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**ORIENTATION TOWARD OTHERS, LIFE SATISFACTION
AND HEALTH:
THE RELATIONSHIP OF
SOCIAL INTEREST AND GENERATIVITY TO
POSITIVE PSYCHOLOGICAL FUNCTIONING IN OLD AGE**

Committee:

Guy J. Manaster, Supervisor

Frank C. Richardson

Toni L. Falbo

Timothy Z. Keith

Gayle J. Acton

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by

Mary Katherine Knill, B.A., M.A.

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Dedication

To my grandparents, Anthony and Ada, Leo and Mary. You are always in my heart.

To my brothers and their wives, Joe and Kim, David and Debbie, whose constant love
and support keep me going through good times and bad.

To my nephews and nieces, Ari and Joshua, MacKenzie and Kaitlin, whose boundless joy
and playfulness keep me smiling. You teach me everyday of the important things in life.

To my dear friends, Lisa and Pedro, who listen and offer words that no one else can.

And to my parents, whose values of contribution and lifelong learning inspired this work,
and whose enduring love is the foundation for my being.

This dissertation is dedicated to my family and friends whose unstoppable love, care and
joy lift me up. You know the song in my heart.

Thank you.

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Supervisor: Guy J. Manaster

This study explored the theoretical similarities between Alfred Adler's idea of social interest and Erik Erikson's concept of generativity and tested these similarities empirically. It also evaluated the hypothesis that both social interest and generativity would predict well-being in older adults through their effects on life satisfaction and self-rated health. Two path models were proposed to describe the relationships among social interest, generativity, life satisfaction and self-rated health, with life satisfaction and self-rated health as the dependent variables. The first path model explored the effects of social interest and generativity on self-rated health, as mediated by life satisfaction. The second path model reversed the two dependent variables and explored the effects of social interest and generativity on life satisfaction, through their effects on self-rated health. Results demonstrated that, in this sample of 311 adults between the ages of 60

and 96, social interest was not related to generativity, and had no predictive effects on life satisfaction or self-rated health. In the first path model, generativity predicted self-rated health as a direct effect, and life satisfaction fully mediated this effect. In the second path model, generativity predicted life satisfaction, and self-rated health only partially mediated the effect. The results of the first path model indicated that, in this sample population, those who were more satisfied with their lives also believed their health to be better.

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CHAPTER ONE

INTRODUCTION

Successful aging has been the focus of gerontological research for over 40 years (Havighurst, 1961; Neugarten, Havighurst & Tobin, 1968). This research focuses on both physical and mental health indicators that are said to describe successful aging (Diener, 1984; Havighurst, 1961; Rowe & Kahn, 1998). As the percentage of our population over the age of 65 increases, and those over the age of 65 can anticipate living into their eighties (Administration on Aging, 2003), the well-being of older adults is taking on central importance for all dimensions of our society, from public policy to health to family relations. But at its heart, when researchers explore the factors that constitute successful aging, they in fact are asking, “What constitutes the good life in old age?” Less frequently, they ask the question, “What constitutes the good life for both older adults and society?”

These are not easy questions to answer, especially in light of the criticism that some present-day thinkers level at a postmodern American society that, in its elevation of the autonomous, independent, and “bounded” self as the ideal, has created a culture of materialism and isolation that offers little support to individuals facing life’s inevitable changes (Cushman, 1990; Hale, 1999; Richardson & Manaster, 2003; Schumaker, 2001). Indeed, Scheff (2000) suggests that isolation, or “absence of a stable community,” is a source of anxiety and depression rather than the consequence of these conditions. The psychological profession shares culpability in this current state of affairs, promoting autonomy and independence as the goals of healthy development and therapy for those experiencing difficulties conforming to this society. As a result, there is a growing call

for psychology to re-examine its theory and practice to discern ways to help individuals and society develop in a manner that emphasizes interactions between the individual and others, that teaches us how to cooperate and converse in an effort to arrive at shared visions of living, and that ultimately strives to find answers to the question of what constitutes the good life for both the individual and society (Guisinger & Blatt, 1994; Manaster, Cemalcilar & Knill, 2003; Richardson & Manaster, 2003; Sperry, 2003).

Two traditional theories of personality and development have basic assumptions concerning the role that social embeddedness plays in both individual and societal well-being: Alfred Adler's theory of Individual Psychology and Erik Erikson's theory of psychosocial development. Within Adler's theory of Individual Psychology, the concept of social interest is crucial to a person's mental health and to adjustment in old age (Ansbacher, 1992). Adler described social interest as the ability "to see with the eyes of another, to hear with the ears of another, to feel with the heart of another" (Ansbacher & Ansbacher, 1956, p. 135). He considered one's degree of social interest to be a barometer of mental health throughout a person's life (Ansbacher & Ansbacher, 1956). In Adler's words, old age and death "will not terrify one who is certain of his immortality in the image of his children and in the knowledge of his contribution to the growing culture" (Adler, 1938, p. 66). As an individual grows older, social interest in the form of a self-transcendent community feeling is the source of spiritual survival (Ansbacher, 1992). Further consideration of Adler's concept of social interest and its counterpart, community feeling, have led some researchers to explore an expanded aspect of social interest variously called community feeling (Ansbacher, 1992) and communitarian social interest (Manaster, Cemalcilar & Knill, 2003). As distinguished from interpersonal social interest, communitarian social interest is characterized by a concern for all of humankind, with the concomitant progress of society toward an ideal goal of community – in Adler's

words, a “feeling with the whole, sub specie aeternitatis, under the aspect of eternity” (Adler, 1979a, p. 34).

Erikson’s seventh stage of generativity within his theory of psychosocial development shares many similarities with Adler’s social interest construct. Erikson offered one of the few developmental theories that considers the individual from birth to death. While the theory consists of eight distinct stages, they are all characterized by a “vital involvement” with the social environment (Erikson, Erikson & Kivnick, 1986). The seventh stage of generativity and the eighth stage of integrity both contain elements of self-transcendence, with the seventh stage of generativity specifically concerned with contributing to the progress of humankind and society. Erikson stated,

We must acknowledge a universal goal in mankind which has, over the millennia, led to larger and larger units of an ever more inclusive identity.... [W]e must learn to differentiate between the way in which such tendencies as Exclusivity and Rejectivity aggravate the moralistic destructiveness of public and private morals; and how virtues such as Love and Care, in turn, contribute to a more insightful and universal ethics (Erikson, 1978, p. 17).

Both theories are concerned with the development of a mentally healthy and adjusted individual, a central assumption of research on successful aging, while simultaneously emphasizing the mutual effect of the individual and society on each other’s development and well-being. However, the empirical study of social interest suffers from diffuse definitions of the construct as exemplified by numerous measurement scales that are only moderately intercorrelated (Bass, et al., 2002). Conversely, the last two decades have seen a growth and cooperation among researchers of generativity, resulting in scales that have strong positive correlations (Bradley, 1997; McAdams & de St. Aubin, 1992; Peterson & Klohnen, 1995).

This study tests the premise that social interest and generativity are barometers of an individual’s mental health by assessing their effects on two indicators of an older

adult's well-being: life satisfaction and self-rated health. Life satisfaction is "a global assessment of a person's quality of life according to his chosen criteria" (Diener, Emmons, Larsen & Griffin, 1985, p. 71). Self-rated health is a person's subjective rating of his or her health. This rating, used widely in national studies, is significantly correlated with morbidity and mortality risk (Krause & Jay, 1994; Siegler, Bosworth, & Poon, 2003). No research to date has examined the role of social interest in the well-being of older adults, and, while many studies have established a significantly positive correlation between generativity and life satisfaction, only one study has explored the relationship between generativity and self-rated health (Azarow, 2003).

The purpose of this study will be to integrate the diverse research concerning social interest and generativity and examine their effects on two well-being indicators for successful aging: life satisfaction and self-rated health. The study proposes two questions: (1) To better inform future definition and measurement of social interest, this study will examine the relationship between social interest and generativity, two concepts that share many common themes. In their ongoing discussions concerning definition and measurement of social interest, a significantly positive correlation between these two constructs might encourage Adlerians to consider some of the ways Eriksonian researchers have set about defining generativity. (2) The second question concerns the predictive value of each construct of social interest and generativity for the well-being of older adults by conducting a path analysis of the independent variables of social interest and generativity to the outcome variable of self-rated health, as mediated by life satisfaction. This research question proposes that an older adult who is satisfied with his life will rate his physical health as better than an individual with lower life satisfaction. If this is shown to be a plausible hypothesis in this sample, then interventions that address an individual's mental health could improve his incidence of morbidity and increase his

longevity (Strawbridge & Wallhagen, 1999). But because the direction of causality between life satisfaction and self-rated health has only been theorized (Diener, 1984), this study will examine a third question testing the alternative hypothesis that self-rated health mediates the effects of social interest and generativity on life satisfaction. In other words, this hypothesis suggests that someone who believes their health to be better will be more satisfied with life. This causal direction is sometimes assumed in studies on self-rated health (Musick, 1996), and a test of the appropriate causal direction will shed light on how researchers should pose future questions exploring the causes of life satisfaction and self-rated health.

CHAPTER TWO

LITERATURE REVIEW

INTRODUCTION OF THE TOPIC: WELL-BEING IN OLDER ADULTS

For over forty years researchers from the fields of psychology, medicine, epidemiology and sociology have looked to life satisfaction and health as indicators of well-being and successful aging (Havighurst, 1961; Maddox & Douglass, 1973; Neugarten, Havighurst & Tobin, 1968). In 1961, Havighurst suggested that a theory of successful aging should describe “conditions of individual and social life under which the individual older person gets a maximum of satisfaction and happiness” (p. 8). Fisher (1995) found that 55 percent of his sample of older adults identified life satisfaction as a necessary precursor to successful aging. In 1998, Rowe and Kahn presented a theory of successful aging that encompassed both physical and mental health, including: “(a) absence of disease, disability and risk factors; (b) maintaining physical and mental functioning; and (c) active engagement with life” (Strawbridge, Wallhagen, & Cohen, 2002, p. 728). An often-used measurement of health is the single question “How would you rate your health?” (Siegler, Bosworth, & Poon, 2003). This subjective health rating is significantly correlated with functional status, and morbidity and mortality risk (Johnson, et al., 1990; Krause & Jay, 1994; Leihonen, Heikkinen, & Jylha, 1999). However, little is known about the variables that contribute to this subjective health rating, although health researchers acknowledge that the self-assessment includes considerations of social, psychological and spiritual resources as well as physical health (Bjorner & Kristensen, 1999; Borwaski, Kinney, & Kahana, 1996; Idler, Hudson & Leventhal, 1999; Strawbridge & Wallhagen, 1999). While some studies have tested the

effects of various factors on life satisfaction and self-rated health, none have empirically tested the relation of those factors to each other. Although some researchers assume that self-rated health predicts life satisfaction (Musick, 1996), Diener (1984) suggested that life satisfaction should predict subjective domains such as self-rated health. In addition, despite the contribution of psychological factors to the quality of life of older adults, few studies attempt to build a concept of successful aging grounded in personality and developmental theory.

Two theories that describe the mentally healthy individual are Alfred Adler's Individual Psychology and Erik Erikson's theory of psychosocial development. Adler's theory describes the well-adjusted personality as comprised of three interacting components: striving for superiority, social interest, and degree of activity (Ansbacher & Ansbacher, 1956). Erikson's theory describes eight stages of dynamic crises that an individual experiences over the course of one's life. Both theories emphasize the importance that interaction with the social environment plays in the development of the individual, and both theories stress the importance of transcending self-centered goals in order to achieve a well-adjusted personality as well as benefit society at large. In a qualitative and quantitative study on successful aging (Ryff, 1989), participants supported these theoretical suppositions when they expressed the belief that an orientation toward others, that is, relationships with family and friends and showing caring and compassion toward others, were qualities of a mature, well-adjusted and ideal adult.

To more fully understand the relationships of Adler's and Erikson's theories to the well-being indicators of life satisfaction and self-rated health, this study will first discuss the theoretical constructs of social interest and generativity and the ways these are measured. It will then examine the ways in which life satisfaction and self-rated health have been studied in relation to these two constructs. Based on these explorations, the

author will conduct a study to test the relationship between social interest and generativity and to explore the predictive effects of the two personality constructs for life satisfaction and self-rated health, conducting a path analysis to test the hypothesis that generativity and social interest each predict self-rated health, as mediated by life satisfaction. Because no studies have assessed the causal effects of life satisfaction and self-rated health, the author will also test the alternative hypothesis, that is, that social interest and generativity predict life satisfaction, as mediated by self-rated health.

SOCIAL INTEREST

Adler's concept of social interest is one aspect of his personality theory, called Individual Psychology. This theory perceives the individual as a holistic, dynamic life force whose purpose is to develop and move toward "self-preservation, procreation, contact with the surrounding world ... and continuous active adaptation to the demands of the external world" (Adler, 1979a, p. 32). A person accomplishes this task by subjectively interpreting the meaning of the world and his place in it. This interpretation carries with it a goal of perfection, which differs with each individual. Based on the interpretation of his place in the world, and the resulting goal for perfection, the individual creates a style of life, or a manner of expression and behavior, that he perceives will further his subjectively understood goal of perfection. In addition, the goal of perfection contains a goal for an ideal community, expressed as an individual's social interest. A person's degree of social interest will determine the direction in which the individual moves in his striving for his goal of perfection. Thus, an individual's degree of social interest is what determines the direction of one's striving for superiority – whether it be maladaptive and in the direction of self-boundedness and self-enhancement, or normative in its search for solutions that benefit the whole of society.

Individual Psychology describes a holistic, subjective, goal-oriented, creative, and socially-embedded approach to understanding the individual (Bass, 2000; Manaster & Corsini, 1982). Individual Psychology is subjective in that it describes an individual's perceptions, experiences and beliefs as constituting the reality within which that individual acts. It is creative in that the individual creates a way of relating to the world that helps him best fit in the world, as he interprets it to be. This does not deny objective reality. Instead, the individual's "mind directs the person, who in turn is limited by biological/social/environmental conditions" (Manaster & Corsini, 1982, p. 5).

The creative, subjectively constituted individual works toward achieving a subjectively-conceived ideal goal. Adler calls this work "striving" (Adler, 1979a, p. 30). These strivings are constituted by past experiences, present circumstances, and the anticipation of future achievement. They move from "a perceived minus" to a "perceived plus," constituting a continual movement of growth and development (Manaster & Corsini, 1982, p. 14). The goal for these strivings describes such ends as avoiding embarrassment, protecting one's sense of self against change, or building a relationship that reinforces both autonomy and interdependence. The degree to which these strivings are normal and useful is determined by the degree of social interest that an individual applies to resolving the inevitable conflicts that arise from pursuing these goals. Adler states:

Social interest is the barometer of the child's normality.... As long as the feeling of inferiority is not too great, a child will always strive to be worthwhile and on the useful side of life. Such a child, in pursuing this end, is interested in others. Social feeling and social adjustment are the right and normal compensations (Ansbacher & Ansbacher, 1956, pp. 154-155).

Adler further describes the "normal individual" as one "who lives in society and whose mode of life is so adapted that whether he wants it or not, society derives a certain

advantage from his work” (Adler, 1969, p. 41). Summarizing Adler’s views of mental health and maladjustment, Manaster (2004) stated,

“… [I]ndividuals, wholly in and of their social context, create a view of the world and their place and goals within that world and live accordingly. As, and to the degree that, they feel lesser, less able to belong, their personally determined, unique goals and way of living involve their feelings of inferiority and goals of superiority. As they feel adequate, equal, or part of a greater humanity, their personal goals and way of living are in accord with humanity’s more worthy goals of a good life for one and all, socially interested goals, the achievement and experience of which is how Adlerians generally think of ‘mental health’” (pp. 423-424).

Adler conceived of social interest as an “innate potentiality which has to be consciously developed” (Ansbacher & Ansbacher, 1956, p. 134). This potential is developed within the social context, as interpreted by the individual and influenced by environment, education and experience (Ansbacher & Ansbacher, 1956). An infant enters a world shaped by others and grows to contribute to this world. If he contributes nothing, in Adler’s words he will “disappear” or “become extinct” (Adler, 1979a, p. 36). Further summarized, Ansbacher said, “The nucleus of Adler’s personality theory is the concept of a unitary, goal-directed, creative self which in the healthy state is in a positive, constructive, i.e. ethical relationship, to his fellow man” (Ansbacher, 1973, p. 6, quoted in Mozdzierz & Krauss, 1996).

Social interest has meaning at both the levels of individual and community (Manaster, Cemalcilar & Knill, 2003). For the individual, social interest means “to see with the eyes of another, to hear with the ears of another, to feel with the heart of another” (Ansbacher & Ansbacher, 1956, p. 135). At this level, social interest “determines human nature in great part, and … comes to life and becomes productive through the creative power of the child” (Adler, 1991, p. 20). Social interest continues to develop, “remain[ing] throughout life, changed, colored, circumscribed in some cases, enlarged and broadened in others until it touches not only the members of [the

individual's] own family, but also his clan, his nation, and finally the whole of humanity" (Adler 1927, p. 36, quoted in Mozdzierz & Krauss, 1996). In this expansion of social interest to all of humankind, Adler expresses the belief that social interest has a metaphysical aspect meaning a "feeling with the whole, sub specie aeternitatis, under the aspect of eternity. It means a striving for a form of community which must be thought of as everlasting" (Adler, 1979a, p. 34). Furthermore, the individual can never "be the goal of perfection, but only mankind as a cooperating community. A partial community of any kind – perhaps groups that are associated through certain political, religious, or other ideals – is also not sufficient. [W]e mean ... an ideal society yet to be developed which comprises all men" (Adler, 1979a, p. 40).

This aspect of social interest as expanding beyond the interpersonal has at times been referred to as "community feeling" (Ansbacher, 1992), "communitarian social interest" (Manaster et al., 2003), and "self-transcendence" (Peven, 2004). These researchers are describing an element of social interest not yet examined in empirical research, an element that Ansbacher (1992) says "includes a spiritual state with a wide range of referents" (p. 407), and that Manaster et al. (2003) refer to as "a life view in which the horizon of the individual is the horizon of humanity" (p. 113). Manaster et al. further state, "It is hard to imagine living with so little sense of inferiority and vanity that our connections with others demand only efforts for the common good" (p. 113). Peven (2004) describes this element of social interest as "feeling of union and harmony with culture, the world, and the universe" (p. 223) and equates it to self-transcendence and spirituality. Peven (2004) further asserts that, as individuals age, they may turn to more spiritual sources for meaning. All three authors contend that both the interpersonal aspect and the humankind horizon of social interest, that is, communitarian social interest, are

necessary elements of the construct in order to move us toward Adler's "ideal society... which comprises all men" (Adler, 1979a, p. 40).

Hence the good life, as conceived by Adler and as pertains to today's postmodern world, could be said to "incorporate both a distinctively modern stress on individual freedom and creativity and an emphasis on a profound sort of social connectedness and wider purpose" (Richardson & Manaster, 2003, p. 125).

Attempts to measure social interest highlight the complexity of the concept. Myriad definitions and interpretations of how social interest translates to behavior have led to the development of very different measurement scales. A recent meta-analysis showed that the correlation between the pairs of scales ranged only from .08 to .22 (Bass, et al., 2002), indicating that the scales are measuring different aspects of social interest.

Curlette, Kern & Wheeler's 1993 Basic Adlerian Scales for Interpersonal Success-Adult Form inventory (BASIS-A) is a 65-item five-point Likert scale that assesses an individual's lifestyle by responding to items that begin with the phrase, "When I was a child, I...." The purpose of the inventory "is to help understand an individual's life-style, based on beliefs developed in early childhood and related to present functioning" (Curlette, et al., 1996, p. 95). While this method of asking subjects for early recollections based on their memory of childhood is consistent with Adlerian counseling theory, it is not consistent with the theoretical approach outlined for this study. That is, this study will measure an adult's current level of social interest. Because social interest is considered an innate potential that develops over time and through experience, it is possible that an older adult's social interest level will be different than that of the same person as a child.

Sulliman's 1973 Scale of Social Interest (SSSI) uses a 50-item true-false scale to measure sense of belonging, communion, cooperation, equality, courage, optimism,

confidence, and striving for an ideal society (Manaster, et al, 2003). Greever, Tseng and Friedland's 1973 Social Interest Index (SII) asks subjects to rate 32 items using a five-point Likert scale to indicate how much an item is similar to them, ranging from "not at all like me" to "very much like me." The items are divided into sub-scales reflecting Adler's life tasks of friendship, love, and work and a fourth task of self-significance. The items are meaningful to only a narrow range of the population as indicated by responses in a recent pilot study (Knill, 2005) by subjects over the age of 65 who noted that items such as "I find dating frustrating" and "I am looking forward to getting married" do not apply to their situation. Crandall's 1981 Social Interest Scale (SIS) measures "interest in and concern for others" (Crandall, 1981, p. 23). It is comprised of 24 pairs of items that describe traits related to cognition, affect and behavior.

The low correlations among the scales, the divergent purposes of the four scales, and recent discussions of communitarian social interest indicate that no single instrument measures all aspects of social interest. Although the SIS has the lowest mean effect size of the social interest scales, it is the scale most often used by scholars (Bass, et al., 2002). Therefore, I have chosen to use Crandall's Social Interest Scale (SIS) to test the relationship of social interest to Erikson's concept of generativity. Because there is considerable overlap between Adler's and Erikson's theoretical concepts, it is expected that a significant correlation will be found at the .05 level, as was found in Knill's 2005 pilot study ($r = 0.736, p < .05$).

GENERATIVITY

Erikson first presented his epigenetic theory of psychosocial development in the 1950 publication of *Childhood and Society*. He conceived of the development of the individual as encompassing eight dynamic crises of (1) basic trust versus mistrust (2) autonomy versus shame, (3) initiative versus guilt, (4) industry versus inferiority,

(5) identity versus role confusion, (6) intimacy versus isolation, (7) generativity versus stagnation, (8) ego integrity versus despair. In this earliest work he emphasized the dynamic relationship between the individual and the environment, briefly discussed the transition process between the stages of development, and noted that each stage requires reassessing prior stages. He also briefly outlined the seventh stage of generativity, describing it as “the concern in establishing and guiding the next generation” (Erikson, 1963, p. 167).

In the 1986 publication, *Vital Involvement in Old Age*, Erikson, Erikson and Kivnick elaborated on several important themes of Erikson’s original diagram of the eight stages of development (see Table 1). Erikson et al. (1986) stated that each stage is not a dominance of one element of a crisis over another but is a working balance between the syntonic (attuned to, responsive to the environment) and dystonic predispositions that together create a “fruitful opposition” that leads to the establishment of values in each stage. These values are: (1) hope, (2) strength of will, (3) purpose, (4) competence, (5) fidelity, (6) love, (7) care, and (8) wisdom. For example, in the first stage, trust can exist “positively only in juxtaposition with a ‘sensible’ mistrust— also necessary for existence. Only out of a creative balancing of these two tendencies can hope develop” (Erikson, et al., 1986, p. 38). With generativity, it is the creative balancing of generativity and stagnation that lead to the value of care. That is, “this vital strength of care is the widening concern for what has been generated by love, necessity, or accident; it overcomes the ambivalence arising with irreversible obligation. Thus, care attends to the needs of all that has been generated” (Erikson, et al., 1986, p. 37). In this stage, generativity expands from sexual procreativity to combinations of productivity and creativity that “assure the vitality of an order of care to those wide areas of adult

involvements which, according to a Hindu expression, guarantee the ‘maintenance of the world’” (Erikson, et al., 1986, p. 50).

Table 1. The Eight Psychosocial Stages of Development

	Maladaptive Tendency	Dynamic Balance	VALUE / Adaptive Strength	Dynamic Balance	Malignant Tendency
I.	Sensory Maladjustment	Trust	HOPE	Mistrust	Withdrawal
II.	Shameless willfulness	Autonomy	WILL	Shame/Doubt	Compulsion
III.	Ruthlessness	Initiative	PURPOSE	Guilt	Inhibition
IV.	Narrow virtuosity	Industriousness	COMPETENCE	Inferiority	Inertia
V.	Fanaticism	Identity Cohesion	FIDELITY	Role Confusion	Repudiation
VI.	Promiscuity	Intimacy	LOVE	Isolation	Exclusivity
VII.	Overextension	Generativity	CARE	Stagnation	Rejectivity
VIII.	Presumption	Integrity	WISDOM	Despair	Disdain

(Erikson, et al., 1986, p. 45)

While his earlier publications also noted the presence of each stage in every phase of development, in this publication, Erikson et al. emphasized that the current stage anticipates the next stage and that all stages are renegotiated as the individual integrates his understanding of the previous stages into the current crisis. That is, “at each successive stage, earlier conflicts must be reresolved in relation to the current level of development” (Erikson et al., 1986, p. 40). Therefore, “age-appropriate balancing of earlier psychosocial tensions” (p. 40) is helpful to negotiating the current stage of development, while, through the renegotiation of prior stages, the individual has the opportunity to review his life and re-synthesize previously unbalanced developmental crises. Throughout this development, the quality of relationships experienced “produce[s] the strengths necessary for a mutual involvement in an ever-increasing social

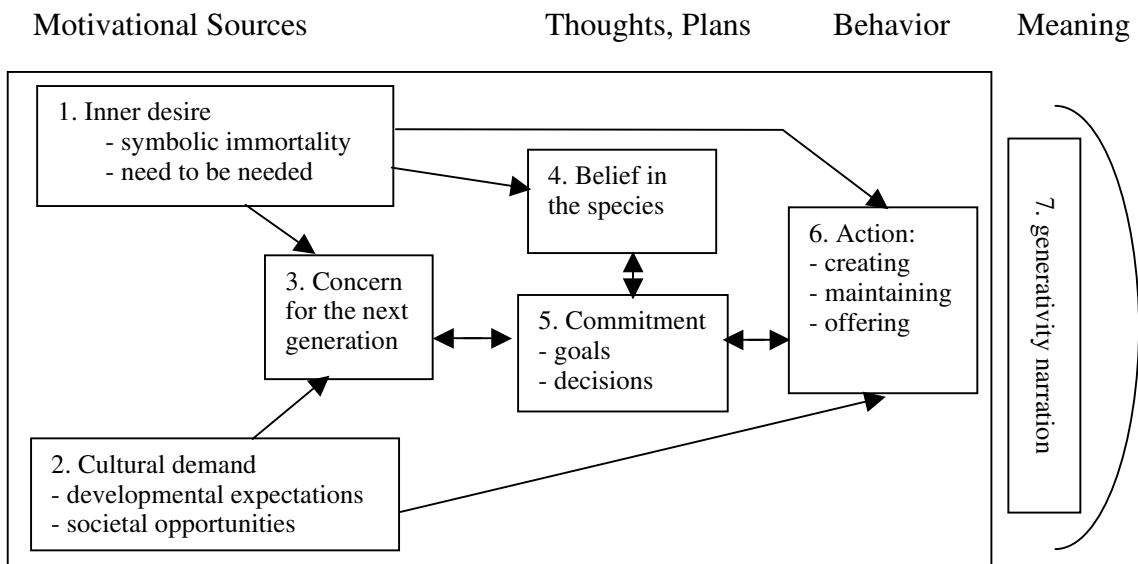
radius, from infancy through adulthood and into old age” (p. 33). The ever-present nature of all eight stages combined with the social embeddedness of the theory serve to create a richly-textured view of adult personality development.

As with social interest, examination of the scales used to measure generativity contribute to understanding the concept. Three instruments measuring generativity have seen extensive testing in the last decade (Bradley, 1997; McAdams & de St. Aubin, 1992; Peterson & Klohnen, 1995). McAdams and de St. Aubin propose a model (1992) that describes generativity as comprised of seven factors: the motivational sources of cultural demand and inner desire, thoughts of generative concern and belief in the species, plans exemplified in commitment to goals and decisions, and actions of creating, maintaining or offering are all encompassed in a framework of meaning created by a generative narrative (see Figure 1). Peterson and Klohnen add generative realization to the McAdams and de St. Aubin model (Peterson & Klohnen, 1995). Bradley’s five-factor model (1997) conceives of generativity as a matrix of processes that informs an individual’s style of generative expression. These processes are characterized by generative, agentic, communal, conventional and stagnant orientations that differ along two continua of involvement and inclusivity (Bradley, 1997; Bradley & Marcia, 1998).

In the McAdams and de St. Aubin seven-factor model, both internal and external forces are at the heart of the motivational forces. The “inner desires” are grounded in Bakan’s (1966) two fundamental motivational drives: communion and agency, both of which are necessary to accomplish generative acts (McAdams & de St. Aubin, 1992). Communion, or a sense of caring for others, is necessary to conceive of a generative behavior, and agency is the drive to perform the behavior (Bradley, 1997; McAdams, Hart & Maruna, 1998). The external motivational force is “cultural demand,” or the

societal and cultural forces that help shape expected behaviors at certain times in the life-cycle.

Figure 1. Seven features of generativity



(McAdams & de St. Aubin, 1992, p. 1005)

These internal and external motivational sources can produce a “conscious concern” for the next generation which may lead to a generative commitment to act. This commitment may or may not be reinforced by an ideological “belief in the species” (McAdams, Hart & Maruna, 1998, p. 9). This commitment leads to generative action in the form of creating, maintaining or offering. However, this model is not necessarily linear in function. Inner desire or cultural demand may be sufficient in themselves to lead to generative behavior and the intervening factors of generative concern, belief and commitment are not necessary to produce generative behavior. McAdams and de St. Aubin (1992) also propose that generativity arises within the context of an ongoing identity narrative that gives meaning to the process. This narrative is continually revised to incorporate perceptions of one’s past, present and anticipated future. The narrative, or “generativity script” (McAdams & de St. Aubin, 1992, p. 1006), also influences an

individual's motivations, commitments and behaviors. By incorporating the generativity script into their model, McAdams and de St. Aubin underscore Erikson's assertion that identity is renegotiated at all stages of life. McAdams et al. (1998) further suggest that "identity development is the major psychosocial issue for the preponderance of one's adult life and that generativity is incorporated within it as one of many different and important aspects" (p. 12).

To test this model, McAdams and de St. Aubin (1992) developed three measurement instruments: the Loyola Generativity Scale (LGS), a 20-item self-report measure of generative concern; a behavior checklist; and the generative narrative. In 1992, McAdams and de St. Aubin conducted two studies of generativity using the LGS: one among college students and one among adults. They found that generativity among college-aged women was high, and was significantly different from the generativity scores of college-aged men. But they found no significant difference between generativity scores of men and women beyond college age. They found that having children predicted high generativity scores among men, and not having children predicted low generativity scores for men, but that child-bearing predicted no difference in women's generativity scores. As a result of these findings, McAdams and de St. Aubin "reject the concept of a cleanly demarcated stage of the life span devoted exclusively to generativity" (p. 1004). However, they acknowledge that it makes sense to "situate" generativity in the adult years because society "demands ...that adults take responsibility for the next generation, in their roles as parents, teachers, mentors, leaders, organizers, 'creative ritualizers' and 'keepers of meaning'" (McAdams & de St. Aubin, 1992, p. 1004).

A later study by McAdams, de St. Aubin and Logan (1993) resulted in more ambiguous results concerning the linear stage progression of generativity in midlife. This

study specifically investigated the question of the sequential nature of generativity and its placement at a particular chronological age. The study examined three cohorts divided roughly equally between gender: young (ages 22-27), midlife (ages 37-42) and old (ages 67-72). They followed up six months later with a telephone re-test of two-thirds of the study participants. Their findings revealed that, overall, midlife adults differed significantly in generativity from younger adults, but did not differ from older adults. The authors therefore found an increase in generativity from young adulthood to middle adulthood, but they found no significant decrease in generativity from middle adulthood to older adulthood. The authors acknowledged various problems with the study, including the cultural tendency among Americans to view midlife as later than ages 37-42 and old age as later than 68-72. To test whether generativity really is a developmental task exclusively experienced by those in midlife, the authors recommended increasing the age for these cohorts (McAdams, de St. Aubin, & Logan, 1993).

In 1995, Peterson and Klohnen proposed generative realization as an eighth dimension to the McAdams and de St. Aubin model. These authors asserted that the McAdams and de St. Aubin model only measures the extent to which an individual is concerned with issues of generativity, whereas a generative realization model would measure “the extent to which individuals have actually expressed generativity in their lives” (Peterson & Klohnen, 1995, p. 21). Peterson and Klohnen explored several factors that they say are an important aspect to generative realization. These factors include personality characteristics, work productivity, parental involvement, and an “expanding radius of care” (Peterson & Klohnen, 1995, p. 22).

Bradley’s five-factor model (1997) seeks to expand the operationalization of generativity from a linear continuum from stagnation to generativity to a model that describes “styles of generativity expression” (Bradley, 1997, p. 278). The model consists

of five style orientations: generative, agentic, communal, conventional, and stagnant. These can differ on two criteria: involvement and inclusivity (Bradley, 1997; Bradley & Marcia, 1998). These two criteria are further differentiated between self and others (see Figure 2).

Figure 2. Generativity Status Model

	Involvement		Inclusivity	
	Self	Others	Self	Others
Generative	High	High	High	High
Agentic	High	Low	High	Low
Communal	Low	High	Low	High
Conventional	High	High	Low	Low
Stagnant	Low	Low	Low (or laissez-faire)	Low (or laissez-faire)

(Bradley, 1997, p. 281)

Involvement reflects the theoretical basis of generativity as “an active, prosocial commitment to the care of others and one’s own productive efforts” (Bradley, 1997, p. 279). It also “reflects the degree of active concern for the growth of oneself and others, a sense of responsibility for sharing skills and knowledge, and the ability to follow through with commitments” (Bradley, 1997, p. 279). Inclusivity reflects Erikson’s concern with the quality of generative behavior, that is, that “a mature ego [is] capable of ‘greater tolerance of tension and diversity’” (Bradley, 1997, p. 279). According to Erikson, those who are not generative display rejectivity, or the antithesis of care (Erikson, 1978). As Bradley (1997) indicates, Erikson defines rejectivity as “an ‘unwillingness to include specific persons or groups in one’s generative concern – one does not care to care for them’” (Bradley, 1997, p. 279).

The five styles or orientations differ depending on an individual’s placement on the continua of high to low in involvement and inclusivity for self and for others. The generative individual is high in involvement in self and others and is also high in

inclusivity of self and others. An agentic orientation indicates one who is “high in inclusivity and involvement for the self, but not for others” (Bradley, 1997, p. 281). A communal orientation indicates a stronger sense of inclusion and involvement for others than for the self. Bradley uses the concepts of agency and communion differently than McAdams and de St. Aubin. Bradley theorizes that agency and communion are intermediate styles of generative expression rather than motivational sources necessary to accomplish generative action. The stagnant individual is low in all categories. However, the low status on inclusivity may refer to a laissez-faire attitude, one in which the person is indifferent to others (Bradley, 1997; Bradley & Marcia, 1998).

Bradley adds a further distinction by including a “conventional” style. Like the generative style, the conventional orientation is high in involvement for self and others. Unlike generativity, however, the conventional orientation is low in inclusion. Typically, the conventional orientation would describe someone who has a high, generative concern and involvement with self and others, but only certain others (Bradley, 1997). That is, in the conventional orientation, there does not exist tolerance for all others and therefore inclusion of all others in generative concern.

Bradley’s five-factor model operationalizes the theoretical complexity of Erikson’s concept, while remaining sensitive to the dynamic nature of development. The model is sensitive to the idea that generativity can ebb and flow with context, such as work, family, community and self and with unique situations. This model also has a strong theoretical relationship to social interest. It offers a differentiation of generative expression between self and other and is also sensitive to the inclusion of outgroups. In these ways, the generativity status model can provide additional information to social interest scales of measurement concerning the interpersonal aspect of social interest and its broader translation of community feeling.

Unlike social interest, the generativity scales share a high intercorrelation. (Bradley & Marcia, 1998; Peterson & Klohnen, 1995). They differ in their methods of administration and in the level of self-report and interview techniques. They also differ slightly in theoretical interpretation of the concept of generativity. While the Generativity Status Measurement (GSM, Bradley & Marcia, 1998) appears to closely reflect the theoretical process of social interest, it is a costly scale to implement because it requires face-to-face interviews, transcription and interviewer coding and scoring of the transcripts. Because all the scales share a high intercorrelation, this study will use the LGS (McAdams & de St. Aubin, 1992) to measure generative concern. Together with the SIS measuring “interest in and concern for others” (Crandall, 1981, p. 23), this study will test the correlation between the two constructs of generativity and social interest. Using the LGS and the SIS will allow for paper and pencil self-report measurements that are less costly than interviews.

COMPARING SOCIAL INTEREST AND GENERATIVITY

The ideas in Erikson’s psychosocial theory, and particularly the seventh stage of generativity, echo many of the concepts underpinning Adler’s Individual Psychology. To both theorists, the individual is whole and unique. Adler finds the human being “to be a unity … in his thinking, feeling, acting; … in every expression of his personality” (Adler, 1979b, p. 69) and his theory “accepts the viewpoint of the complete unity and self-consistency of the individual whom it regards and examines as socially embedded” (Ansbacher & Ansbacher, 1956 p. 126). For Erikson, “man’s existence becomes and remains continuous in time and organized in form” (Erikson, 1968, p. 73).

Both Adler and Erikson see the individual creatively and dynamically constituting the self within a framework of environmental, societal and cultural conditions interacting with the individual. Both theories discuss personality development as a process of

resolving inner and outer conflicts (Ansbacher & Ansbacher, 1956; Erikson, 1978). They see these conflicts as engendered by an individual's association with society. Adler's concept of striving for superiority is based in the idea that a person's inferiority feeling "has grown from the individual's relationship to his environment" (Ansbacher & Ansbacher, 1956, p. 119). "Such problems can be solved only with sufficient social interest" (Adler, 1991, p. 18). Erikson noted, "Each successive stage and crisis has a special relation to one of the basic elements of society, and this for the simple reason that the human life cycle and man's institutions have evolved together" (Erikson, 1963, p. 250). In addition, each crisis would optimally "produce the strengths necessary for a mutual involvement in an ever-increasing social radius, from infancy through adulthood and into old age" (Erikson, et al., 1986, p. 33).

Both social interest and generativity are multi-dimensional constructs that develop over time. Manaster et al. (2003) describe the development of social interest from the innate aptitude for "cooperation and social living" (p. 111), to active cooperation, contribution, and empathizing with others, and arriving at an "evaluative attitude on which choices are made and living occurs" (p. 111). It is in this latter evaluation that communitarian social interest resides, as a "meaning before" (Manaster et al., 2003, p. 113), or a "precondition" (Ansbacher, 1992, p. 405) that is the "horizon of humanity" (Manaster et al., 2003, p. 113) through which the individual lives and makes his choices. Erikson's generativity is the stage in which the individual's "expanding radius of care" extends from family to mankind.

Both theories have suppositions of agency and communion as described by Bakan (1966). Ansbacher (1992) drew a distinction between social interest and community feeling by referring to community feeling as a "somewhat inactive state of mind" (p. 404), and social interest as "motivating, activating, [and] guiding behavior" (p. 404).

McAdams and de St. Aubin (1992) describe the communal aspect of generativity as the area of generative concern out of which may originate generative action, and agency as the drive that creates the action.

Both theories have as their goal the development of the mentally healthy individual. Adler considered social interest as crucial to mental health, calling it the “barometer of normality” (Ansbacher & Ansbacher, 1956, p. 154). Erikson described mental health as the “vital personality” that “actively masters his environment, shows a certain unity of personality, and is able to perceive the world and himself correctly” (Erikson, 1968, p. 92).

Adler and Erikson shared a metaphysical notion of the transcendent self as a contributor to the communal good as well as to the individual’s mental health. Adler “equated community feeling with ‘being in harmony with the universe’” (Ansbacher, 1992, p. 403). For Adler, the

criterion for appraising a specific variant, whether a given individual or group, is always the direction towards the ascending development and welfare of mankind. In other words, it is the degree and kind of social interest necessary to arrive at this goal of general welfare and upward development (Adler, 1991, p. 18).

Adler also said, “Community feeling is actually a cosmic feeling, a reflection of the coherence of everything cosmic that lives in us... and which gives us the ability to empathize with things which lie outside our body” (Ansbacher, 1992, p. 403). This communitarian social interest, or community feeling, “means to identify with the miraculous phenomenon of life that was there long before one existed and will continue long after one is gone” (Ansbacher, 1992, p. 408). Ansbacher (1992) refers to a Bertrand Russell quote to summarize the meaning of the self-transcendent aspect of social interest:

The happy man is the man... whose personality is neither divided against itself nor pitted against the world. Such a man feels himself a citizen of the universe, enjoying freely the spectacle that it offers and the joys it affords, untroubled by the thought of death because he feels himself not really separate from those who

will come after him. It is in such profound instinctive union with the stream of life that the greatest joy is to be found (p. 408).

One must look to Erikson's eighth stage of development, integrity versus despair, to find the analogous notion to Adler's self-transcendent, communitarian social interest. Erikson et al. (1986) described the eighth stage as "detached concern with life itself, in the face of death itself" (p. 37), a "truly involved disinvolvement" (p. 51). In describing the level of awareness needed for such development, Erikson et al. turn to the idea of a sense of self that is transcendent, that is a "spiritual personality, which suggests an existential identity" (p. 52). This "existential identity" has a "once-for-all chance of transcending time-bound identities and sensing, if only in the simplest terms, an all-human and existential identity like that which the world religions and ideologies have attempted to create" (p. 53). "All-human" in this instance means an identification with a shared humanity, what Adler referred to as "the connectedness of man to man in a cosmic relationship" (Ansbacher, 1992, p. 404).

The focus of these theories on the importance of social interest and generativity to the progress of society and humankind is exemplified in Manaster's expression of social interest as "tikkun olam," the Jewish expression for repairing the world (Manaster, 2004), and Erikson's assertion that generativity can be equated with the Hindu expression, "maintenance of the world" (Erikson, et al., 1986, p. 50). Thus social interest and generativity are elements at the heart of individual mental health and community development and progress.

Because Erikson's theory shares many important characteristics with Adler's concept of social interest, the work that helped define and measure generativity can offer direction to Adlerians in the growing search for a consensus in defining and measuring social interest (Bass, et al., 2002; Manaster, et al., 2003; Peven, 2004) and in applying

Adlerian theory to older adults, an area of study that is neglected at this time (Ansbacher, 1992; Peven, 2004; Sperry, 2003). From the perspective of the individual, practical application of counseling theory and psychological development will be crucial to understanding and helping the older adult continue to develop in a mentally healthy direction. From the societal perspective, these two theories offer psychology a framework through which the field can promote a dialogue that will move us in a direction away from the narrow focus on the enhancement of the self toward a cooperative and authentic interaction with others concerning the values that drive our actions and shape our future.

LIFE SATISFACTION

In 1961, Havighurst examined the assumptions underlying the two prevailing theories of successful aging at that time – activity theory and disengagement theory. He found that neither theory accounted for an individual's subjective standards for aging well. Instead, Havighurst proposed that measuring life satisfaction as an “inner” assessment was a better measure of successful aging. Such a measure would accommodate individual differences in conceptions and values of growing older. Specifically, the individual whose personality most values an active life style could be as satisfied with his life as one who is more passive. Havighurst stated, “This method assumes that a person who is aging successfully feels satisfaction with his present and his past life and asks him as skillfully as possible to report on his feelings about his life.... It simply asks him how he feels about himself” (p. 10). Havighurst proposed a measurement scale consisting of five components: (1) zest vs. apathy, (2) resolution and fortitude, (3) goodness of fit between desired and achieved goals, (4) positive self-concept and (5) mood tone.

Diener (1984) identified life satisfaction as the component of subjective well-being related to cognitive judgment, with the other two components related to emotion and identified as positive and negative affect. Diener described life satisfaction as the cognitive element of subjective well-being, defining it as “a global assessment of a person’s quality of life according to his chosen criteria” (Diener, Emmons, Larsen & Griffin 1985, p. 71). This judgment is subjective in that it is “based on a comparison with a standard which each individual sets for him or herself; it is not externally imposed” (Diener, et al., 1985, p. 71). Such a judgment is global, that is, it is an overall sense of “satisfaction with life as a whole” (Diener, et al., 1985, p. 71). As such, the assessment is independent of daily emotional affect and mood and it concerns satisfaction with life in both the past and the present. While gerontological researchers have proposed several life satisfaction scales (Diener, et al., 1985; George, 1981; Havighurst, 1961), some scales do not distinguish the daily affect component of well-being from the global life satisfaction component (Diener, et al., 1985; Havighurst, 1961) and others present a summative score derived from measuring distinct domains, such as autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance (Ryff, 1995) or satisfaction with marriage, finances, and parental role (Nesse, et al., 2002). In addition, the use of different scales in research makes it difficult to systematically uncover the elements that contribute to life satisfaction.

Research indicates that the demographic variables of age, income, education and race account for only ten to fifteen percent of the variance in subjective well-being, and that self-rated health is moderately, yet significantly, correlated with well-being (Diener, 1984). However, Diener questioned the assumption that good health contributes to life satisfaction, suggesting that studies should explore the causal direction of health and life satisfaction. He noted that studies usually assume a direct correlation between external

variables and subjective well-being without “any mediation by conscious subjective satisfaction” (p. 553). Diener proposed that subjective domain satisfactions, including self-rated health, would “derive from, rather than cause, overall subjective well-being” (p. 553). His concern is exploring the outcomes attributable to subjective well-being and life satisfaction.

The statements of lay persons shed some light on factors that contribute to life satisfaction. Carol Ryff (1989) explored the parameters of positive psychological functioning in middle aged and older adults. She speculated that researchers’ definitions of successful aging, life satisfaction and subjective well-being did not take into account variables that subjects considered important to the aging process. Using 171 participants divided into two sample groups of middle aged ($M = 52.5$ years, $SD = 8.7$) and older men and women ($M = 73.5$ years, $SD = 6.1$), Ryff conducted a qualitative and quantitative study that examined present-day “life evaluations, past life experiences, conceptions of well-being, and views on the aging process” (p. 195). Through interview questions, Ryff concluded that subjects considered successful aging and subjective well-being involved relationships with others and being a caring and compassionate person. She also concluded that individuals were concerned with their development, noting that accepting change was a crucial aspect of successful aging.

Only four studies have explored the relationship between social interest and global life satisfaction (Crandall & Kytonen, 1980; Crandall & Putnam, 1980; Rodd, 1994; Sholten, 1995). Two of the four studies concerned adolescents and neither found a significant correlation between social interest and life satisfaction (Crandall & Kytonen, 1980; Sholten, 1995). Two studies explored correlations between levels of social interest and global life satisfaction in adults (Crandall & Putnam, 1980; Rodd, 1994). The mean age of subjects in the Crandall & Putnam study was 35.76, with a standard deviation of

10.63. Participants in Rodd's study ranged from 30 to 34 years of age. Both studies found significant correlations between social interest and global life satisfaction. While not specifically testing the relationship of social interest and life satisfaction, Lapierre, et al. (1997) found that goals focusing on self-preservation correlated with dissatisfaction with life and interest in self-development while interest in the well-being of others was associated with life satisfaction (cited in Landau & Litwin, 2001).

A search for studies examining the association between generativity and life satisfaction revealed over 30 articles and dissertations. All articles found significant correlations between generativity and life satisfaction. Grossbaum and Bates (2003) conducted regression analyses that found that generativity predicted life satisfaction.

SELF-RATED HEALTH

In 2004, the World Health Organization defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 2004). Operative definitions of health can range from restrictive to inclusive. These definitions can be based on narrow biomedical criteria, as defined by the presence or absence of disease; on functioning, as measured by activities of daily living; on health behaviors such as eating and exercise habits; on the ability to engage in social activities; and on psychological, emotional or spiritual criteria (Hwu, Coates, & Boore, 2001; Idler, Hudson, & Leventhal, 1999). The global self-rating of health measure, a single-item that asks subjects to rate their overall health as excellent, very good, good, fair or poor, is widely used in national studies and is strongly correlated with morbidity and mortality risk, despite the fact that research shows that a broad range of definitions of health inform this subjective rating (Borwaski, Kinney & Kahana, 1996; Idler, Hudson & Leventhal, 1999; Krause & Jay, 1994; Siegler, Bosworth, & Poon, 2003).

Studies in the fields of medicine, psychology, sociology and epidemiology have established that self-rated health predicts mortality risk among older adults, with good and excellent self-ratings of health positively correlated with living longer (Idler, 1999; Lee, 2000). These studies have controlled for “potential confounds such as demographic and socioeconomic factors, physical health status, functional health status, family health history, health behaviors, drug use, and psychological factors” (Borawski, Kinney, & Kahana, 1996, p. S157). In a 1999 study, Strawbridge & Wallhagen tested the impact of self-rated health assessments on mortality risk over a 28-year period. They measured changes in health assessments, disease burden and health behaviors, such as smoking cessation. They also adjusted for possible effects due to age, gender, marital status, ethnicity (black or non-black), education, chronic conditions, mobility impairment and health risk factors. With a sample of 5,976, they found “a statistically significant and meaningfully elevated risk of mortality for those reporting fair or poor health even when a number of disease and other health risk factors were taken into account over a long period of time” (Strawbridge & Wallhagen, 1999, p. 412).

Along with strong evidence for the predictive value of self-rated health, and its relative ease of administration, the measure has broad appeal because of the flexibility with which respondents can define their health, allowing the respondent to use “criteria that are as broad and inclusive as [he] chooses to make them” (Siegler, et al., 2003, p. 431). Idler, Hudson and Leventhal (1999) found that those who rate their health based on a narrow biomedical definition generally underestimate their health relative to their actual medical histories, while broader definitions are related to relatively better self-ratings.

The authors suggest that

broader and more inclusive definitions of what ‘health’ is allow respondents to be more versatile in their depiction of their own health; expansive definitions allow individuals to take more things into account when considering their well-being.

The implication of the authors' finding is that when individuals apply a broad definition of health, they draw on social, psychological, and even spiritual resources that moderate the impact of poor physical health on self-ratings (p. 473).

In their longitudinal analysis, Strawbridge and Wallhagen (1999) found that “[d]isease burden by no means explained all or even most of the relationship between self-rated health and mortality” (p. 412). Strawbridge and Wallhagen concluded that “subjects are integrating a wide variety of information about their total condition – physical and psychosocial – into a global assessment of where they stand in terms of health” (p. 413). They question whether researchers have accurately identified the multiple components of self-rated health. Idler and Benyamin (1997) concluded that “[g]lobal self-ratings, which assess a currently unknown array of perceptions and weight them according to equally unknown and varying values and preferences, provide the respondents' view of global health status in a way that nothing else can” (p. 34).

Bjorner, et al. (1996) assert that the self-rating of health measure is a valid goal for psychosocial intervention studies. In addition to being a good indicator of health, it is also a valid indicator of psychological well-being. One study by Azarow (2003) indicated that generative concern was moderately associated with self-rated health. There are no studies exploring the relationship between social interest and self-rated health, but studies of social interest and physical health are based on the assumption that Adler's theoretical implications for adjustment describe an individual's coping style and therefore mediate the effects of stress on health (Kern, Gfroerer, Summers, & Curlette, 1996). While no studies of social interest and self-rated health could be found, one study (Zarski, Bubenzer and West, 1986) found that social interest significantly predicted health, as measured by a checklist of health-related items, while another study found that goals of

older adults that focused on self-preservation predicted poor subjective health ratings (Lapierre, et al., 1997).

STATEMENT OF THE PROBLEM

Qualitative and quantitative research has shown that while personality traits remain stable over a lifetime, there are developmental changes that occur during adulthood (Atchley, 1982; Neugarten, Havighurst, & Tobin, 1968; Ryff, 1989). Social interest and generativity are similar in their focus on the values of caring for others and contributing to the good of the larger community. The assumption in the theoretical and empirical literature is that an individual who develops in a manner consistent with these theories will experience both mental and physical well-being. But the theoretical similarities between the two theories have never been tested empirically. In addition, the causal relationship between life satisfaction and self-rated health, important indicators of successful aging, has not been tested.

This study seeks (1) to advance the recent theoretical work exploring the meaning of social interest and its importance to gerontological research through empirically testing its association with generativity; and (2) to determine the extent to which social interest and generativity predict good or excellent self-ratings of health through the mediation variable of life satisfaction. Because no one has studied the causal relationship between life satisfaction and self-rated health, a third question reverses the causal direction of the second question: to what extent do social interest and generativity predict life satisfaction, as mediated by self-rated health?

Statement of Research Questions and Hypotheses

Question 1. Are social interest and generativity similar concepts in the sample population?

Hypothesis 1. It is hypothesized that individuals' social interest scores will correlate positively and significantly with generativity scores.

Rationale for Hypothesis 1. The theoretical explication of Adler's and Erikson's theories shows many points of intersection and similarity. Unlike generativity, little research exploring the usefulness of existing social interest measures for the population of older adults has occurred and therefore the concept remains poorly understood as a meaningful variable in empirical research on aging. It should be noted that the purpose of this question is to assess the strength of association between social interest and generativity. No causal relationship should be inferred.

Question 2. Do social interest and generativity predict self-rated health through their effects on life satisfaction?

Hypothesis 2a. Social interest and generativity predict life satisfaction.

Rationale for Hypothesis 2a. Life satisfaction is a subjective assessment indicating positive psychological functioning and, as an element crucial to subjective well-being is a generally accepted goal of successful aging. Social interest and generativity are elements crucial to mental health. It would seem reasonable that levels of social interest and generativity predict corresponding levels of life satisfaction.

Hypothesis 2b. Social interest and generativity predict self-rated health.

Rationale for Hypothesis 2b. Research in self-rated health has shown that optimism and health-transcendence are elements contributing to good or excellent self-ratings of health (Borawski, Kinney, & Kahana, 1996; Van Doorn 1999). However, little research has been conducted testing the effects of social interest and generativity on self-

rated health. The theoretical analysis of social interest and generativity emphasize the role these ideas play in positive psychological functioning and self-transcendence, thereby indicating a relationship to good or excellent self-ratings of health.

Hypothesis 2c. Life satisfaction predicts self-rated health.

Rationale for Hypothesis 2c. Life satisfaction and self-rated health are subjectively determined ratings that are commonly understood to be goals of successful aging in both the psychological and health research communities. Because little correlation exists between subjective self-rated health and actual health status (Borawska, et al. 1996), researchers have begun studying psychological variables that contribute to these self-assessments and have determined that optimism or health-transcendence contribute to good or excellent self-ratings of health (Borawska, et al., 1996). While life satisfaction and self-rated health tend to be positively correlated, a review of recent study abstracts confirms Diener's 1984 assessment that little research has been done to assess the causal relationship between life satisfaction and self-rated health. Instead, researchers interested in psychological variables tend to look at the effect of depression, social support, and other variables on life satisfaction, while health researchers tend to look at the effect of disease factors on self-rated health and on life satisfaction (Murberg, Bru, Svebak, Aarsland, & Dickstein, 1997). Given the anticipated decline in objective health status for many older adults, and the strong correlation between self-rated health and mortality risk, this study proposes to examine the causal relationship between life satisfaction and self-rated health.

Hypothesis 2d. The direct effect of social interest and generativity on self-rated health (see Hypothesis 2b) will decrease toward zero as the effects of social interest and generativity on life satisfaction and life satisfaction on self-rated health are accounted for,

indicating that life satisfaction mediates the effects of social interest and generativity on self-rated health.

Rationale for Hypothesis 2d. While social interest and generativity have been shown to be positively correlated with life satisfaction and subjective well-being, it is not clear that a socially interested or generative adult will also subjectively rate their health as good or excellent. It is hypothesized that social interest and generativity predict self-rated health mainly through the extent to which social interest and generativity predict life satisfaction.

Question 3. Do social interest and generativity predict life satisfaction through their effects on self-rated health?

Hypothesis 3a. Social interest and generativity predict self-rated health (see Hypothesis 2b).

Hypothesis 3b. Social interest and generativity predict life satisfaction (see Hypothesis 2a).

Hypothesis 3c. Self-rated health predicts life satisfaction.

Rationale for Hypothesis 3c. When looking at the objective components of physical health, it stands to reason that those who rate their health as very good or excellent would also experience greater life satisfaction than those who experience poor health. Because no research supports either causal direction, that is, that life satisfaction predicts self-rated health or that self-rated health predicts life satisfaction, this study will examine both hypotheses.

Hypothesis 3d. The direct effect of social interest and generativity on life satisfaction (see Hypothesis 3b) will decrease toward zero as the effects of social interest and generativity on self-rated health and self-rated health on life satisfaction are

accounted for, indicating that self-rated health mediates the effects of social interest and generativity on life satisfaction.

Proposed path analyses

Questions 1, 2 and 3 can be expressed as path models, as shown in Figures 3 and 4. The one-way, straight arrows show the direct paths, or primary causal directions. The double-headed curved arrows indicate the associations. Path “h” represents Question 1, the hypothesized correlation between social interest (SIS) and generativity (LGS). Figure 3 suggests that an individual’s self-rated health (SRH) can be explained by his levels of social interest and generativity and that social interest and generativity indirectly influence self-rated health through their effects on life satisfaction (SWLS). In other words, through the likelihood that social interest and generativity increase a person’s satisfaction with life, it is hypothesized that this will also increase self-rated health.

Figure 4 describes the alternative hypothesis that self-rated health mediates the effect of social interest and generativity on life satisfaction. Structural equation modeling software provides the Akaike Information Criterion test of model fit (AIC) that allows for the comparison of such non-hierarchical models. The AIC values for each model will be compared to select the model most likely to replicate among nonhierarchical models using this sample population (Kline, 2005).

In order for goodness of fit indices to be meaningful, it is important to propose an over-identified model, or one in which the number of observations (computed as the number of variables times the number of variables plus 1, divided by 2) is greater than the number of parameter estimates. Therefore, two variables were added to the analysis: education level attained and informal social integration. In the Changing Lives of Older Couples study (Nesse, et al, 2002), researchers found a significant correlation between

Figure 3. Question 2. Path model estimating the predictive effects of Social Interest (SIS) and Generativity (LGS) on Self-Rated Health (SRH), as mediated by Life Satisfaction.

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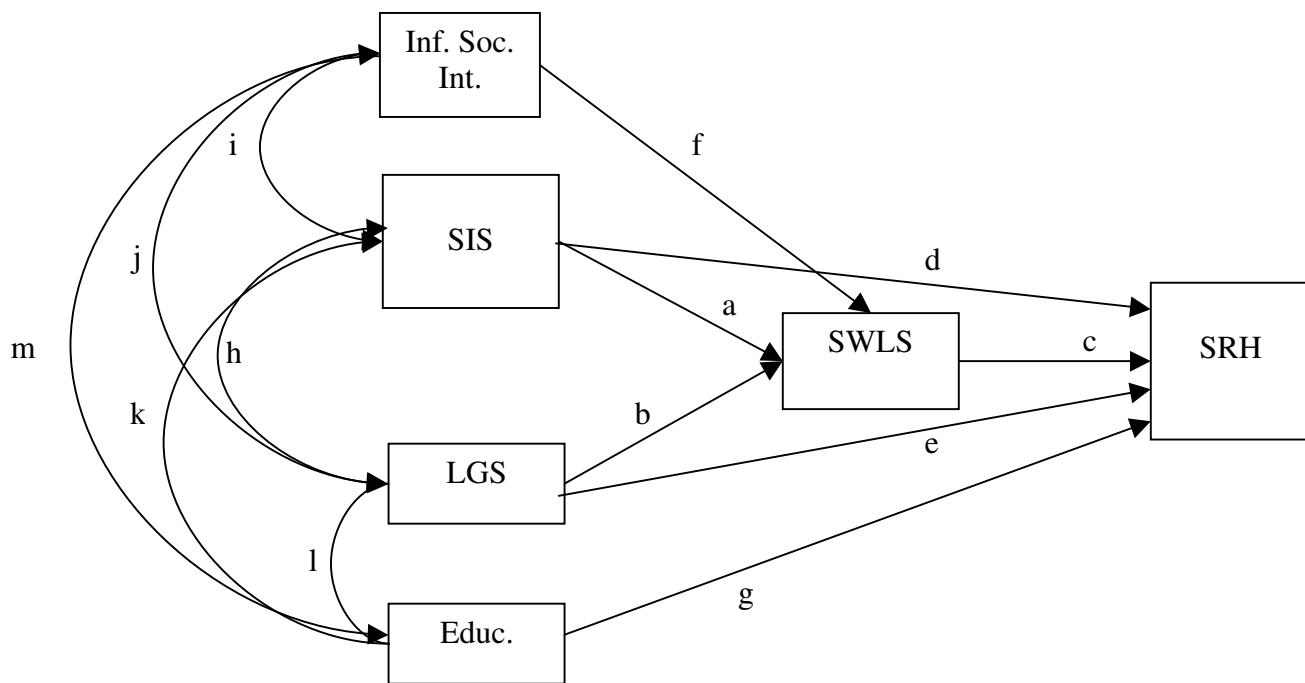
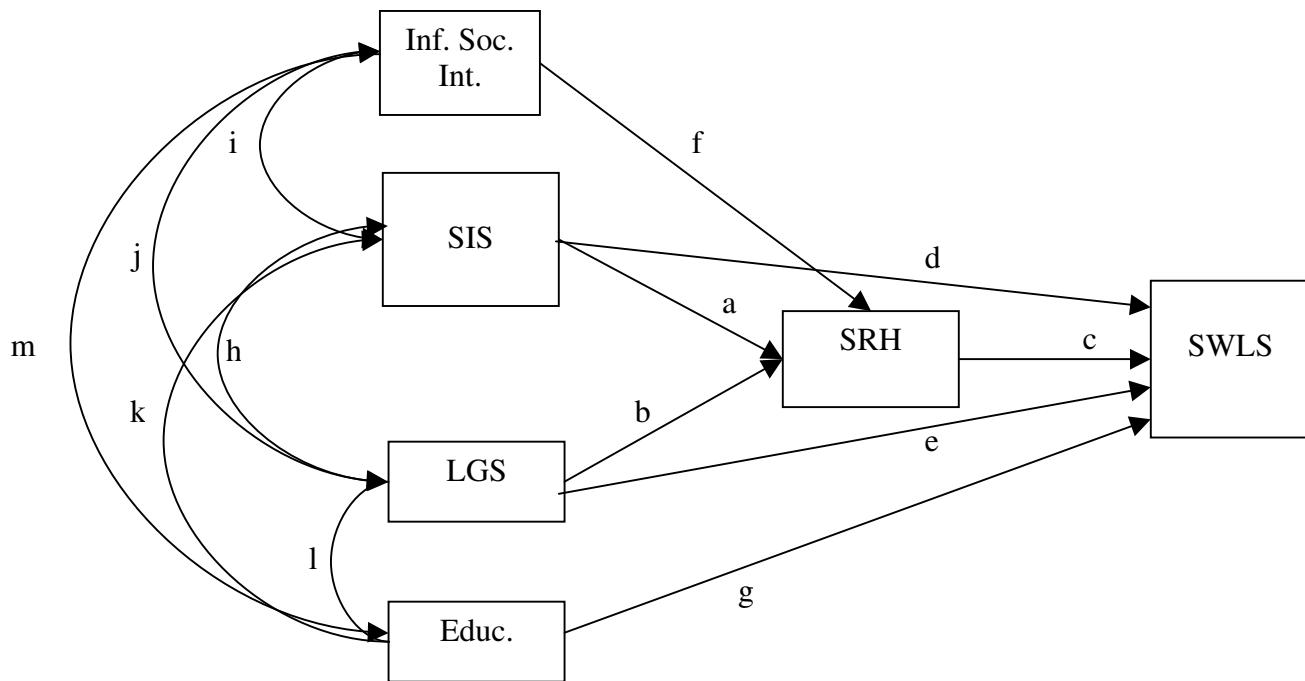


Figure 4. Question 3. Path model estimating the predictive effects of Social Interest (SIS) and Generativity (LGS) on Life Satisfaction (SWLS), as mediated by Self-Rated Health (SRH).



education level and self-rated health, but not between education level and life satisfaction. The study found the opposite for informal social integration, that is, a significant correlation with life satisfaction, but not with self-rated health (see Table 2). Because the variables were correlated with one but not the other dependent variable, they were included here in order to create an overidentified model (number of observations in the model = 21, number of parameters to be estimated = 19), thereby allowing for a goodness of fit assessment of the two models.

Table 2. Bivariate correlations in Changing Lives of Older Couples survey

	1	2	3	4
1. Satisfaction with health	1.000			
2. Not satisfied with life	-.213(**)	1.000		
3. Informal Social Integration	.081	-.177(**)	1.000	
4. Education – Highest Year	.143(**)	-.029	.083	1.000

(Nesse, et al., 2002)

** Correlation is significant at the 0.01 level.

CHAPTER THREE

METHOD

PARTICIPANTS

This study employed a sample of 311 adults ranging in age from 60 to 96 years ($M = 75$, $SD = 7.5$). Participants included 88 men (mean age = 77, $SD = 7.0$) and 223 women (mean age = 74, $SD = 7.4$). The original study proposed a sample made up of adults aged 60 to 75, but researchers recommend a sample size of over 300 when using structural equation modeling techniques to perform path analyses (Kline, 2005). In addition, the number of men in the sample of aged 60 to 75 years was very low at $N = 38$, or 22 percent of that sample ($N = 173$). Increasing the age range to the full response set of 311 increased the participation of men to 28 percent ($N = 88$).

The sampling frame for this study was comprised of people whose names were included on a mailing list of an advocacy and resource center for seniors based in a southwestern urban area, and are representative of the individuals in this community over age 55 who avail themselves of the information and services offered by this organization. Complicating the generalizability of the sample was the fact that several respondents to the initial invitation noted that they did not know why their names had been added to the mailing list. Further questioning showed that the names were added to the mailing list when the recipients had enrolled in computer training offered by the organization.

The individuals who took part in the study were predominantly white, middle class and well-educated, with 70 percent earning over \$40,000 a year and 63 percent having earned a college degree or higher. The majority of the sample was married (55 percent), with 2.3 percent never having been married, 16.7 percent divorced and 26

percent widowed. Of the 81 participants who were widowed, 10 were men and 71 were women (see Table 3).

Table 3. Demographic data (N = 311)

	N = 311	Percent	Mean	St. Dev	Range
Age	311		74.77	7.458	60 – 96
Sex:					
Men	88	28.3			
Women	223	71.7			
Race					
White, non-Hispanic	291	93.6			
White, Hispanic	12	3.9			
Black, non-Hispanic	6	1.9			
Black, Hispanic	1	0.3			
American Indian	0	0.0			
Asian or Pacific Islander	1	0.3			
Other	0	0.0			
Marital Status					
Never married	7	2.3			
Married	171	55.0			
Divorced	52	16.7			
Widowed	81	26.0			
Education (Range 1 – 5)			2.96	1.111	1 – 5
High school or below (1)	26	8.4			
Some college (2)	89	28.6			
College degree (3)	99	31.8			
Master's degree (4)	66	21.2			
Advanced graduate degree (5)	31	10.0			
Income (Range 1 – 8)			3.57	1.723	1 – 8
Under \$20,000 (1)	23	7.4			
\$20,000-\$39,999 (2)	69	22.2			
\$40,000-\$59,999 (3)	77	24.8			
\$60,000-\$79,999 (4)	71	22.8			
\$80,000-\$99,000 (5)	30	9.6			
\$100,000-\$119,000 (6)	20	6.4			
\$120,000-\$139,000 (7)	4	1.3			
over \$140,000 (8)	17	5.5			

PROCEDURE

Data Collection

Data were collected in the summer of 2005. Permission to use the mailing list was obtained from the executive director of the advocacy and resource group during the early summer. After the University's Institutional Review Board for Research on Human Subjects gave permission for the study, invitations to participate in the study were sent to the 1,552 names on the mailing list along with a form notifying the author of the recipient's decision to accept or decline the invitation. Upon receipt of an agreement to participate, surveys were mailed to the participants. This occurred over a six-week period from the end of July to the beginning of September.

The two-stage process of sending invitations then questionnaires was necessary because the mailing list included an unknown number of vendors and family members, and it was not known what percentage of the original list met the proposed sampling criteria (ages 60 to 75). Not knowing the percentage of the original sampling frame that met the sampling criteria precluded drawing a random sample. Instead, the author assigned a primary identification number to each of the 1,552 mailing list names and sent invitations to all the names on the list (see Appendix A). The invitation described the study, its potential benefits and risks, explained that the study was confidential, and asked invitees who wanted to participate to complete an enclosed form (see Appendix B) and return it in an enclosed stamped envelope. The form included a space for a negative response with a list of possible reasons why the invitee did not want to participate. Those agreeing to participate would receive a questionnaire with a cover letter reiterating the information in the invitation (see Appendix C) and an enclosed stamped envelope. Because this was an older population, the questionnaires were printed on heavy card

stock and in large font. The card stock paper was used to avoid the problem of less nimble fingers turning more than one page at a time and thereby skipping entire pages of questions. The larger font was used to facilitate reading for those with vision difficulties (Lawton & Herzog, 1989).

The original invitation included the author's telephone number so that potential participants could ask questions. Thirty-seven invitees called with questions, mostly concerning the time required to participate in the study and if they would be required to drive or make transportation arrangements to attend sessions. Others wanted assurance that they would receive information concerning the results of the study. Five hundred and eighteen people responded by mail to the invitation, with 387 saying yes and 131 saying no. Another 166 invitations were returned by the post office with notification of no known address and sixteen were returned with notification that the recipient was deceased. Subtracting the returned mail (182) from the original total of 1,552 for a final total of 1,370 invitations sent and presumably received, the 518 returned forms represented a 37.81 percent response rate. Of the 387 surveys mailed to the invitees who agreed to participate in the study, 336 were returned, for an 86.8 percent response rate. Ten additional surveys were received from friends and spouses of participants who had been referred to the study by other participants. Because of the heavier weight and size of the questionnaire due to the use of card stock and a larger font, the initial invitation was a cost-saving measure that promised a higher response rate to the surveys mailed than if surveys had been mailed to all 1,552 names on the mailing list.

A secondary identification number was assigned to participants when their letter of agreement was received and a questionnaire mailed out. An error on the part of the author possibly resulted in a lower response rate when stamps were not added to the enclosed envelope of 56 of the participants. Two participants let the author know about

the oversight via telephone or through a third party and the author identified all participants to that date who were missing stamps on the enclosed envelope and sent these participants the necessary postage with an explanatory letter. For these 56 recipients, 78.57 percent returned completed surveys, somewhat less than the overall response rate of 89.4 percent. The author was able to identify the 56 survey recipients who did not receive return postage because of the secondary identification number that had been assigned when the surveys had been mailed. By sorting the recipient list by secondary identification numbers, telephoning the recipients and inquiring about the status of return postage, and narrowing the negative responses to those 56, the author could be reasonably certain of identifying all recipients who had not received postage.

Of the 346 surveys received, 35 were not used in the study. Nine of these were missing more than 50 percent of responses in one or more of the subscales comprising the variables in the path model. The ten surveys received through referral, a sampling technique commonly referred to as “snowballing” (StatPac, Inc., 2005), were excluded from the study because they were not part of the original sampling frame, thus biasing the already restricted generalizability of the results. In addition, sixteen couples participated in the study. It was possible that these individuals influenced each other’s responses, introducing a level of multicollinearity in the study that could not be controlled. Deleting all 32 spouses would have brought the final sample size below the 300 required for a large sample size as recommended by Kline (2005). Therefore only the husbands’ responses were kept in the study, thus modestly increasing the representation of men in the study and bringing the final sample size to 311.

Measures

Participants were asked to complete a questionnaire containing several measures, which included (1) a demographic questionnaire (see Appendix D); a self-rating of health

measure (Krause, Ellison, & Marcum, 2002; see Appendix E); a physical conditions checklist (Johnson, et al., 1990; see Appendix F); the Satisfaction With Life Scale (SWLS, Diener, Emmons, Larsen & Griffin, 1985; see Appendix G); the Social Interest Scale (SIS, Crandall, 1981, see Appendix H); the Loyola Generativity Scale (LGS, McAdams and de St. Aubin, 1992; see Appendix I); and an informal social integration scale (Nesse, et al, 2002; see Appendix J).

Demographic and Physical Health Measures

The demographic questions and physical health checklist were included for the purpose of controlling for these factors in the data analysis. The demographic questionnaire contained eight items asking the participant's date of birth, sex, race, marital status, household income, education level, number of children and number of grandchildren. Objective health status was measured using a checklist of thirteen chronic conditions: coronary heart disease, chronic bronchitis, emphysema, high blood pressure, stroke, diabetes, chronic back pain, allergies, arthritis, cirrhosis, multiple sclerosis, Parkinson's Disease, and cancer. The scale score for physical condition was the sum of chronic conditions, ranging from 0 to 13 (Johnson, et al., 1990). This was reverse-scored during analysis in order to make the highest score equivalent to better health, thus making the direction of the physical health status scale the same as the other measures in the study.

Social Interest Scale

The Social Interest Scale (SIS, Crandall, 1981) was used to measure social interest. The SIS was chosen to measure social interest because it purports to measure "interest in and concern for others" (Crandall, 1981, p. 23). The SIS consists of 24 pairs of items that describe traits related to cognition, affect and behavior. Subjects choose one trait that they would rather have from each pair. Fifteen pairs are keyed to social interest

traits such as helpful, sympathetic or tolerant. Nine buffer pairs are not scored (see Appendix H for scoring key). The number of socially interested traits chosen from the remaining 15 are summed to attain the individual's social interest score. Test-retest reliability was shown to range from 0.82 at five weeks to 0.65 at fourteen months (Crandall, 1981). Internal consistency was high with coefficient alpha estimated at 0.73 ($N=246$) (Crandall, 1981). Validity was tested against objective measures of behavior and subjective measures of altruism and concern for others. Objective validation was tested comparing convicted felons (mean age = 22.38) to university freshmen (mean age = 18.82) and university employees (mean age = 38.60) and indicated a significant difference in social interest scores between the prisoners and the university-affiliated groups. Subjective validation of the SIS showed significant correlation between the SIS and self-report empathy scales (Crandall, 1981). Because the theory of social interest is so closely related to the mental health and social adjustment of an individual, social interest scales run the risk of being biased by the desire to present oneself in a favorable manner, also termed social desirability (Crowne & Marlowe, 1964). In fact, Crandall found a significant correlation between the Social Interest Scale and the Marlowe-Crowne Social Desirability Scale. But because of the socially desirable nature of some of the items (helpfulness, courtesy, moral behavior, etc.), this correlation is not so surprising. To better test the SIS resistance to social desirability bias, the instrument was administered to the same participants under two conditions: one normal and one "fake good" situation in which the participants were asked to disregard their previous responses and instead respond in such a way as to make them "look as healthy and well-adjusted as possible" (Crandall, 1981, p. 41). The results showed no significant difference between the two sets of test scores ($r = 0.48, p > 0.60$).

Loyola Generativity Scale

Generativity was measured using the Loyola Generativity Scale (LGS, see Appendix I) (McAdams and de St. Aubin, 1992). This is a 20-item self-report instrument using a 4-point Likert scale measuring generative concern. It asks respondents to rate an item on a scale ranging from “the statement never applies to you” to “the statement applies to you very often.” Unlike the scales measuring social interest, the LGS correlates highly with the other two generativity measures currently in use (Bradley, 1997; Peterson & Klohnen, 1995). Test-retest reliability was found to be 0.73 over a three-week period (McAdams & de St. Aubin, 1992). Internal consistency was high with alpha coefficients of 0.83 and 0.84 for the two test samples (McAdams & de St. Aubin, 1992). Validity was established through positive correlations with an existing global test of generativity. To guard against responses biased by social desirability, the authors chose items that correlated highly with two existing generativity scales, and had low or nonsignificant correlations with a social desirability scale (McAdams & de St. Aubin, 1992).

Satisfaction with Life Scale

The Satisfaction with Life Scale (SWLS, see Appendix G) (Diener, Emmons, Larsen & Griffin, 1985) measures an individual’s cognitive assessment of global satisfaction with life through five self-report questions measured on a 7-point Likert scale ranging from strongly disagree to strongly agree. The test-retest correlation coefficient was 0.82 for a two-month period, and the coefficient alpha was 0.87. The SWLS correlated 0.02 with the Marlowe-Crowne social desirability scale and 0.46 with interviewer ratings. The authors speculated that the lower than expected correlation with interviewer ratings was influenced by including observations of emotional affect in the

subjects, despite the fact that the SWLS specifically excludes emotional affect from the measurement scale. Therefore the authors were not overly concerned that the interviewer rating correlation was lower than expected.

Self-Rating of Health Scale

The self-rating of health measurement (SRH, see Appendix E) can be obtained using a single item or a sub-scale of multiple items. Sociologists have begun using a multi-item scale to introduce more variability into the traditional measure of SRH (Krause, Ellison & Marcum, 2002). This scale consists of three items that ask: (1) In general, would you say that your health is: excellent, very good, good, fair or poor? (2) I am as healthy as anybody I know; and (3) My health is excellent. The last two questions are rated on a five-point Likert scale ranging from definitely true to definitely false.

Informal Social Integration Measure

Informal social integration was measured using a sub-scale consisting of two questions from the Changing Lives of Older Couples study (see Appendix J) (Nesse, et al, 2002). The first question asks, “How often do you get together with friends, neighbors or relatives and do things like go out together or visit in each other’s homes?” Responses are “More than once a week,” “About once a week,” “1 to 3 times a month,” “Less than once a month,” and “Never.” The second question asks, “In a typical week, about how many times do you talk on the telephone with friends, neighbors or relatives?” Responses are “More than once a day,” “About once a day,” “2 to 3 times a week,” “About once a week,” “Less than once a week,” and “Never.” These questions formed the subscale that was significantly correlated with life satisfaction but not self-rated health. As mentioned earlier, these relationships, coupled with the correlation of

education with self-rated health but not life satisfaction, provide a theoretical foundation for positing an over-identified path model which allows the hypothesized model and its alternative model to be compared using the Akaike Information Criterion goodness of fit test statistic.

Data input and data screening

Data Input

Data from the questionnaires were input using Excel software. Subscale scores were calculated using the Excel average function, except in the case of the Social Interest Scale (SIS). This score was manually calculated on each questionnaire using the key (see Appendix H). Although this score could have been calculated using the Transform function in SPSS, Excel was preferred because of the need to use the print feature to print and manually check data for data entry errors or for missing data.

Missing Data

Both Excel and SPSS were used to identify and examine missing data. First, the print-out of the data was examined for questionnaires that contained more than 50 percent missing data for any subscale. These respondents' scores were deleted from the sample. Then the dataset was imported to SPSS and the search function used to further identify missing data. As discussed earlier, surveys from 35 of the 346 respondents were not used in the final analysis. Nine of these contained more than 50% missing data from subscales used in the questionnaire. Table 4 shows the subscales with missing data and the amount missing. For the 311 respondents used in this study, the questionnaire contained 61 data elements, or a total of 18,971 data elements used for analysis. Of the 311 surveys, 45 were missing between one and three responses, or a total of 64 responses out of the entire data set of 18,971 data elements. Therefore, while 14.47 percent of the final sample was

missing data, only 0.33 percent of the dataset had missing data. These missing elements were replaced with the series mean, a method offered in SPSS software.

Table 4. Percent missing data in subscales leading to deleted records

Scale	Percent missing	Number of respondents
SIS	67% - 100%	3 (one missing 70% of LGS also)
LGS	70-100%	2 (one missing all of SIS also)
LSAT	80%	4
SRH	67%	1

Outliers

After all missing data was handled, by either deleting a complete record or replacing missing values with the series mean, all variables were examined for outliers, skew, and kurtosis. Using box plots, SPSS identified cases that contained potential outliers. The author examined the original questionnaires to check for possible errors in data entry and to determine if these were true outliers or if there were good reasons for keeping the cases. For all variables except Satisfaction With Life, the response sets within the subscales were within a range of two to three responses on the Likert scale. For the Satisfaction with Life Scale, four of the fourteen outliers had low response sets except for item two. This item stated “The conditions of my life are excellent” which these four participants rated high, in relation to the other scores. These four participants all indicated incomes over \$100,000 and it is possible that they interpreted this statement in terms of the material conditions of their lives, therefore indicating a higher score. The remaining outliers on this scale had responses within three points on a seven-point Likert scale. Therefore, all responses containing outliers were retained in the sample.

Skew and Kurtosis

Because path analysis is based on multiple regression equations, the assumption of normal distribution of variables should not be violated. Therefore the author screened

all variables for skew and kurtosis. Two variables, the Satisfaction With Life Scale score and the Self-Rated Health scale score were shown to have skew values of -1.088 and -.953, figures whose absolute values exceeded 0.8, a level that one researcher expressed as the acceptable limit for skew (Wuensch, 2005). Both variables were negatively skewed, requiring that the data be “reflected” by first reversing the distribution, then a square root transformation was applied, then the distribution was reflected again to return it to its original order (Osborne, 2002). The skew and kurtosis values for the Satisfaction with Life Scale and Self-Rated Health were checked again after performing the transformation and they were -.420 and -.557 respectively.

Correlation Matrix and Standard Deviations

After screening the data for missing values, outliers, skew and kurtosis, SPSS was used to generate a partial correlation matrix controlling for age, sex, race, marital status, income, and physical health status. This correlation matrix and corresponding standard deviations were entered into a text file that MPlus software would use to perform the path analyses (see Table 5).

Table 5. Correlation matrix and standard deviations used to conduct path analyses

Variable	1	2	3	4	5	6
1. Informal Social Integration	1.000					
2. Education Level	0.103	1.000				
3. Social Interest Scale (SIS)	0.077	-.030	1.000			
4. Loyola Generativity Scale (LGS)	0.232	0.226	0.033	1.000		
5. Satisfaction with Life Scale	0.164	0.065	0.097	0.223	1.000	
6. Self-Rating of Health	0.037	0.022	0.047	0.129	0.367	1.000
<i>M</i>	4.29	2.96	10.14	1.92	6.42	4.57
<i>SD</i>	0.964	1.111	3.053	0.429	0.337	0.294

CHAPTER FOUR

RESULTS

MODEL FIT

The first assessment in path analysis is to examine how well the model fits the data. This assessment can be performed using several goodness of fit tests. The first test is to examine chi-square for the baseline model and for the proposed model. In path analysis, the chi-square statistic tests the null hypothesis that the model has perfect fit in the population (Kline, 2005). Failure to reject the null hypothesis shows support for the proposed model. For the hypothesized model proposed in Question 2 which tested the predictive effects of social interest and generativity on self-rated health as mediated by life satisfaction, the chi-square test failed to reject the null hypothesis that the model has perfect fit in the population, $\chi^2(2, N = 311) = 0.472, p > 0.05$. For the alternative model proposed in Question 3 which tested the predictive effects of social interest and generativity on life satisfaction, as mediated by self-rated health, once again the chi-square test failed to reject the null hypothesis, $\chi^2(2, N = 311) = 0.085, p > 0.05$.

But because the chi-square test of model fit tests a rather suspect hypothesis that the model as tested in a sample will perfectly fit the population, other goodness of fit tests are also considered when assessing model fit (Kline, 2005). One such statistic is the Root Mean Square Error of Approximation (RMSEA). The RMSEA tests the degree of falseness of the null hypothesis and is an approximation of the model's fit in the population. An RMSEA value under 0.05 is considered to be a good test statistic of model fit (Kline, 2005). The hypothesized and alternative models both returned RMSEA values of 0.00, with a confidence interval for the hypothesized model between 0.00 and

0.072 and for the alternative model of between 0.000 and 0.000. Table 6 summarizes these and other fit statistics, all of which indicate that both the hypothesized and alternative path models were shown to fit the data well.

Table 6. Summary of fit statistics for the hypothesized and alternative models.

Goodness of fit indices	Hypothesized model (Question 2)	Alternative model (Question 3)
Chi-square	$\chi^2=0.472$, df = 2, p = 0.7899	$\chi^2=0.085$, df = 2, p = 0.9602
CFI (>0.90 is good)	1.000	1.000
RMSEA (<.05 is good)	0.000, CI: 0.000 to 0.072	0.000, CI: 0.000 to 0.000
SRMR (<.05 is good)	0.008	0.003

The path analyses proposed in Questions 2 and 3 were conducted using MPlus structural equation modeling software. Recursive path models such as these presume that the causal chain flows in only one direction. If this assumption holds true, then standardized partial regression coefficients based on the series of regression equations describing each direct and indirect path are considered unbiased estimates of the path coefficients (Bennett, Gottesman, Rock, & Cerullo, 1993). MPlus used the partial correlation matrix and standard deviations obtained in SPSS (see Table 5) to compute the regression equations needed to obtain the path coefficients. In these regression equations, each dependent variable, self-rated health (SRH) and life satisfaction (SWLS), was regressed on the explanatory variables, social interest (SIS) and generativity (LGS) as well as informal social integration (Inf. Soc. Int.) and education level (Educ.). In these models, one dependent variable also serves as an explanatory variable in the regression equation. For the hypothesized model described in Question 2, self-rated health was regressed on the explanatory variable life satisfaction, and for the alternative model described in Question 3, life satisfaction was regressed on the explanatory variable self-rated health.

Figure 5 shows the path coefficients for the hypothesized model proposed in Question 2 that social interest and generativity affect self-rated health through the mediator variable of life satisfaction. Figure 6 shows the path coefficients for the alternative model proposed in Question 3 that social interest and generativity affect life satisfaction through self-rated health.

Question 1. Relationship between social interest and generativity.

MPlus also computed the covariances between the independent variables social interest (SIS), generativity (LGS), informal social integration (InfSoc) and Education level (Educ). As shown in Figures 5 and 6, these are the same for both hypothesized and alternate models. Note that, contrary to the hypothesis outlined in Question 1, there is a positive but non-significant correlation in this population between social interest and generativity. Table 7 lists all the covariances for the path models.

Table 7. Covariances among the independent variables

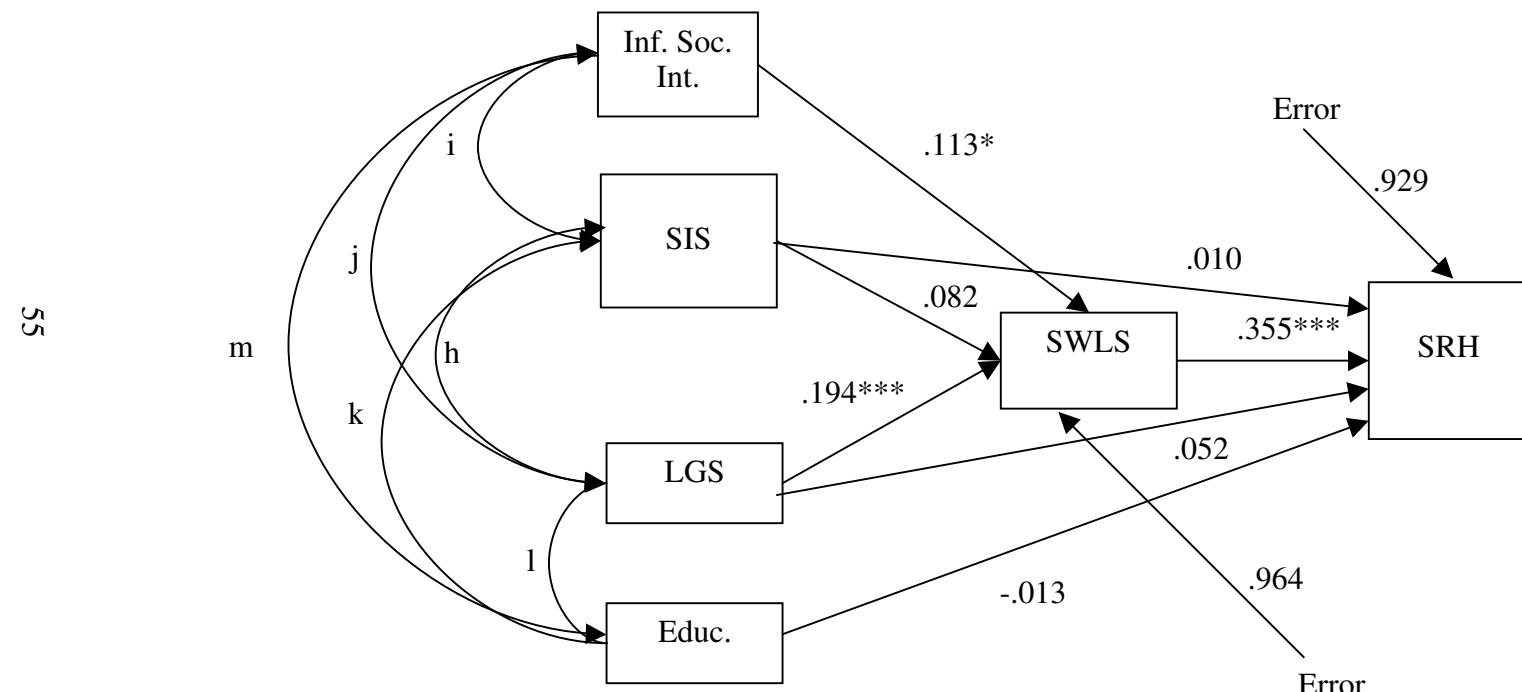
Covariance	Variables	Path coefficient
h	Social Interest with Generativity	.033
i	Social Interest with Informal Social Integration	.077
j	Generativity with Informal Social Integration	.232***
k	Social Interest with Education	-.030
l	Generativity with Education	.226***
m	Informal Social Integration with Education	.103

*p < .05

** p < .01

***p < .001

Figure 5. Path Model showing the predictive effects of social interest (SIS) and generativity (LGS) on self-rated health (SRH), through life satisfaction (SWLS). (Question 2)



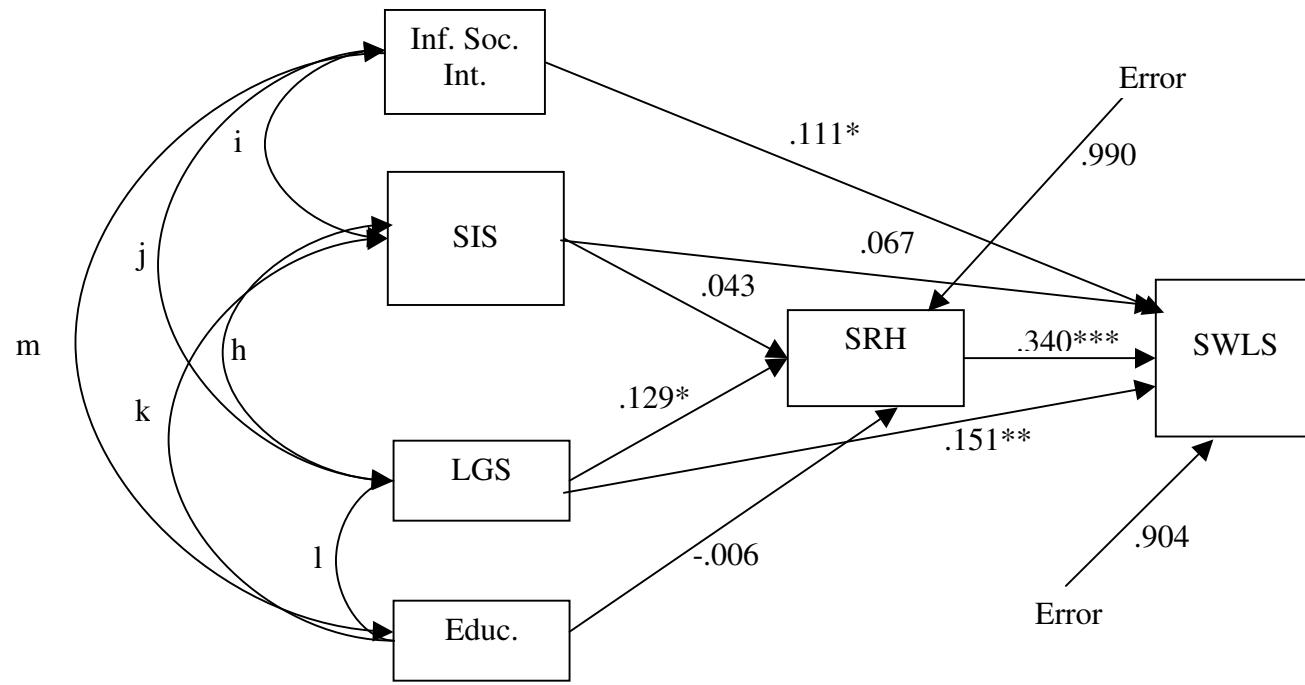
* $p < .05$

** $p < .01$

*** $p < .001$

Figure 6. Path model showing the predictive effects of social interest (SIS) and generativity (LGS) on life satisfaction (SWLS) through self-rated health (SRH). (Question 3)

56



* $p < .05$

** $p < .01$

*** $p < .001$

Question 2. Direct and Indirect Effects of Social Interest and Generativity on Self-rated Health, as mediated by Life Satisfaction.

When exploring questions of mediation, one must first establish a significant direct effect of the independent variable on the outcome variable (Shrout & Bolger, 2002). Using SPSS, and controlling for age, sex, race, marital status, income and objective physical health status, the author estimated the direct effects of social interest and of generativity on self-rated health. Social interest, as measured with the Social Interest Scale, was found not to predict self-rated health, with a standardized beta coefficient of 0.038, $p = 0.429$. Because a significant direct effect must first be shown for the path from the explanatory variable, in this case social interest, to the final outcome variable, self-rated health, before conducting an analysis of mediation, it is not necessary to report the direct, indirect and total effects of social interest on self-rated health (Shrout & Bolger, 2002). That is, life satisfaction, as proposed in question 2, cannot mediate a relationship that did not exist in this sample, that is, the relationship of social interest to self-rated health.

However, the author did find significant direct and indirect effects for generativity (see Table 8). Using SPSS, and controlling for age, sex, race, marital status, income and objective physical health status, the author estimated the direct effect of generativity on self-rated health and found it to be significant at the 0.05 level, with a standardized beta coefficient of 0.109 ($p = 0.034$). That is, for every one standard deviation increase in generativity, self-rated health increased by 0.109 standard deviation. Furthermore, life satisfaction was found to fully mediate the relationship of generativity to self-rated health.

Table 8 summarizes the MPlus estimations for the total, direct and indirect effects when including all variables in the model. The regression coefficient for the indirect path

from generativity to self-rated health through life satisfaction is equivalent to the product of the direct paths leading to the outcome variable. The standardized path coefficient for the path from generativity to life satisfaction was 0.194 ($p < .001$) and the standardized path coefficient for the path from life satisfaction to self-rated health was 0.355 ($p < .001$; see Figure 5 and Table 8). Thus, the standardized indirect path coefficient was 0.194×0.355 , or 0.069, ($p < .01$). Because the significance of the coefficient of the direct path from generativity to self-rated health decreased to zero (0.052, $p > 0.05$) when the mediation variable of life satisfaction was added to the equation, then life satisfaction can be said to fully mediate the effect of generativity on self-rated health in this sample (Keith, 2006).

Table 8. Standardized Direct and Indirect Effects on Self-Rated Health (Question 2, Figure 5).

	Direct	Indirect	Total
SIS	.010	.029	.039
LGS	.052	.069**	.121
SWLS	.355***		.355
Education	-.013		-.013

** $p < .01$; *** $p < .001$

R^2 for SRH = .137

R^2 for SWLS = .070

Question 3. Direct and Indirect Effects of Social Interest and Generativity on Life Satisfaction, as mediated by Self-rated Health.

For Question 3 (see Figure 6) the author once again found significant direct and indirect effects for generativity, but not for social interest (see Table 9). Using SPSS, and once again controlling for age, sex, race, marital status, income and objective physical health status, the author estimated the direct effect of generativity on life satisfaction and found it to be significant at the .001 level, with a standardized beta coefficient of 0.185, $p = 0.001$. As with Question 2, the regression coefficient for the indirect path from

generativity to life satisfaction through self-rated health is equivalent to the product of the direct paths leading to the outcome variable (0.129×0.340 , or 0.044 , $p < 0.05$; see Figure 6 and Table 9). Because the coefficient for the direct path from generativity to life satisfaction was only reduced to 0.151 ($p < 0.01$), it was shown that self-rated health partially mediated the effect of generativity on life satisfaction (Shrout & Bolger, 2002). In other words, while generative concern, as measured by the Loyola Generativity Scale (LGS), has a strong predictive effect on life satisfaction, as measured by the SWLS, self-rated health (SRH) accounts for a significant portion of the effect of generativity on life satisfaction in this sample, but not all of the effect.

Table 9. Standardized Direct and Indirect Effects on Life Satisfaction (Question 3, Figure 6).

	Direct	Indirect	Total
SIS	.067	.014	.081
LGS	.151**	.044*	.195
SRH	.340***		.340**
Informal Social Integration	.111*		.111*

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

R^2 for SRH = .019

R^2 for SWLS = .183

Comparing the Path Models

The explanation of direct and indirect effects between the two models would point to a preference of the model described in Question 2, that is, that life satisfaction fully mediates the effect of generativity on self-rated health. A comparison of the Akaike Information Criterion (AIC) goodness of fit statistics for each model somewhat complicates this conclusion. The lower AIC of two non-hierarchical models using the same data set indicates the model that is most likely to be replicated using the same sample population (Kline 2005). In this sample, the AIC for the model illustrating Question 2 was 3992.709. The AIC for the model illustrating Question 3 was 3992.322.

Because the AIC for the model proposed in Question 3 is lower, and because there is as yet no threshold that determines a significant difference between two models using the AIC, the model described in Question 3 is the one most likely to be replicated using the same sample.

CHAPTER FIVE

DISCUSSION

According to Adler's theory of Individual Psychology and Erikson's theory of psychosocial development, it is important to continue vital involvements with one's physical, social and cultural environments to adjust to the changes that inevitably come with aging (Erikson et al., 1986; Ansbacher, 1992). Life satisfaction and the perception of good health are often-used indicators of such adjustment and well-being in old age (Havighurst, 1961; Idler, Hudson & Leventhal, 1999).

The purpose of the proposed study was to determine the extent to which social interest and generativity are associated, and the extent to which these contribute to feelings of life satisfaction and self-rated health. Specifically, it was anticipated that social interest and generativity would be positively and significantly correlated and that these variables would significantly predict self-rated health as mediated by life satisfaction. Because research exploring the causal relationships between the four variables is minimal, this study intended to provide statistical evidence for the importance of social interest and generativity for outcome variables indicating positive psychological functioning and successful aging.

QUESTION 1

Question 1 of this study empirically examined the relationship between generativity and social interest with the intention of introducing to Adlerians some of the methods of Eriksonian researchers in developing generativity measures. The question at the heart of this test was: if a person is socially interested, with a tendency to resolve life's conflicts and dilemmas in a cooperative manner and a view toward bettering

society, would that person also be high in generative concern, that is, concerned with taking care of what he or she has produced and created? In this sample, this relationship was statistically non-significant, with a partial correlation, controlling for age, sex, race, marital status, income and physical health status, of $r_{xy} = 0.033$. While there are differences in the constructs, the theoretical comparison of the two would have led one to think that there should be a stronger correlation between the two characteristics. Adler and Erikson theorized that both concepts are key to successful adaptation to change in the environment and in oneself. Both theorists emphasized the importance of cooperation with others and contribution to the advancement of society at large. But only one of these concepts, generativity, is measured by instruments that are very reliable and have strong and significant intercorrelations (Bradley, 1997; McAdams & de St. Aubin, 1992; Peterson & Klohnen, 1995). This indicates that generativity, while a complex construct, has much agreement among researchers as to what is being measured. Such agreement in the research and measurement of generativity owe a great deal to the extensive writings of its creator, Erik Erikson.

Unfortunately, social interest does not share this accord in defining the constructs that underlie the concept, an understandable situation in light of Adler's comparatively scant exposition of social interest and the problem with interpretation of the original German text. As recently as 1991, Adler's main translator, Heinz Ansbacher, introduced a revision and expansion of his translation of Adler's ideas on social interest. This latest translation expands previous explanations of social interest to include the idea of community feeling, or communitarian social interest, an idea that is not measured in the existing instruments. This newest translation, and the work of Manaster (2004), Peven (2004), Manaster, et al. (2003) and Richardson and Manaster (2003) emphasize the importance of communitarian social interest for understanding the full meaning of social

interest and presents a challenge for researchers in the Adlerian community to reassess what social interest instruments should measure. Lack of research concerning social interest and its importance for older adults also challenges Adlerians to include older adults in the development of such instruments.

Further explanation for the nonsignificant correlation between the two constructs may lie in the measurement instruments used for this study. The Social Interest Scale was validated among a population of college students aged 18 to 22. Although it has been used among people in their mid-40s (Crandall & Putnam, 1980), the measure has never been used with older adults. Some item pairs clearly presented problems to this study's sample population of older adults. Items asking the participant to choose which they would rather be, "alert" or "cooperative," presents a unique challenge to an adult facing old age. With an incidence rate of Alzheimer's disease of 5 percent among those aged 60 to 75 and as much as 50 percent for those over the age of 85 (Alzheimer's Association, 2005), the threat of losing mental functioning may play a role in the selection of "alert" over "cooperative" in this pair. An item with similar concerns for use with an older population pairs "capable" with "tolerant". Again, those concerned with decreasing mental and physical capacity may prefer to be "capable" rather than "tolerant." A preliminary comparison of responses on these items with the remaining pairs of traits showed some problems with using the traits of "capable" and "alert" as part of an assessment of social interest in an older population. For all trait pairs except these two, the largest percentage chose the socially-interested trait, with varying degrees of difference in the percentage. However, for both the alert-cooperative pair and the capable-tolerant pair of traits, the majority of participants chose "alert" and "capable" over "cooperative" and "tolerant" (see Table 10). That is, the only two items that showed the majority of the sample selecting the item inconsistent with social interest had to do

with the subject's sense of mental and physical ability – issues of concern for aging adults. However, deleting these pairs did not significantly change the correlations, so while this may be a problem for the instrument when using it in an older population, it was not the reason for a lack of correlation with generativity in this sample.

Table 10. Responses to social interest items

Pair	Correct choice	Percent correct	Percent incorrect	Difference
helpful – quick-witted	helpful	76.5	23.5	53.0
neat – sympathetic	sympathetic	78.5	21.5	57.0
intelligent – considerate	considerate	58.2	41.8	16.4
respectful – original	respectful	71.1	28.9	41.2
generous – individualistic	generous	80.7	19.3	61.4
*capable – tolerant	tolerant	42.4	57.6	-15.2
trustworthy – wise	trustworthy	83.3	16.7	62.6
forgiving – gentle	forgiving	68.8	31.2	37.6
efficient – respectful	respectful	56.3	43.7	12.6
*alert – cooperative	cooperative	46.3	53.7	-7.4
imaginative – helpful	helpful	67.8	32.2	35.6
realistic – moral	moral	56.6	43.4	13.2
considerate – wise	considerate	67.5	32.5	35.0
sympathetic –individualistic	sympathetic	81.4	18.6	62.8
ambitious – patient	patient	78.5	21.5	57.0

It is possible instead that the two instruments chosen do not reflect the aspects of social interest and generativity that can be compared. The Social Interest Scale is concerned with cooperation and with respectful, considerate interaction with others. The Loyola Generativity Scale, on the other hand, explores an individual's attitude toward action in the community, toward accomplishing long-lasting goals, and toward how one thinks he or she is perceived by others in the area of contribution. While both scales may explore a certain generosity of spirit, their focus is quite different. Possibly a better scale for comparing the underlying traits required for both social interest and generativity would have been the Generativity Status Measure (GSM), developed by Bradley (1997). The GSM assesses generativity by measuring both involvement and inclusivity with the resulting score purported to indicate an individual's level of generative style and

expression. By measuring inclusivity, the GSM gives equal importance to an individual's degree of "tolerance of tension and diversity" as to their level of action and involvement. It may even be useful to explore the relationship between only the inclusivity measure of the GSM and social interest because the GSM's degree of involvement may relate more closely to Adler's idea of degree of activity than to social interest. But clearly there is more work to be done to better understand the elements that make up social interest.

One quality of social interest that is similar to generativity is its developmental nature. To Adler, social interest increases in an adult who is maturing well. This is shown in a comparison between the results of this sample and those found by Crandall (1981). Table 11 shows that the mean SIS scores increase with each age group.

Table 11. Mean Scores and Standard deviations by age group

Group	N	Mean Age	Mean SIS	SIS Standard Deviation
University Students	1784	19.86	8.17	3.32
University Employees	327	35.23	8.92	3.55
Members of senior resource group	311	74.77	10.14	3.05

QUESTIONS 2 AND 3. ANALYSIS OF PATH MODELS

Questions 2 and 3 explored the predictive effects of social interest and generativity for life satisfaction and self-rated health, two well being indicators for older adults. In Question 2, generativity was shown to significantly predict self-rated health and this causal relationship was fully mediated by the effect of generativity on life satisfaction. In Question 3, generativity significantly predicted life satisfaction and this relationship was partially mediated by the effect of generativity on self-rated health. Therefore, the analyses using this sample failed to reject either hypothesized model. However, in comparing the two models, the author concluded that this study very strongly supports Diener's 1984 assertion that specific domain satisfactions, in this case

self-rated health, derive from life satisfaction. This conclusion also raises some concern for the growing practice of summing domain satisfactions to arrive at a global rating of life satisfaction (see Nesse, et al., 2002).

The hypothesis that social interest would predict life satisfaction and self-rated health, found in both Questions 2 and 3, was rejected in this sample. Linear regressions of life satisfaction and self-rated health on social interest returned non-significant beta coefficients. But further exploration of the relationship between social interest and these two dependent variables revealed curvilinear relationships for both, with a significant quadratic curvilinear regression at the 0.01 level for social interest and life satisfaction and at the 0.05 level for social interest and self-rated health (see Table 12).

These findings indicate that, in this sample, those with low social interest had a high satisfaction with their lives, and also rated their health as very good to excellent. As social interest scores approached the mean, life satisfaction scores and self-ratings of health decreased. But as social interest scores approached the maximum from the mean, life satisfaction scores and self-ratings of health increased again. Therefore, those individuals with extreme social interest scores, whether high or low, experienced greater life satisfaction and higher levels of self-rated health. This might be explained by the possibility that those people whose social interest scores center around the mean may be more conflicted about their levels of cooperation and involvement with others, and therefore may have less satisfaction with their lives, while those who have no doubts about the role they play in their relationships experience less questioning about their goals and purpose and therefore experience greater life satisfaction and self-ratings of health. This finding is cautionary in that it warns researchers not to assume that high life satisfaction and high self-rated health are necessarily good for society, which is where the communitarian aspect of social interest comes in. Those high in social interest for both

individuals and the community will not only have higher life satisfaction and better self-ratings of health, they will also be better for society as a whole.

Table 12. Comparison of linear and quadratic regressions of life satisfaction and self-rated health on social interest

	Linear regression		Quadratic regression	
	p value	beta coefficient	p value	beta coefficient
Life Satisfaction	p = 0.068	0.104	p = 0.010	-0.0657
Self-rated health	p = 0.401	0.0046	p = 0.016	-0.0719

LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

Limitations to this study derive from the sampling technique, measurement error, and from the theoretical assumptions about the complex nature of social interest and generativity. The sampling technique involved asking members of a senior advocacy and resource center to volunteer their time to complete questionnaires. Because the two independent variables concerned social interest and generativity, that is, degree of cooperation and care for others, the very act of volunteering may have skewed the response sets toward the higher end of social interest and generativity.

The inadequacy of social interest scales to measure the theoretical conception of social interest introduces a level of measurement error that may only be addressed once scales that incorporate the communitarian aspect of social interest and pertain to all ages are developed and tested. It was intended that the empirical findings concerning the association between social interest and generativity would suggest a new direction and method that Adlerian researchers could follow in developing more comprehensive scales for social interest. Despite the finding of a nonsignificantly positive correlation between social interest and generativity in this sample, the author believes the type of research in scale development conducted by generativity researchers can still inform Adlerian research in the development of a social interest scale, or scales, that measure both the

individual and communitarian levels of social interest. In 2002 Bass called for a panel of experts to develop a new social interest scale. This author would encourage these experts to explore the methods used by Eriksonians in developing the various generativity scales for ideas on how to approach this process.

The assumption of linear relationships among all the variables may have also hampered the current study, as exemplified in the curvilinear effect of social interest on life satisfaction and self-rated health. Instead, Adler's theory of Individual Psychology and Erikson's theory of psychosocial development implicate the concepts of social interest and generativity in the mental health of the individual and in the broader health of the community by describing individuals as embedded in the physical, social, historical and cultural environment. Indeed, to both Adler and Erikson, the mentally healthy individual is inextricably intertwined with the continuing betterment and evolution of humankind. This concept is similar to Richardson, Fowers and Guignon's description of dialogue in the hermeneutic tradition "in which interpreters and events mutually shape one another in a continuing search for understanding, including ethical insight" (1999, p. 113). If such dialogue is undertaken authentically and in a socially interested manner, with a view toward care for all that has been created, it could lead toward a goal of "mankind as a cooperating community" (Adler, 1979a, p. 40).

Such a circular relationship between the individual and the environment should not be explored using methods that assume linear relationships. Instead, future research concerning social interest, generativity and well-being should incorporate methods that are sensitive to dynamic relationships, possibly such as those exemplified in a recent article that statistically examined "human flourishing" within a framework of dynamic systems (Fredrickson & Losada, 2005). Qualitative methods that explore the shared lived experiences of individuals and their communities could help researchers understand the

interlocking web of commitments, wants and fears that are part of the ongoing creation and re-creation of individual and community (see Richardson & Guignon, 2005; Guignon, 2004). Such research could involve interventions at both the individual and community levels that would call on or even help cultivate an individual's social interest and generativity. At the individual level, some researchers (Richardson & Guignon, 2005; Valera, Thompson & Rosch, 1996) propose using meditation as a method to learn self-reflection and accountability for one's values and commitments while simultaneously introducing the idea of releasing attachment to outcomes associated with these values and commitments. At the community level, this process, which Richardson and Guignon (2005) refer to as enowment and release, can be introduced through the deliberative process as offered by such organizations as the National Issues Forums (National Issues Forums Institute, 2005). Introducing these techniques at the level of the individual and the community could explore in both an academic and a practical manner the relationship of social interest and generativity to the well-being of both individuals and communities. Ideally, implementing these methods would call on the expertise of other fields such as philosophy, history, sociology, religion and public affairs, in addition to psychology.

CONCLUSION

The population growth of older adults in America has spurred a wealth of research in the fields of health and psychological wellness. However, little of this research is situated within a framework of personality and developmental theory. Instead, empirical studies assess the relationship of specific variables to successful aging outcomes such as life satisfaction or self-rated health with few attempts to organize the findings into a coherent understanding of the personality and development of the older adult. Adler's concept of social interest and Erikson's stage of generativity both address the fundamental processes at work in adjustment and development, and do so within a

context of embeddedness in the physical, historical, social and cultural environment.

These theories are consistent with recent calls for psychology to engage in research and practice that explores and treats the individual within the context of the community.

Only when we consider the health and well-being of our older population, indeed all of us, within such a context, can we begin to approach an understanding of what the “good life” might mean for all people.

Appendices

APPENDIX A: INVITATION TO PARTICIPATE

Dear Friend of -----,

You are invited to participate in a study about the health and well-being of older adults. Our names are Gayle Acton, former Board Chair of ----- and professor at the University of Texas at Austin, and Mary Knill, principal investigator and graduate student at the University of Texas at Austin. You were selected as a possible participant in this study because you are age 60 or older and/or are associated with ----- . You will be one of about 375 subjects to participate in this study.

If you decide to participate, we will send you a questionnaire. The questionnaire will ask you about your activities, your personality, and some general questions about your health and well-being. Also, the questionnaire will ask you to tell us information such as your age, gender, and marital status. When you've completed the questionnaire you can return it to us by mail using the self-addressed, stamped envelope that will be enclosed with your questionnaire.

There are no risks to you or discomforts expected other than the possible inconvenience of taking about 30 minutes of your time to complete the questionnaire. There are no direct benefits to you for being in this study. However, a possible benefit of being in the study is that the findings may help health care professionals and others learn more about the effects of the opinions of older adults' opinions on their health and well-being.

Any information obtained in connection with this study that can be identified with you will remain confidential and will not be known by anyone except the researchers. The information gathered about you will be coded with a number so that it cannot be identified with you. Your name will not be used. There will be no cost to you for your participation in the study, and you will receive no compensation for participating in the study.

Your decision about whether or not to participate will not affect your relationship with ----- or with The University of Texas at Austin. If you decide to participate, you are free to discontinue your participation at any time. If you have any questions, you may contact the principal investigator, Mary Knill, by telephone at (512) ###-####. She will be happy to answer any questions you may have.

Thank you for considering participating in this study. If you decide to participate, please fill out and return the second page of this letter in the enclosed self-addressed, stamped envelope.

Cordially,

Dr. Gayle J. Acton, Ph.D., RN
Former Board Chair for -----

APPENDIX B. FORM AGREEING TO PARTICIPATE OR DECLINING PARTICIPATION

Dear Participant,

As you have read in the accompanying letter, we are conducting a study of health and well-being in older adults. If you are over the age of 60, your participation in this study would be greatly appreciated. Your identity and confidentiality will be protected at all times. Your participation, or lack of participation, will not change your relationship with -----or with the University of Texas at Austin. If you have any questions, please feel free to call me at 512-###-####. Please complete this form and return it in the envelope provided.

Cordially,

Mary K. Knill, M.A.
Principal Investigator

<input type="checkbox"/> Yes, I would like to receive a questionnaire for your study.
Name _____
Address _____
City/State/Zip Code _____
Telephone Number _____

No, I am not willing and/or able to participate in your study at this time.

Please check all that apply (you do not need to provide your name above):

1. I am not over the age of 60.
2. I am physically unable to participate.
3. I am just not interested in participating at this time.
4. I do not see any value in this type of research.
5. Other _____

Please return this completed form in the postage-paid envelope provided.

Thank you for your time!

APPENDIX C. COVER LETTER ACCOMPANYING THE QUESTIONNAIRE

Dear Friend of -----,

Thank you for responding to our previous letter and for volunteering to participate in our study about the health and well-being of older adults. Our names are Gayle Acton, former Board Chair of ----- and professor at the University of Texas at Austin, and Mary Knill, principal investigator and graduate student at the University of Texas at Austin. You were selected as a possible participant in this study because you are age 60 or older and/or are associated with ----- . You will be one of about 375 subjects to participate in this study.

This package contains a questionnaire and a self-addressed stamped envelope for you to use in returning your completed questionnaire. The questionnaire will ask you about your activities, your personality, and some general questions about your health and well-being. Also, the questionnaire will ask you to tell us information such as your age, gender, and marital status. We would greatly appreciate it if you could complete the questionnaire and return it to us by mail using the self-addressed, stamped envelope within two weeks of receiving the questionnaire.

There are no risks to you or discomforts expected other than the possible inconvenience of taking about 30 minutes of your time to complete the questionnaire. There are no direct benefits to you for being in this study. However, a possible benefit of being in the study is that the findings may help health care professionals and others learn more about the effects of attitudes of older adults on their health and well-being.

By returning the enclosed questionnaire you are giving your consent to participate in the study. However, any information obtained in connection with this study that can be identified with you will remain confidential and will not be known by anyone except the researchers. The information gathered about you will be coded with a number so that it cannot be identified with you. Your name will not be used. There will be no cost to you for your participation in the study, and you will receive no compensation for participating in the study.

Your decision about whether or not to participate will not affect your relationship with ----- or with The University of Texas at Austin. If you decide to participate, you are free to discontinue your participation at any time. If you have any questions, you may contact the principal investigator, Mary Knill, by telephone at (512) # #- #####. She will be happy to answer any questions you may have. If you have questions about your rights

as a research participant, please contact Clarke A. Burnham, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 232-4383.

Thank you for your time and willingness to participate in this study.

Cordially,

Dr. Gayle J. Acton, Ph.D., RN
Former Board Chair for -----

APPENDIX D: DEMOGRAPHIC INFORMATION

1. What is your date of birth (month/day/year)?
2. What is your sex? Male, Female
3. Please check the race or ethnic background that best describes you. Choose only one.
 - a. White, non-Hispanic
 - b. White, Hispanic
 - c. Black, non-Hispanic
 - d. Black, Hispanic
 - e. American Indian
 - f. Asian or Pacific Islander
 - g. Other
4. What is your marital status?
 - a. Never married.
 - b. Married.
 - c. Divorced.
 - d. Widowed.
5. What is your household income?
 - a. Under \$20,000
 - b. \$20,000-\$39,999
 - c. \$40,000-\$59,999
 - d. \$60,000-\$79,999
 - e. \$80,000-\$99,999
 - f. \$100,000-\$119,999
 - g. \$120,000-\$139,999
 - h. over \$140,000
6. What level of education did you complete?
 - a. High school or below
 - b. Some college
 - c. College degree (bachelor's degree)
 - d. Master's degree
 - e. Advanced graduate degree (e.g., doctor of philosophy or doctor of medicine)
7. How many children do you have who are still living?
8. How many grandchildren do you have who are still living?

APPENDIX E. SELF-RATING OF HEALTH (KRAUSE, ELLISON, & MARCUM, 2002)

1. In general, would you say that your health is:

- a. Excellent
- b. Very good
- c. Good
- d. Fair
- e. Poor

2. I am as healthy as anybody I know.

- a. definitely true
- b. mostly true
- c. don't know
- d. mostly false
- e. definitely false

3. My health is excellent.

- a. definitely true
- b. mostly true
- c. don't know
- d. mostly false
- e. definitely false

APPENDIX F. PHYSICAL HEALTH STATUS (JOHNSON ET AL., 1993)

Please check conditions that your doctor has ever told you you have:

1. coronary heart disease
- _____ 2. chronic bronchitis
- _____ 3. emphysema
- _____ 4. high blood pressure
- _____ 5. stroke
- _____ 6. diabetes
- _____ 7. chronic back pain
- _____ 8. allergies
- _____ 9. arthritis
- _____ 10. cirrhosis
- _____ 11. multiple sclerosis
- _____ 12. Parkinson's disease
- _____ 13. cancer

APPENDIX G: SATISFACTION WITH LIFE SCALE (SWLS) (DIENER, EMMONS, LARSEN, & GRIFFIN, 1985)

Below are five statements with which you may agree or disagree. Using the scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. [Scale: 1 = Strongly disagree; 2 = Disagree; 3 = Slightly disagree; 4 = Neither agree nor disagree; 5 = Slightly agree; 6 = Agree; 7 = Strongly agree]

1. In most ways, my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far, I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

APPENDIX H: SOCIAL INTEREST SCALE (CRANDALL, 1981) “PERSONAL TRAIT VALUE SCALE”

“Below are a number of pairs of personal characteristics or traits. For each pair, choose the trait which you value more highly. In making each choice, ask yourself which of the traits in that pair you would rather possess as one of your *own* characteristics. For example, the first pair is “imaginative/rational.” If you had to make a choice, which would you rather be? Write 1 or 2 on the line in front of the pair to indicate your choice. Some of the traits will appear twice, but always in combination with a different other trait. No pairs will be repeated. Be sure to choose one trait in each pair.” (Crandall, 1981, p. 26)

I would rather be...

- | | | | |
|-------------------|--|-------------------|---|
| <hr/> | 1. imaginative
2. rational | <hr/> | 1. neat
2. logical |
| <hr/>
1 | 1. helpful
2. quick-witted | <hr/>
1 | 1. forgiving
2. gentle |
| <hr/>
2 | 1. neat
2. sympathetic | <hr/>
2 | 1. efficient
2. respectful |
| <hr/> | 1. level-headed
2. efficient | <hr/> | 1. practical
2. self-confident |
| <hr/>
2 | 1. intelligent
2. considerate | <hr/>
2 | 1. alert
2. cooperative |
| <hr/> | 1. self-reliant
2. ambitious | <hr/>
2 | 1. imaginative
2. helpful |
| <hr/>
1 | 1. respectful
2. original | <hr/>
2 | 1. realistic
2. moral |
| <hr/> | 1. creative
2. sensible | <hr/> | 1. popular
2. conscientious |
| <hr/>
1 | 1. generous
2. individualistic | <hr/>
1 | 1. considerate
2. wise |
| <hr/> | 1. responsible
2. likable | <hr/> | 1. reasonable
2. quick-witted |
| <hr/>
2 | 1. capable
2. tolerant | <hr/>
1 | 1. sympathetic
2. individualistic |
| <hr/>
1 | 1. trustworthy
2. wise | <hr/>
2 | 1. ambitious
2. patient |

APPENDIX I. THE LOYOLA GENERATIVITY SCALE (MCADAMS & DE ST. AUBIN, 1992, P. 1015)

For each of the following statements, please indicate how often the statement applies to you, by marking either a “0,” “1,” “2,” or “3” in the space in front. Mark “0” if the statement never applies to you; mark “1” if the statement only occasionally or seldom applies to you; mark “2” if the statement applies to you fairly often; and mark “3” if the statement applies to you very often or nearly always. (McAdams, de St. Aubin, & Logan, 1993, p. 223).

1. I try to pass along the knowledge I have gained through my experiences.
2. I do not feel that other people need me.
3. I think I would like the work of a teacher.
4. I feel as though I have made a difference to many people.
5. I do not volunteer to work for a charity.
6. I have made and created things that have had an impact on other people.
7. I try to be creative in most things that I do.
8. I think that I will be remembered for a long time after I die.
9. I believe that society cannot be responsible for providing food and shelter for all homeless people.
10. Others would say that I have made unique contributions to society.
11. If I were unable to have children of my own, I would like to adopt children.
12. I have important skills that I try to teach others.
13. I feel that I have done nothing that will survive after I die.
14. In general, my actions do not have a positive effect on others.
15. I feel as though I have done nothing of worth to contribute to others.
16. I have made many commitments to many different kinds of people, groups, and activities in my life.
17. Other people say that I am a very productive person.
18. I have a responsibility to improve the neighborhood in which I live.
19. People come to me for advice.
20. I feel as though my contributions will exist after I die.

APPENDIX J: INFORMAL SOCIAL SUPPORT SCALE (NESSE, ET AL, 2002)

1. How often do you get together with friends, neighbors or relatives and do things like go out together or visit in each other's homes?
 - a. More than once a week
 - b. About once a week
 - c. 1 to 3 times a month
 - d. Less than once a month
 - e. Never

2. In a typical week, about how many times do you talk on the telephone with friends, neighbors or relatives?
 - a. More than once a day
 - b. About once a day
 - c. 2 to 3 times a week
 - d. About once a week
 - e. Less than once a week
 - f. Never

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Vita

Mary Katherine Knill was born in New Orleans, Louisiana, on December 6, 1963, the daughter of Ronald and Barbara Knill. After graduating from St. Mary's Dominican High School, she attended Tulane University in New Orleans. She graduated in 1985 with a Bachelor of Arts degree, majoring in American History and French with a focus on secondary education. In 1987 she received a Master of Arts degree in American History from Tulane University. From 1988 to 1997 she worked as an archivist with the National Archives and Records Administration in Washington, D.C., and the Lyndon B. Johnson Library and Museum in Austin, Texas. In 1998 she took a position in policy and strategic planning at the National Archives. During this time she taught in a G.E.D. training program for immigrants and took psychology classes at the University of Maryland at College Park. In 2000 she entered the Educational Psychology graduate program at The University of Texas at Austin. She has taught at Austin Community College and continues her work as an archivist at the LBJ Library.

Permanent address: 1212-A Taulbee Lane, Austin, Texas 78757

This dissertation was typed by the author.