scale from 1 ("least like me") to 7 ("most like me") for <i>each</i> paragraph</p> <p>q7a : <i>Paragraph 1</i>: It is relatively easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me</p> <p>q7b : <i>Paragraph 2</i>: I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.</p> <p>q7c : <i>Paragraph 3</i>: I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.</p> <p>q7d <i>Paragraph 4</i>: I am somewhat uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I sometimes worry that I will be hurt if I allow myself to become too close to others.</p> | <p>For each paragraph code as a scale:</p> <p>1= Least like me 2 3 4 5 6 7=Most like me</p> <p>missing=9999</p> |
| Q8 | q8 | <p>What is your current marital status? (Please circle <u>one</u> number from the list below</p> | <p>(Nominal)</p> <p>1=Currently married 2=Currently separated or divorced 3=Currently widowed/widower 4=Never married</p> <p>5=Other (write _____)</p> <p>missing=9</p> |

| | | | |
|-----|--------------------|---|--|
| Q9a | q9 (q9a1-q9a5) | <p><i>What is your race/ethnicity? (Please circle <u>all that apply</u>)</i></p> <p>q9a1=African American/Black q9a2=Asian/Pacific Islander q9a3=Caucasian/White q9a4=Native American Indian/Alaskan Native</p> <p><i>q9a5=Other, including multiracial (please write in</i></p> | <p><i>(Nominal)</i></p> <p><i>for each item:</i></p> <p>1=Yes 0=No</p> <p>9=missing all for Q10</p> |
| Q9b | q91b | <p>Are you Spanish/Hispanic/Latino? (please check <u>one</u>)</p> | <p><i>(Nominal)</i></p> <p>1=Yes 0= No</p> <p>missing=9</p> |
| Q10 | q10 (q10a-q10f) | <p><i>What are your current living arrangements? (Please circle <u>all that apply</u>)</i></p> <p>q10a=alone q10b=with spouse or partner q10c=with parent q10d=with child q10e=with brother or sister q10f=with other (please write in)</p> | <p><i>(Nominal)</i></p> <p><i>for each item:</i></p> <p>1=Yes 0=No</p> <p>9=missing all for Q10</p> |
| Q11 | q11 | <p>Please write in the year you were born _____</p> | <p><i>(Interval)</i></p> <p><i>four digit year</i></p> <p>missing=9999</p> |
| Q12 | q12 | <p>Are you male or female?</p> | <p><i>(Nominal)</i></p> <p>1=Female</p> |

| | | | |
|-----|--------------------|--|--|
| | | | 0=Male missing=9 |
| Q13 | q13 (q13a-q13f) | What is your current occupational status? (Please circle <u>all that apply</u>): q13a=Working full time for an employer or self employed q13b=Working part time for an employer or self employed q13c=Working at home (homemaker) q13d=Retired q13e=Unemployed q13f=Other (please write in) | (Nominal) for each item: 1=Yes (circled) 0=No (not circled) 9=missing all |
| Q14 | q14 | What was your household income, before taxes, for the year 2000? (Please check <u>one</u> space): | (Ordinal) 1=less than \$14,999 2=\$15,000 - 29,999 3=\$30,000 - 44,999 4=\$45,000 - 59,999 5=\$60,000 - 74,999 6=\$75,000 - 99,999 7=greater than \$100,000 missing=9 |
| Q15 | q15 q15a-q15b) | q15a: In your adult life, have you experienced the death of any person whom you considered very close to you?? (please check <u>one</u>) q15b: If Q15 is YES, please write in the year in which the most recent death occurred _____ | q15a - (Nominal) 1=Yes 0=No missing=9 q15b: (Interval) four digit year |

| | | | |
|------------|---------------------|--|---|
| | | | <p>7=<i>not applicable (q15a = No)</i></p> <p>9=<i>missing (q15a Yes and q15b blank)</i></p> |
| Q16 | q16 (q16a-q16d) | q16a = Please circle one number from the list below to indicate any time you have spent as a primary caregiver for another adult. | <p>q16a (Nominal)</p> <p>1 = Never</p> <p>2 = I am currently a primary caregiver</p> <p>3 = I was a caregiver at one time but not now</p> <p><i>missing=9</i></p> |
| | SKIP PATTERN | If Q16a=1, NEVER code anything written on back of survey and code the rest as 8 | 8 if q16a=1 NEVER |
| Q23 | Open | Back Cover Comments (Code this item here, because if rest=8, the survey is done. - easier to code by copy/paste). | <p><i>(Nominal)</i></p> <p>1=Topic comment</p> <p>2=Survey comment</p> <p>0=Nothing written</p> |
| Q16, cont. | | <p>Q16b = If circled 2, how many months have you given care?</p> <p>q16c = If you circled #3, when did your most recent function as a caregiver end?(please write in)</p> <p>q16d= If you circled #3, why did your most recent function as a caregiver end?(please write in)</p> | <p>q16b (Interval)</p> <p><i>number of months</i></p> <p><i>if circled 3=7 N/A</i></p> <p><i>9=missing, if q16a#2,</i></p> <p><i>q16b blank</i></p> <p><i>99 if 2 circled, month missing</i></p> |

| | | | |
|-----|-----|--|---|
| | | | <p><i>q16c (Interval)</i></p> <p><i>Year</i></p> <p><i>if circled2=7 N/A</i></p> <p><i>9=missing, if q16a#2, q16b blank</i></p> <p><i>9999=if 3 circled, year missing</i></p> <p> </p> <p><i>q1d=(Nominal)</i></p> <p><i>1=#3 circled, Death</i></p> <p><i>2=#3 circled, Not Death</i></p> <p><i>if circled 2=7 N/A</i></p> <p><i>missing=9 if whole of Q16 not circled</i></p> |
| Q17 | q17 | If you answered "currently" or "at one time" to being a caregiver for an adult who is close to you, please identify the person for whom you <u>currently or most recently</u> served as a primary caregiver: | <p><i>(Nominal)</i></p> <p><i>1=spouse or romantic partner</i></p> <p><i>2=one or more of your children</i></p> <p><i>3=parent</i></p> <p><i>4=In-law</i></p> <p><i>5=sister or brother</i></p> <p><i>6=friend</i></p> <p> </p> <p><i>7=other (please specify)</i></p> <p> </p> <p><i>missing=9</i></p> |
| Q18 | q18 | q18a= Does or did this person have Alzheimer's Disease or some other form of dementia? | <p><i>q18a (Nominal)</i></p> <p><i>1=Yes</i></p> <p> </p> <p><i>0=No</i></p> <p> </p> <p><i>missing=9</i></p> |

| | | | |
|-----|-----|--|---|
| | | | <p><i>q16c (Interval)</i></p> <p><i>Year</i></p> <p><i>if circled2=7 N/A</i></p> <p><i>9=missing, if q16a#2,</i></p> <p><i>q16b blank</i></p> <p><i>9999=if 3 circled, year</i></p> <p><i>missing</i></p> <p><i>q1d=(Nominal)</i></p> <p><i>1=#3 circled, Death</i></p> <p><i>2=#3 circled, Not Death</i></p> <p><i>if circled 2=7 N/A</i></p> <p><i>missing=9 if whole of</i></p> <p><i>Q16 not circled</i></p> |
| Q17 | q17 | If you answered "currently" or "at one time" to being a caregiver for an adult who is close to you, please identify the person for whom you <u>currently or most recently</u> served as a primary caregiver: | <p><i>(Nominal)</i></p> <p><i>1=spouse or romantic partner</i></p> <p><i>2=one or more of your children</i></p> <p><i>3=parent</i></p> <p><i>4=In-law</i></p> <p><i>5=sister or brother</i></p> <p><i>6=friend</i></p> <p><i>7=other (please specify)</i></p> <p><i>missing=9</i></p> |
| Q18 | q18 | q18a= Does or did this person have Alzheimer's Disease or some other form of dementia? | <p><i>q18a (Nominal)</i></p> <p><i>1=Yes</i></p> <p><i>0=No</i></p> <p><i>missing=9</i></p> |

| | | | |
|-----|--------------------|--|--|
| Q22 | q22 (q22a-q22x) | <p>how much do you or did you feel each of the following about your current or most recent caregiving experience? I feel or felt:</p> <p>q22a=Resentful of other relatives who could but don't or didn't do enough for the person in my care</p> <p>q22b=Requests by the person in my care are or were over and above his or her needs</p> <p>q22c=Not enough time for myself because of my involvement with the person in my care</p> <p>q22d=Stressed at trying to balance time spent giving care and time spent with other responsibilities</p> <p>q22e=Embarrassed about the behavior of the person in my care</p> <p>q22f=Guilty about my interactions with the person in my care</p> <p>q22g=That I don't or didn't do as much as I could for the person in my care</p> <p>q22h=Angry about my interactions with the person in my care</p> <p>q22i=Nervous or depressed about my interactions with the person in my care</p> <p>Q22j=CG affected my relationships with other family and or friends, negatively</p> <p>q22kj=Resentful about my interactions with the person in my care</p> <p>q22l=Pleased about my interactions with the person in my care</p> <p>q22m=Useful in my interactions with the person in my care</p> <p>q22n=The person in my care is or was dependent</p> <p>q22o=Strained in my interactions with the person in my care</p> <p>q22p=My own health suffered because of my involvement with the person in my care</p> <p>q22q=I contribute/contributed to the well being of the person in my care</p> <p>q22r=Less privacy than I would like, due to caregiving</p> <p>q22s=Less social life than I would like, due to caregiving</p> <p>q22t=I wish there was or had been a better relationship between myself and the person in my care</p> <p>q22u=The person in my care does not or did not appreciate my caregiving as much as I would like</p> <p>q22v=The person in my care tries or tried to manipulate me</p> <p>q22w=The person in my care expects or expected me to be the only one he or she will depend on</p> <p>q22x=Not enough money to support myself while giving care</p> <p>q22y=I want or wanted to be able to provide more financial support to the person in my care.</p> | <p>(Interval)</p> <p>for each item:</p> <p>1=Not at all</p> <p>2=A little</p> <p>3=Some</p> <p>4=A lot</p> <p>5=Extremely</p> <p>missing=9</p> |
|-----|--------------------|--|--|

ANNOUNCEMENT LETTER: SENT ONE WEEK PRIOR TO SENDING THE SURVEY.

May 8, 2001

Dear

Within the next few days you will receive a request to complete a questionnaire. I will be mailing a survey to you in an effort to learn how mature adults perceive and experience their social relationships. Your confidential participation will provide valuable information about how we perceive our relationships to others as we grow older.

The survey is being conducted through Iowa State University as part of a research project in the field of Gerontology. The information you share will be used to study the experiences of aging.

Your response to the forthcoming survey is very important to the success of this project. Although your participation is voluntary, your willingness to complete and return the questionnaire is greatly appreciated. Please watch for the arrival of the survey next week.

Thank you in advance for your help with this project.

Sincerely,

Susan M. Collins, Project Director
"Connections: Family and Friends in Later Life"

SECOND LETTER: SURVEY, WITH A SECOND COVER LETTER THAT EXPLAINS HOW THE SAMPLE WAS OBTAINED, CONFIDENTIALITY, ETC.

May 15, 2001

Name
Address
City, ST Zip-code

Dear

Last week I wrote to you about a survey that I would be sending to you this week. Enclosed please find a copy of the "*Connections: Family and Friends in Later Life*" survey. This research is conducted through Iowa State University, and the results will benefit our understanding of the experience of aging in the context of social and personal relationships. By confidentially sharing your own perceptions and experiences you will contribute valuable information to our knowledge of issues important to older adults.

The survey may take about 30 minutes to complete. When you are finished with the survey, please fold the questionnaire in half and mail it in the enclosed postage-paid envelope, if possible by **May 25, 2001**.

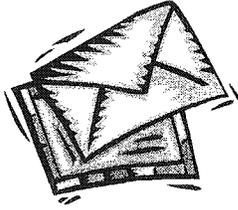
Your name was randomly selected for this survey, from public records. Your answers will be kept confidential, and results of the survey will not be reported in any way that would identify any individual. Although the survey has an identification number, it will only be used to record your return so that you will not receive additional letters. Your name and street address will never appear on the questionnaire or with your answers.

While completion of the survey is completely voluntary, I hope you will take a few minutes to share your experiences. If you have inquiries, please call 1-888-865-2440 to reach me or e-mail me at smcollin@iastate.edu. I will be happy to answer your questions.

Thank you very much for your participation.

Susan M. Collins, Project Director
"Connections: Family and Friends in Later Life"

POSTCARD: SENT AS A REMINDER APPROXIMATELY ONE WEEK AFTER
MAILING THE SECOND LETTER/SURVEY



Last week a survey called
“Connections: Family and Friends in Later Life”
was mailed to you

If you have returned the survey
please accept my sincere thanks!

If you have not yet had time to respond, I encourage you to do so because
your responses are valuable for our understanding of the social
experiences of adult life.

If you have not received the survey, or if it was misplaced, please call
1-888-865-2440 so that a copy can be mailed to you.

Susan M. Collins
Project Director
Iowa State University

LETTER FOUR: WAS SENT ONLY TO INDIVIDUALS IN THE SAMPLE WHO HAVE NOT RETURNED A COMPLETED SURVEY. ANOTHER SURVEY WAS SENT WITH THIS LETTER.

Name
Address
City, ST Zip-Code

Dear :

A survey titled "*Connections: Family and Friends in Later Life*" was mailed to you a few weeks ago that asked you about your perceptions and experiences regarding personal and social relationships. As of today I have not received your completed questionnaire.

In order for information gathered to represent a range of experiences and opinions, it is essential that each person contacted return a completed questionnaire if at all possible. The topic of this survey addresses issues of a personal nature concerning your feelings and perceptions about your interactions with other people. Our knowledge about these issues is essential for understanding the richness of later life experience.

Please be assured that your answers will be kept confidential. Your name was randomly selected from public records. Although the survey has an identification number, it will only be used to record your return so that you will not receive additional letters. Your name and street address will never appear on the questionnaire or with your answers. Results of the survey will not be reported in any way that would identify any individual.

I have enclosed a duplicate survey and postage-paid return envelope for your convenience. I would be happy to answer any questions you have about completing the survey. Please do not hesitate to call 1-888-865-2440 to reach me or e-mail me at smcollin@iastate.edu.

Sincerely,

Susan M. Collins, Project Director
"Connections: Family and Friends in Later Life"

APPENDIX B

UCLA Loneliness Scale (Version 3)

Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, 66, 20-40.

Russell (1996) found that a 10 item short form had comparable reliability and validities. Corrected total item correlations from previous studies using the scale were used to determine which questions were best to keep in the short form. The complete 20 item series of questions is shown below:

1. How often do you feel "in tune" with the people around you?*
- 2. How often do you feel that you lack companionship?**
3. How often do you feel there is no one you can turn to?
4. How often do you feel alone?
5. How often do you feel part of a group of friends?*
- 6. How often do you feel a lot in common with the people around you?***
7. How often do you feel you are no longer close to anyone?
8. How often do you feel that your interests and ideas are not shared by those around you?
9. How often do you feel outgoing and friendly?*
- 10. How often do you feel close to people?***
- 11. How often do you feel left out?**
12. How often do you feel your relationships with others are not meaningful?
- 13. How often do you feel that no one really knows you well?**
- 14. How often do you feel isolated from others?**
15. How often do you feel you can find companionship when you want it?*
- 16. How often do you feel there are people who really understand you?***
17. How often do you feel shy?
- 18. How often do you feel that people are around you but not with you?**
- 19. How often do you feel that there are people you can talk to?***
- 20. How often do you feel that there are people you can turn to?***

*reverse coded so that higher levels on the scale indicate higher degree of loneliness

Note: Items in bold are used for the short form

Relationship Questionnaire

Griffin, D. W., & Bartholomew, K. (1994). Models of self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology*, 67, 430-445.

Two dimensions: model of self, model of other (dimensions not tested for this study – was supported by prior structural model studies)

Attachment groups:

Secure

Preoccupied

Dismissing

Fearful.

Measured by:

The Relationship Questionnaire (RQ):

Each of four paragraphs rated by respondent on a seven point scale from "least like me" = 1, to "most like me" =7.

RQ - Self Report Attachment Style Prototypes

Secure: It is relatively easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me.

Dismissing: I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

Preoccupied: I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

Fearful: I am somewhat uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I sometimes worry that I will be hurt if I allow myself to become too close to others.

Relationship Scales Questionnaire

Griffin, D. W., & Bartholomew, K. (1994). Models of self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology*, 67, 430-445.

Relationship Scales Questionnaire (RSQ). Respondents are placed in one attachment type category that reflects his or her highest overall score. 30 items scored 1="not at all like me" to 5="most like me." Factors to make subscales (one of the four group types, Secure, Dismissing, Preoccupied, Fearful)

1. I find it difficult to depend on other people (Fear)
2. It is very important for me to feel independent (Dis)
3. I find it easy to get emotionally close to others (Sec)
4. I want to merge completely with another person
5. I worry that I will be hurt if I allow myself to become too close to others (Fear)
6. I am comfortable without close emotional relationships (Dis, Pre-R)
7. I am not sure that I can always depend on others to be there when I need them.
8. I want to be completely emotionally intimate with others (Pre).
9. I worry about being alone (Sec-R).
10. I am comfortable depending on other people (Sec).
11. I often worry that romantic partners don't really love me.
12. I find it difficult to trust others completely (Fear).
13. I worry about others getting too close to me.
14. I want emotionally close relationships.
15. I am comfortable having other people depend on me (Sec).
16. I worry that others don't value me as much as I value them (Pre).
17. People are never there when you need them.
18. My desire to merge completely sometimes scares people away.
19. It is very important to me to feel self-sufficient (Dis)
20. I am nervous when anyone gets too close to me.
21. I often worry that romantic partners won't want to stay with me.
22. I prefer not to have other people depend on me (Dis).
23. I worry about being abandoned.
24. I am uncomfortable being close to others (Fear).
25. I find that others are reluctant to get as close as I would like (Pre).
26. I prefer not to depend on others (Dis).
27. I know that others will be there when I need them.
28. I worry about having others not accept me (Sec-R).
29. Romantic partners often want me to be closer than I feel like being.
30. I find it relatively easy to get close to others.

Items with R are reverse scored. Note: Fear=fearful attachment, Dis=dismissing attachment, Pre=preoccupied attachment, Sec=secure attachment. Items without parenthetical type indicated did not factor into one of the four attachment subscales. They were not included on the survey.

Inventory of Socially Supportive Behaviors

Finch, J. F., Barrera Jr., M., Okun, M. A., Bryant, W. H., Pool, G. J., & Snow-Turek, L. (1997). The factor structure of received social support: Dimensionality and the prediction of depression and life satisfaction. *Journal of Social and Clinical Psychology, 16*, 323-342.

Inventory of Socially Supportive Behaviors (ISSB). Measures amount of respondent received (enacted) social support during the previous month.

40 self report items scored from 1="not at all" to 4="about every day."

During the past month, please tell me the frequency with which someone:

0=not at all

1=once or twice

2=about once a week

3=several times a week

4=about every day

1. Gave you some information on how to do something.
2. Helped you understand why you didn't do something well.
3. Suggested some action that you should take.
4. Gave you feedback on how you were doing without saying it was good or bad.
5. Made it clear what was expected of you.
6. Gave you information to help you understand a situation you were in.
7. Checked back with you to see if you followed the advice you were given.
8. Taught you how to do something.
9. Told you who you should see for assistance
10. Told you what to expect in a situation that was about to happen.
11. Said things that made your situation clearer and easier to understand.
12. Assisted you in setting a goal for yourself.
13. Told you what he/she did in a situation that was similar to yours.
14. Told you how he/she felt in a situation that was similar to yours.
15. Told you that he/she feels very close to you.
16. Let you know that he/she will always be around if you need assistance.
17. Expressed interest and concern for your well-being.
18. Comforted you by showing some physical affection.
19. Told you that you are OK just the way you are.
20. Told you that he/she would keep the things you talked about private
21. Expressed esteem or respect for a competency or personal quality of yours.
22. Was right there with you (physically) in a stressful situation
23. Listened to you talk about your private feelings
24. Let you know that you did something well.
25. Participated in some activity with you to help you get your mind off things.
26. Talked with you about some interests of yours.
27. Joked and kidded to try and cheer you up.

28. Gave you over \$25.00
29. Gave you under \$25.00
30. Loaned you over \$25.00
31. Loaned you under \$25.00
32. Provided you with a place to stay.
33. Pitched in to help you do something that needed to get done.
34. Loaned you or gave you something (other than money) that you needed.
35. Provided you with transportation.
36. Went with you to someone who could take action
37. Provided you with a place to get away for awhile
38. Looked after a family member while you were away.
- 39.. Watched after your possessions when you were away
40. Agreed that what you wanted to do was right.

APPENDIX C

Attachment Model

Two Dimensional (self and other), Four Attachment Group Model of Adult Attachment

Griffin, D. W. , & Bartholomew, K. (1994). Models of self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology*, 67, 430-445

MODEL OF SELF

