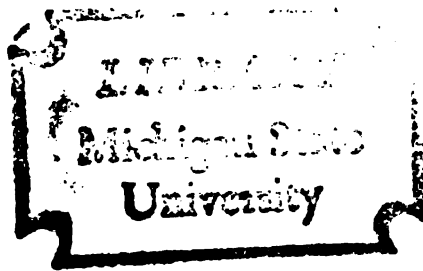CONSISTENCY THEORY, ACTIVITY THEORY, AND
DISENGAGEMENT THEORY: PERSONAL RESOURCES
AND ENVIRONMENTAL DEMANDS AS PREDICTORS OF
CONTENTMENT IN THE AGING

Dissertation for the Degree of Ph. D.
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CAROLE OVERMIER BETTINGHAUS
1976

This is to certify that the

thesis entitled

Consistency Theory, Activity Theory and Disengagement Theory: Personal Resources and Environmental Demands as Predictors of Contentment ` in the Aging

presented by

Carole Overmier Bettinghaus

has been accepted towards fulfillment of the requirements for

___Ph.D.___ degree in _Psychology_

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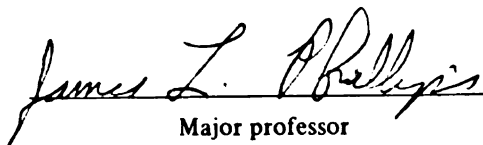Date _February 2, 1977_

ABSTRACT

CONSISTENCY THEORY, ACTIVITY THEORY, AND DISENGAGEMENT
THEORY: PERSONAL RESOURCES AND ENVIRONMENTAL DEMANDS
AS PREDICTORS OF CONTENTMENT IN THE AGING

By

Carole Overmier Bettinghaus

The purpose of this study is to test three sets of hypotheses
representing three theories of successful aging: consistency theory,
activity theory, and disengagement theory. Successful aging may be
defined as growing older while maintaining a relatively high level
of general satisfaction with one's life.

Historically, the two competing theories have been activity
theory and disengagement theory. The former theory states that con-
tinuing middle aged activities is related to high satisfaction for
the aging. The latter theory holds that disengagement amounts to
withdrawal of the aging person and society from each other. In the
course of this withdrawal the aging person accepts and, perhaps,
desires decreased interaction. Disengagement theory claims that
disengagement and satisfaction are positively related. Findings
have been equivocal regarding these two theories.

Recently a third theoretical position has been advanced by
Gubrium, which we have labeled consistency theory. This theory holds
that satisfaction of the elderly person will be high when personal

resources are consistent with environmental demands, and satisfaction will be low when personal resources are inconsistent with environmental demands.

The data for this study were gathered in conjunction with the experimental evaluation of a health care service provided in private residences by a team of professionals. All data were obtained from persons who did not receive the experimental service. Data were collected in two interviews, separated by approximately six months.

The sample consisted of 280 persons, 45 or older, having chronic physical impairment of various degrees of severity, who resided in a private residence at the time of the first and second interview. Hypotheses of the study were tested on the total sample and on the sample subdivided into a sample of 155 older persons of 65 or more, and a sample of 125 younger persons of 45 to 64.

For each theory, hypotheses have been formed following four paradigms of the relationships between the "time" of the independent variables and the criterion. Between the first and second interview the sample size decreased considerably, due to experimental mortality which was largely true mortality. Three of the four paradigms utilize data from the reduced sample.

To study the hypothesized effects of the theories we used a scale of contentment as a measure of satisfaction. The independent variables used were (1) age environment, (2) residential location of primary care giver, (3) spouse survival, (4) days of bed disability, (5) independence in activities of daily living, and (6) financial ability.

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Each of the 12 hypotheses has been evaluated using five different two-by-two fixed factor analyses having unequal cell frequencies. Both analysis of covariance and analysis of variance were computed using a least squares model. Age of the subject was the covariate for all four paradigms and prior score on contentment was the second covariate when the criterion was contentment measured at the second interview.

Results of the study point to activity theory as the strong leader among the three theories. Consistency theory is second to activity theory. We were led to reject disengagement theory. In discussing these results, problems with choice of variables were identified which suggest these results may be artifactual. It is suggested that activity theory is tied to physical health, consistency theory is tied to social health, and disengagement theory is tied to psychological health.

CONSISTENCY THEORY, ACTIVITY THEORY, AND DISENGAGEMENT

THEORY: PERSONAL RESOURCES AND ENVIRONMENTAL DEMANDS

AS PREDICTORS OF CONTENTMENT IN THE AGING

By

Carole Overmier Bettinghaus

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CHAPTER I

BACKGROUND AND RATIONALE

Introduction

In recent years social scientists have focused their attention on several minorities. Most of these groups have attained prominence as a result of audible demands either for them or by them, rather than on the basis of their numerical growth. One minority group, however, has gained new attention not by speaking louder, but by increasing its membership. This is the group identified as the elderly.

The increased membership of older persons in today's society is related to increases in economic surpluses which have made possible the alleviation of body-breaking toil and physical fatigue through labor-saving machinery and the 40 hour week, and the virtual elimination of contagious diseases through the charitable and tax-supported funding of medical research. As the elderly have become more numerous, they have gained added attention from business, government, education, and behavioral science establishments.

The field of gerontology has emerged, and has stimulated controversy over explanations of "successful" aging. The two major

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1

theoretical positions which have been advanced are referred to as
"activity theory" and "disengagement theory." Recent attempts to
resolve the controversy over the usefulness of these two theories
have led to the advancement of a third type of theory, which we have
labeled "consistency theory." Gubrium (1972) has been the major
proponent of a consistency approach to the explanation of successful
aging.

Activity theory is the more familiar of the two major the-
ories. Its popularity may, in part, be a consequence of cultural
values for progress, industry, and achievement. Many similarly
worded cultural expressions provide reinforcement of these values,
and the part played by activity in their achievement. In addition,
there are popular beliefs that "staying active" will overcome most
situations which have negative value in the culture, such as grief,
fear, loneliness, worry, conflict, and frustration. In the early
years of gerontological research, activity theory was an unstated
assumption, and remains pervasive.

Disengagement theory, as stated by Cumming, Dean, and
Newell (1958) and elaborated by Cumming and Henry (1961), has fewer
cultural roots and is less well understood. Disengagement is char-
acterized by withdrawal of the aging person and society from each
other. In the course of this withdrawal the aging person accepts
and, perhaps, desires decreased interaction. Disengagement is classi-
fied as a concomitant to successful aging, by these authors.

In the ensuing eighteen years since this controversy began,
the activity theory has been stated more formally and the two theories

have been discussed by a number of authors (Birren, et al., 1972; Blenkner, 1958; Bortner, 1966; Brown, 1974; Carp, 1968; Cumming, Dean, Newell, & McCaffrey, 1960; Cumming, 1963; Havighurst, 1968; Lemon, et al., 1972; Lipman & Smith, 1968; Lowenthal, 1965; Lowenthal & Boler, 1965; Maddox, 1963, 1964, 1965; Martin, 1973; Neugarten, 1972; Prasad, 1964; Rose, 1964; Tallmer & Kutner, 1970; Tissue, 1968; Youmans, 1969; among others). The consistency position has been discussed more recently by a smaller group of authors (Loeb, Pincus & Mueler, 1966; Tissue, 1971; Gubrium, 1972; Martin, 1973).

No one has, as yet, attempted to compare all three theories of successful aging. The purpose of this study is to test each of three sets of hypotheses. Each set of hypotheses will be designed to represent one of the theories: consistency theory, activity theory, or disengagement theory.

Successful aging which is referenced repeatedly in the disengagement-activity controversy has been operationalized in various ways. Typically, however, it is defined as the achievement, by an older person, of a relatively high score on some measure of morale, satisfaction, or happiness. Thus, the criterion for success in aging has been hedonistic.

In earlier phases of the activity/disengagement controversy, other criteria were used. These have been listed by Havighurst (1961) as:

> (1) A way of life that is socially desirable for this age group (normatively defined), (2) Maintenance of middle-age activity, (3) A feeling of satisfaction with one's present status and activities (nonindependent of disengagement and/or activity), and (4) A feeling of happiness and satisfaction with one's life (in general) (pp. 9-10).

In the present study, the criterion measure for successful aging is a five-item scale of "contentment" which was developed by Blenkner, Bloom, and Weber (1964). It is an instrument for measurement of general happiness and satisfaction.

This report is organized into four chapters. The first chapter deals with an introduction to the matters and materials of the study; including sections on: (1) the gerontological theories of successful aging, (2) empirical findings related to successful aging, (3) rationale of the study, and (4) hypotheses of the study. The second chapter treats the methodology and procedures of the study, including sections on: (1) the context in which the study was conducted, (2) identification of the sample, (3) characteristics of the sample, (4) operationalizing the variables, (5) research paradigms for the hypotheses, and (6) analysis of the data.

The third chapter reports the results from (1) the total sample, (2) the older sample, and (3) the younger sample. For each sample, a report is made of the frequencies, and means and standard deviations of the criterion variable, with the results which are reportable for (1) analysis of covariance and (2) analysis of variance. The fourth chapter is a discussion generated by the results; and is subdivided into (1) a discussion of the present study, with a section for each gerontological theory, and (2) a discussion of a variety of suggestions for future research aimed at deciphering the process of successful aging.

The Gerontological Theories

The Activity Theory-Disengagement Theory Controversy

Much of the research conducted has been equivocal, and research purporting to support either activity or disengagement theories can be questioned on the basis of nonrepresentativeness of the sample, questionable research methodology or noncomparability of measures (Birren, et al., 1972; Blenkner, 1958; Bortner, 1966; Maddox, 1963, 1964, 1965; Rose, 1964; Tallmer & Kutner, 1970; Tibbitts & Schmelzer, 1965; & Youmans, 1969).

Some authors have ably described activity theory, while others have covered disengagement theory thoroughly. However, the clearest contrast between the two theories has been presented by Havighurst, Neugarten and Tobin (1968), who emphasize that neither theory fully accounts for all the empirical evidence, although each of the two older theories can claim some support from findings.

These authors view "activity" as a construct for explaining the later years of life as a direct extension of the active life style of middle age. In opposition to this, they view "disengagement" as a developmental construct for explaining the later years of life as a life style changed from that of middle age.

They also make the important distinction that activity theory views the older person as an antagonist to society, struggling to maintain an activity pattern of a middle aged person, in the face of the withdrawal of society from contact with the older person. In the disengagement view they characterize the relationship between the

older person and society as mutual and cooperating, with both the older person and society working to change the life style of the elderly person after middle age.

Maddox (1964) emphasizes some assumptions of the disengagement theory which have been neglected by Havighurst and his collaborators: "(1) that the process of social and psychological withdrawal is modal for the aging population, (2) that this process is both intrinsic and inevitable, and (3) that the disengagement process is not only a correlate of successful aging but also probably a condition of it" (p. 80).

Most authors have assumed that support for disengagement is equivalent to nonsupport for the activity formulation. It is possible that failure to recognize an area where the two constructs do not completely overlap has led to some of the inconclusive research results. The two constructs of activity and disengagement may be treated as two dimensions. The relationship of the two dimensions may be schematized as orthogonal, and each dimension may be simplified to include only polar values, as in Figure 1.

	Engagement Dimension	
Activity Dimension	Disengaged Persons	Engaged Persons
Active Persons	Active and Disengaged Persons	Active and Engaged Persons
Inactive Persons	Inactive and Disengaged Persons	Inactive and Engaged Persons

Figure 1. Types of older persons defined by activity and engagement.

In her writing Cumming (1963) has called attention to the existence of persons who although disengaged, remain active, while doubting that it is possible to be engaged and inactive at the same time. Maddox (1965), in discussing the problem, identified the group of persons whose activity may decrease, while they remain engaged, as one overlooked by researchers. Failure to recognize that some older persons belong to each of these "mixed" groups, would have led researchers to treat activity and engagement as a single dimension because they saw the two constructs as strongly correlated.

Havighurst, Neugarten, and Tobin (1968) point to another distinction regarding disengagement and activity theory which may be related to the types of persons defined in Figure 1. They distinguish between social engagement and psychological engagement, equating social engagement with easily observed social interaction, activity, and participation, while equating psychological engagement with subjectively perceived involvement, emotional investment, preoccupation, and commitment. For this discussion, it is convenient to relabel the dimensions of Figure 1, as has been done in Figure 2.

	Psychological Engagement Dimension	
Social Engagement Dimension	Psychologically Disengaged Persons	Psychologically Engaged Persons
Socially Engaged Persons	Socially Engaged, Psychologically Disengaged Persons	Socially and Psychologically Engaged Persons
Socially Disengaged Persons	Socially and Psychologically Disengaged Persons	Socially Disengaged, Psychologically Engaged Persons

Figure 2. Types of older persons defined by social and psychological engagement.

They go on to indicate that activity theory assumes that social disengagement can occur without psychological disengagement, and this is consistent with the stand identified above by Maddox. They also indicate that it is assumed in disengagement theory the two types of disengagement accompany each other, or that psychological disengagement precedes social disengagement. This is based upon the developmental aspect of disengagement theory. Such assumptions are consistent with the stand identified above by Cumming.

The activity disengagement controversy has thrived in the field of gerontology recently. On the one hand the two theories were defined as opposite in type and in their predictions for the older person and society. On the other hand the researchers involved overlooked the existence of older persons who embodied "mixed" levels of engagement and activity. Both facts led to an antagonistic view and an antagonistic stance in research strategy. Finally, the theoretical picture was confused further by a distinction between social and psychological disengagement, with social engagement appearing to be not greatly different from activity.

Reconciling the Controversy

In discussing his results, Martin (1973) offers what appears to be the most empirically based discussion of the reconciliation of the two theories based upon the relation of the two dimensions of activity and engagement. Martin describes a situation in which a group of older persons have moved, or plan to move, into a retirement community which will separate them from their family relations

(disengagement), and which they all expect will give them a lot of activities with their age peers (activity). This example seems equivalent to maintaining a high level of activity in a constricted number of roles.

Gubrium (1972) proposes a method for resolving the conflict between the activity and disengagement theoretical positions. His proposal is based partially upon an earlier (1970) study and partially upon an important underlying assumption:

> . . . let us assume that persons feel most satisfied with themselves and their living conditions when there is congruency between what is expected of them by others of significance and what they may expect of themselves. Any inconsistency between these two bodies of expectations will be said to lead to life dissatisfaction among the aged (pp. 282-3).

For Gubrium, who the significant others are depends upon whether or not the person's age environment is concentrated, or nonconcentrated, and what they may expect of themselves is dependent upon the person's behavior flexibility, measured in terms of health, solvency, and ongoing social support.

Gubrium essentially discusses a two pronged position: (1) When the demands of the environment (of an older person) for flexibility of the person, are consistent with the person's ability to be flexible, morale will be high. (2) When there is inconsistency between the environment's demands for flexibility and the person's ability to be flexible, morale will be low.

The underlying assumption indicates that Gubrium has adopted a consistency position to explain the occurrence of successful aging. Although he is the first to advance exactly this statement of a

consistency model for successful aging, other authors have fore-

shadowed his idea. Tissue, (1971) proposed that consistency of life

space and "disengagement potential" influenced morale. Loeb, Pincus,

and Mueller (1966) speak of consistency between living space/social

space and variables such as time perspective, "biography," physiologi-

cal status and psychological disposition. These authors also mention

that any reorganization of these variables occurs gradually for an

individual.

The model which Gubrium (1972) presents indicates a construct

of the elderly person's environment which includes (1) a social con-

text and (2) an individual context. In defining "the social context"

of the elderly person's environment, Gubrium refers to "normative out-

comes of social homogeneity, residential proximity, and local protec-

tiveness" (p. 282). He then outlines the process by which he

theorizes these normative outcomes arise:

> . . . as the local environments of the aged become concen-
> trated with old people, it is likely that local activity norms
> become age-linked, i.e., persons' expectations on each other's
> behavior become rooted in relatively common rather than
> diverse experiences. If such age concentrated environments
> are proximate as well as age-homogeneous and exhibit relative
> continuity as such, then what Rose calls a "sub-culture of
> aging" will probably emerge. The behavioral implication of
> such a subculture is that the activity that is expected of
> persons, sanctioned, or labeled as deviant, is significantly
> different from that in age-heterogeneous locales.
> . . . . In highly heterogeneous environments the variety of
> situations that persons are likely to encounter are maximal.
> This implies that any person must have a sufficient command
> of himself to "make out" as Goffman states, from one situation
> to the next. The resources he possesses then must be suffi-
> ciently endowed so as to allow him to fulfill a variety of
> expectations. Now what of homogeneous environments? The
> variety of situations with which persons are confronted here
> are quite narrow in terms of demands on flexibility. Facility
> in one situation is likely to mean facility in most (p. 282).

Gubrium goes on to explain that "the individual context" of the elderly person's environment refers to "activity resources such as health, solvency, and social support that influence behavior flexibility."

The Gubrium model will be further specified in the sections of this chapter which deal with the rationale and research hypotheses of the present study. Having discussed the theoretical positions regarding the variables related to successful aging, we now turn our attention to the reported empirical findings. Many of these findings have been reported without a theoretical framework.

Correlates of Successful Aging

Adams (1971) claims that the concepts of satisfaction, personal adjustment, positive self-concept, self-esteem, and morale have been used interchangeably to operationalize successful aging. Because of this, the range of variables which have been correlated with successful aging is quite large. A content analysis of eight articles, completed in conjunction with this study, yielded a set of 59 variables related to successful aging. Of these, 38 were listed only once among the eight articles.

Among the 21 variables which were reported in more than one of the eight articles there was poor agreement between authors regarding the type of classification to be assigned to each variable (Adams, 1971; Bortner & Hultsch, 1970; Edward & Klemmack, 1973; Lawton, 1972; Maddox, 1963; Palmore & Luikhart, 1972; Spreitzer & Snyder, 1974; Tobin & Neugarten, 1961).

In 1971, Adams prepared a review article of the "Correlates of Satisfaction Among the Elderly." Figure 3 is reproduced from that article. It summarizes the complexity of reported findings as a simple + or - sign, indicating the direction of the relationship established by earlier research, between specific variables and the variable of satisfaction. In such a summary approach, some important details are lost, such as the type of statistical test used, the strength of the relation, the type of measurement used for the variables and the number of replications represented.

Table 1 is an update of the review done by Adams, adding data from six additional studies which he had not included in his review (Bortner & Hultsch, 1970; Edwards & Klemmack, 1973; Goodman, Dye, Harel & Bley, 1971; Maddox, 1963; Palmore & Luikhart, 1972; Spreitzer & Snyder, 1974). In Table 1, column A indicates the number of replications of positive (+) or negative (-) findings reported in the Adams review article. Each of the six additional columns report the value of findings reported in one of the six additional studies. The total column represents the sum of replicated positive findings for each variable. A positive finding is a positive relation (not necessarily a correlation) between successful aging and the variable of interest. All the variables from the Adams study for which findings were replicated have been included in Table 1, along with a few selected additional variables.

This data on replication of findings gives us an understanding of how confident we may be in each variable as a reliable "correlate"

Selected Correlates of Satisfaction, Personal
Adjustment, Positive Self-Concept, Self-
Esteem, "Morale," or Other Indicators
of Psychological Well-Being

Biological Correlates:
  (+) good health (Jeffers & Nichols, 1961; Loeb et al., 1963;
      Marshall & Eteng, 1970)
  (-) physical disability (Lowenthal & Boler, 1965)
  (-) advancing age (Kutner et al., 1956)
  (0) advancing age (Maddox & Eisdorfer, 1962; Pihlblad &
      McNamara, 1965)
  (-) to age 75 or 80 (0 or +) thereafter (Loeb et al., 1963)

Psychological Correlates:
  (+) perception of health as "good" (Hansen & Yoshioka, 1962)
  (-) perception of age as "old" (Hansen & Yoshioka, 1962;
      Phillips, 1961)
  (-) perception of life space as contracting (Lipman, 1961;
      Tobin & Neugarten, 1961)
  (-) perception of relative deprivation (Phillips, 1961)
  (-) feeling of inadequacy by males or of rejection by females
      (Lieberman, 1960)
  (+) "vocabulary of motives" to justify low status
      (Gillespie, 1968)
  (+) favorable pre-retirement attitude (Thompson, 1958)
  (+) accurate pre-conception of retirement (Thompson, 1958)
  (+) belief in afterlife (Jeffers & Nichols, 1961)

Sociological Correlates: Personal Characteristics
  (0) rural-urban residence (Hansen & Yoshioka, 1962)
  (+) high socio-economic status (Kutner et al., 1956)
  (+) high education (Hansen & Yoshioka, 1962; Marshall & Eteng,
      1970)
  (+) high income (Hansen & Yoshioka, 1962; Marshall & Eteng,
      1970; Thompson, Streib, & Kosa, 1963)
  (+) income maintenance (Lloyd, 1955; Loeb et al., 1963)
  (+) income adequacy (Hansen & Yoshioka, 1962; Thompson, 1958)
  (+) home ownership (Hansen & Yoshioka, 1962)
  (+) supported independence from family (Townsend, 1963)
  (+) living alone, but not isolated (Loeb et al., 1963)

Figure 3. Direction of several variables related to satisfaction
      reported by Adams. (From "Correlates of Satisfaction
      Among the Elderly" by D. L. Adams, The Gerontologist,
      1971, 11, 66.)

Sociological Correlates: Roles and Role Changes
  (+) continuity of life styles (Williams & Wirths, 1965)
  (+) retaining past patterns of living (Zborowski & Eyde, 1962)
  (+) higher role counts (Lipman & Smith, 1968; Tobin & Neugarten, 1961)
  (+) large social life space (Lipman, 1961; Tobin & Neugarten, 1961)
  (+) being married (Hansen & Yoshioka, 1962; Kutner et al., 1956)
  (-) widowhood (Lopata, 1968; Lowenthal, 1965)
  (+) being employed (Hansen & Yoshioka, 1962; Kutner et al., 1956)
  (-) retirement (Kutner et al., 1956; Lipman, 1961; Loeb et al., 1963; Lowenthal, 1965; Thompson, 1958)
  (+) retirement for females (Loeb et al., 1963)
  (+) retirement for non-whites (Lloyd, 1955)
  (+) length of retirement to 3-7 years (-), thereafter (Marshall & Eteng, 1970)
  (+) if made preparations for retirement (Marshall & Eteng, 1970)
  (+) if retirement is voluntary (Thompson et al., 1963)
  (0) if retirement is voluntary (Lowenthal, 1965)
  (-) if reluctant to retire (Thompson, 1958)
  (-) if retired because of "poor health" (Marshall & Eteng, 1970)
  (+) if household tasks are assumed, by males, after retirement (Lipman, 1961)

Sociological Correlates: Social Relations and Activities
  (+) high level of interaction (Anderson, 1967b; Lipman, 1961; Tobin, 1961)
  (+) high level of engagement (Lipman, 1961)
  (+) high level of activity (Maddox & Eisdorfer, 1962)
  (+) high level of social relations (Davis, 1962; Rosow, 1967)
  (+) high age density of neighborhood (Rosow, 1967)
  (+) if member of a reference group (Phillips, 1961)
  (+) if in a "useful contribution climate" (Filer & O'Connell, 1962)
  (+) high friendship association (Lemon et al., 1969; Lloyd, 1955)
  (-) loss of friends (Lopata, 1968)
  (-) inability to make new friends (Lopata, 1968)
  (+) if satisfied with amount of contact with friends and relatives (Loeb et al., 1963)
  (+) high interpersonal relations with children, relatives and friends (Kutner et al., 1956)
  (+) if member of family group (Townsend, 1963)
  (0) level of association with relatives, neighbors, or formal or solitary activities (Lemon et al., 1969)

Figure 3.   (Cont'd).

TABLE 1: Replicated Relationships Between Several Variables and Satisfaction.

	A	B	E	G	L	M	P	S	Total
Demographic Variables									
Employed/Retired	+7		0		+1	+1	0		+9
Income Level	+3	0	+1	0			0		+4
Marital Status	+4	0	0				0		+4
Educational Level	+2	0	+1				0		+3
Occupation Type		0				+1			+1
Socio-Economic Level	+1								+1
Church Attendance			+1						+1
Age	-2	0	0		0	-1	0		-3
Sex (of Self)		0	0		0	-1	0		-1
Family Size	-1		0						-1
Rural/Urban	0		0						0
Race (of Self)		0							0
Health Variables									
Actual Health	+3				+1				+4
Physical Disability	-1				-1	+1			-2+1
Self-Perception Variables									
Perception of									
Financial Adequacy	+4			+1				+1	+6
Self-Perceived Health	+1	+1				+1	+1	+1	+5
Self-Perceived Age	+2								+2
Self-Feelings		+1							+1
Self-Perceived Activity					+1				+1
Psychological Variables									
Feelings of Usefulness						+1			+1
Absence of Clinical Depression						+1			+1
Belief in Internal Control							+1		+1
Social Variables									
Interaction Index	+3								+3
Friendship Association	+2		+1						+3
Activity	+1				+1	+1			+3
Role Count	+2								+2
Life Space	+2		0				0		+2
Interpersonal Relations	+1								+1
Organizational Activity							+1		+1
Contact with Others			0						0

Note.
A=Adams, 1971
B=Bortner & Hultsch, 1970
E=Edwards & Klemmack, 1973
G=Goodman, Dye, Harel, & Bley, 1971

L=Lawton, 1966
M=Maddox, 1963
P=Palmore & Luikhart, 1972
S=Spreitzer & Snyder, 1974

of successful aging. We can have some confidence in the reliability

of: (1) employment status, (2) self-perceived health, (3) self-

perception of financial adequacy, (4) actual income level, and (5)

marital status as correlates of satisfaction, since each of these

has been supported in four or more pieces of independent research.

Rationale of the Study

Consistency Theory

This study proposes to approach the study of successful aging

by testing the consistency model suggested by Gubrium (1972), against

the disengagement and activity theories of aging which were previously

summarized. Gubrium's model suggests four postulates, although he

does not state them explicitly. In these postulates age environment

is one factor, the second factor is activity resources and satisfac-

tion/morale is the criterion.

1. Elderly persons in nonconcentrated, demanding age
    environments with high activity resources will
    exhibit high satisfaction/morale (consistent situa-
    tion).

2. Elderly persons in concentrated, nondemanding age
    environments with low activity resources will exhibit
    high satisfaction/morale (consistent situation).

3. Elderly persons in nonconcentrated, demanding age
    environments with low activity resources will exhibit
    low satisfaction/morale (inconsistent situation).

4. Elderly persons in concentrated, nondemanding age
    environments with high activity resources will
    exhibit low satisfaction/morale (inconsistent
    situation).

He reasons that inconsistency is related to low satisfaction/

morale in the situation found in postulate three because the older

person is unable to perform as a "typical member" of the age

subculture. He describes persons referred to in postulate four as "bitter and humiliated."

It appears that Gubrium has been strongly influenced by the theoretical position of symbolic interaction espoused by Arnold Rose (1964). His proposed consistency model and attendant postulates are based upon the symbolic interaction of an aging person with his/her environment. Another indication of the influence of a symbolic interactionist framework is his warning that under the condition in which interaction is inoperative, consistency may also be inoperative. In reference to his basic assumption, which was stated earlier, he says:

> It is safe to make such an assumption provided that the situation of self-regard is the same as the situation in which persons experience the expectations of others referring to self. If these situations are not the same, then the costs to self-conception of any changes in others' definitions of self may easily be nil. For an old person, what this infers is that if he commits his behavior and orients his mind to others in his locale, then how they conceive of him will influence his action. But, on the other hand, if "he's in it but not with it," then the mechanism of congruency may be inoperative (p. 283).

In addition to the general theory of symbolic interaction, support for the proposed consistency model could also be interpreted as giving support to the general behavioral theory of relative deprivation. Sherwood and Nadelson (1968), in testing such a theory as predictive of "despair" in the elderly, found it to be more predictive of despair than a developmental theory. Despair may be conceived of as a polar opposite to contentment. They pointed to three postulates of relative deprivation theory:

> The basic postulate of relative deprivation theory is that the greater the perceived differences between current circumstances and more favorable circumstances of peers in one's reference group, the greater the feelings of deprivation leading to despair, low morale and misery. . . . The theory

of relative deprivation . . . postulates the importance of
introspection at almost every point in a person's life . . .
it is possible to postualte feelings of relative deprivation
. . . in terms of the perceived difference between one's own
present unfavorable circumstances and previous success . . .
(and) the greater the disparity between anticipated degree
of loss and actual perceived loss, the greater the impact on
feelings of deprivation and resultant despair (pp. 414-416).

Should the present test of a consistency model for the pre-
diction of level of satisfaction/morale prove successful, it will
remain impossible to decipher whether the outcome is related to
external pressures for consistency such as are treated in symbolic
and social interaction, or internal pressure for consistency such
as are treated in perception, cognition, and introspection about
relative deprivation. In all likelihood, both internal and external
processes are necessary to obtain a consistent outcome for an indi-
vidual. This study will undertake to compare the applicability of
consistency, disengagement, and activity theories of successful aging.
To do so, each theory will be tested for ability to predict degree of
successful aging, measured as contentment.

The Criterion Measure "Contentment"

Havighurst (1961) has identified at least four different
typologies of criteria of "successful aging." It is the criterion
of "a feeling of (general) happiness and satisfaction with one's
life" (p. 10) which has become the standard utilitarian criterion for
successful aging in the majority of studies. However, adoption of a
standard concept of satisfaction/morale as a criterion for successful
aging is only the first step toward clarification. No standard data
collection instrument for assessment of general satisfaction has been

widely accepted. Adams (1971) summarized the confusion about the operational definition of general satisfaction:

> . . . the difficulty of trying to assess "individual well-being" has resulted in a variety of concepts, definitions, and measurements, most of which are related either semantically or empirically, but some of which are culturally or subculturally biased. Among these are the concepts of satisfaction, happiness, morale, successful aging, adjustment, adaptation and positive self-image. The measurements have ranged from observation of overt behavior to self-reporting indices to thematic apperception interpretations (p. 64).

In this study, we have adopted a five item measure of satisfaction/morale, the contentment scale developed by Blenkner, Bloom, and Weber (1964). For a discussion of the many other measures currently in use for measurement of satisfaction/morale, see Appendix A.

Blenkner and her collaborators (1964) obtained a concurrent validity of .69 for the contentment scale in relation to a five place observer's rating scale using independent raters. This scale is reported by Bloom (1975) to have a correlation of .29 with Powell Lawton's (1972) morale scale.

The scale's developers found a reliability of .88 (KR formula #21) for an earlier 19 item version of the contentment scale. Use of the Spearman Brown Prophecy Formula reveals that the expected reliability for the five item version of the contentment scale would be .65. In the hypotheses which follow, "contentment" will be operationalized using this scale.

The First Factor--Age Environment

In this study data on age environment was available only for the residential environment. Two qualities of each person's age

environment are the structure and the process which are involved. Structure of the age environment is classified as "concentrated" if all the persons in the age environment are of an age similar to the subject, and classified as "nonconcentrated" if any of the persons in the age environment are of a dissimilar age. Process in the age environment is classified as "demanding" if living in such an environment demands many responsibilities or duties of the subject, and classified as "nondemanding" if living in such an environment demands few responsibilities and duties of the subject.

The combination of structure and process creates four potential cross-classifications: (1) concentrated and demanding, (2) concentrated and nondemanding, (3) nonconcentrated and demanding, and (4) nonconcentrated and nondemanding. We have predicted that there will be a strong negative correlation between structure and process, with an increase in the similarity of age related to a decrease in demands, and a decrease in the similarity of age related to an increase in demands. For that reason, we have combined the first and second cross-classification into a classification of concentrated and nondemanding, and we have combined the third and fourth cross-classification into a classification of nonconcentrated and demanding. Coding into these two classifications is done on the basis of the age structure within the subject's residence, and the process or demand characteristic is assumed to ride on the coat tails of the age structure.

The Second Factor--Ability Resources

We have followed Gubrium's suggestion that health, solvency, and social support are the three types of variables which may be considered as ability resources. It was necessary that we work with available measures from an existing data set. Within that data set, two measures have been identified as measures of physical health. One of these measures is the number of days within the past two weeks that the subject has spent all or most of the day in bed. This is akin to a measure of "sick days" and few such days should indicate a high level of health, while more such days should indicate a low level of health.

The other of these measures is the number of activities of daily living the subject needs the aid of another person to accomplish. The six activities of daily living are bathing, dressing, transferring from bed to chair or from chair to standing, self-care in toileting, continence of bowel and bladder, and self-care in eating. To the extent that the subject needs the aid of another, this is a measure of disability. To the extent that help is not needed, this may be perceived as a measure of health or physical well-being.

Within the data set two measures have been identified as measures of social support. Both measures are natural dichotomies. The first of these is whether or not the subject has a living spouse. Such a resource is perceived as a physical, psychological, and financial support as well as a social support. The second of these is whether the person who serves as primary care giver to the subject lives in the same building, or in a different building. A primary

care giver was defined as the relative or friend giving the most

direct help to the subject with matters of personal care and household

tasks. This constitutes a measure of how readily accessible the PCG

is to the subject. It is believed that a readily accessible PCG gives

a greater degree of physical, psychological, and social support to the

subject than is the case if the PCG is not readily accessible.

Finally, two measures of solvency or financial support were

identified in the data set. One was the annual family income for the

subject's residential family. The other was an index of economic

dependence, which is a composite of three dichotomous items, employment

or unemployment, home ownership or no home ownership, and receipt of

public aid or no receipt of public aid. The poles of this latter

measure must be reversed to use it as a measure of solvency, with

low financial dependence indicating high financial support and high

financial dependence indicating low financial support. Further

details regarding these measures will be found in Chapter 2.

Chronological Relationships
of Hypotheses--Paradigms

For each of the three theories of successful aging four dif-

ferent forms of hypotheses will be developed. Each of the four forms

of hypotheses will reflect a different time relationship of the

criterion and independent variables. The two times referred to in

the hypotheses are time #1, the first wave of data collection, and

time #2, the second wave of data collection, approximately six months

after time #1. Each form amounts to a pattern of relationship of the

independent variables and criterion which will be repeated, with slight alteration, to fit each theory. The forms or patterns will be referred to as "paradigms."

In the first paradigm, which we will label "cross-sectional," both the independent variables and the criterion are measured at time #1. This amounts to a fairly straightforward procedure, and is essentially the basic hypothesis and least complex of the four paradigms.

In the second paradigm, which we will label "delayed cross-sectional," both the independent variables and the criterion are measured at time #2. Although this may appear to be a simple replication of the first paradigm on the same sample at a later time, it really amounts to the same basic hypothesis applied to a decreased sample and altered set of data. In the first place, we expect the size of the study sample left alive at time #2 to be noticeably smaller. The selective loss of persons due to death is also expected to change the group values of all the independent variables in a biased manner.

While the sampling and selection procedures will be detailed in Chapter II, it is important to know that the sample at time #1 will have been selected for the study through an acute care hospitalization, or an outpatient visit. Because of this, it will represent a type of extreme group. We expect the survivors of such an extreme group to change or regress toward the means of the independent and criterion variables by time #2. While the effect of regression to the mean should depress the ability to support the hypothesis, the

selective loss due to death may enhance the ability to support the hypothesis. Since it is not entirely clear what effect the two processes will have in combination, the test of the "delayed cross-sectional" paradigm of the basic hypothesis is important.

The third paradigm will be labeled "chronological lag." In this pattern, the independent variables are from time #1, and the dependent or criterion variable is from time #2. Many balance theorists have remarked upon the gradualness of cognitive reorganization or restructuring. Recognition that such a gradual change may be in effect under the circumstances which we are concerned with has led us to test a hypothesis that the state of independent variables at an earlier time may relate to the state of a dependent variable at a later time. This paradigm can make use of only the sample which survives at the later time.

The fourth paradigm also must be tested on the sample surviving at the later time. It will be labeled "chronological anticipation." In this pattern, the independent variables are from time #2, and the dependent or criterion variable is from time #1.

Normal humans have the ability to bind time, predict future states of independent variables from their present store of knowledge, and make preparation for the future based on those predictions. Cognitive activity preparing for the future may cause real changes in cognitive structure, if an individual strives to maintain a balanced cognitive state. Through such changes in cognitive structure, related to preparation for predicted changes, it can happen that a

dependent variable will assume a changed state prior to the accomplishment of the predicted change in independent variables.

Such changes in person's states, which cannot be attributed to present circumstance, but can be attributed to reliably predicted future circumstance, are frequently labeled as "anticipation." The runner who "jumps the gun" and the "sour grapes" behavior of the person who predicts future self-failure are both types of anticipation. Through testing this fourth paradigm we will test the criterion at an earlier time, in association with the actual occurrence of a change in the independent variables at a later time.

We did not have measures available of the subject's predictions of future levels of the independent variables. If such measures had been available, the anticipatory effect could be tested with a paradigm which used the criterion from time #1 and the predicted level of the independent variables, which had been measured at time #1. In that situation, the sample for testing the hypothesis would be larger, consisting of all persons in the sample at time #1.

The fourth paradigm, which we have used to test for anticipation effect, calls for a test which is imperfect, since it does not include a test of the anticipation experienced by nonsurvivors, and infers the prediction, at an earlier time, of a change in independent variables from evidence that a change has occurred in the independent variables at a later time. The data representing independent variables in this fourth paradigm will be inaccurate if the change observed has not been predicted or if a predicted change does not occur.

The four paradigms will be discussed further in the next chapter. All paradigms and theoretical alterations for the three theories of successful aging will be given as 12 separate hypotheses at the end of this chapter. The number (1-4) in the notation of each of the hypotheses indicates the paradigm number.

The Research Hypotheses

The Consistency Hypotheses

The major purpose of the present paper is to test Gubrium's underlying assumption by testing the four postulates which were formulated from the Gubrium position against hypotheses derived from disengagement and activity theory. Inspection of the language of the four consistency postulates reveals a pattern which is reducible to a single summarizing statement of Gubrium's consistency position:

> Contentment, among the elderly, is dependent upon an interaction between activity resources and age environment. The form of the interaction is such that contentment will be high when either of the following situations exists:
> A. Activity resources of the individual are high, and age environment is nonconcentrated and demanding.
> B. Activity resources of the individual are low and age environment is concentrated and nondemanding.

The first two research hypotheses are related to direct test of Gubrium's assumption and its attendant postulates, at two different times. The two times referred to in the hypotheses are time #1,

first wave of data collection, and time #2, second wave of data collection, approximately six months after time #1. For each of the four consistency hypotheses (denoted by the "C" in the notation) the form of the interaction is defined as in the summarizing statement, above.

Ho1C: Contentment, among the elderly, measured at time #1 is dependent upon an interaction between activity resources measured at time #1 and age environment.

Ho2C: Contentment, among the elderly, measured at time #2 is dependent upon an interaction between activity resources measured at time #2 and age environment.

In addition, it may be that the effect of an interaction between the two variables will not be immediately measurable. Although Gubrium makes no mention of such a possibility, Loeb, Pincus, and Mueller (1966) mention as one of the three characteristics of a "congruent reorganization" that: "any contraction occurs gradually, i.e., there is no sudden collapse of any dimension." To test for such a time lag in the hypothesized interaction effect, a third hypothesis is needed.

Ho3C: Contentment, among the elderly, measured at time #2 is dependent upon an interaction between activity resources measured at time #1 and age environment.

Finally, it may be that the effect of an interaction between the two factors will be noticable prior to the actual occurrence of the interaction, as though anticipation were at work. That leads to the fourth in this set of consistency hypotheses.

Ho4C: Contentment, among the elderly, measured at time #1 is dependent upon an interaction between activity resources measured at time #2 and age environment.

The Activity Hypotheses

In opposition to the four interaction hypotheses based upon Gubrium's consistency approach to successful aging, are several main effect hypotheses which are related to disengagement and activity theories of successful aging. These hypotheses are designed specific to certain factors and directions of the main effects.

The following is a summary statement of activity theory assumptions in regard to the types of variables available in this study.

Contentment, among the elderly, is dependent upon main effects for

A. Independence in activities of daily living (independence associated with higher content-ment, dependence associated with lower con-tentment).

B. Days of bed disability (no days associated with higher contentment, 1-14 days associated with lower contentment).

Other main effects which may be indirectly related to activity theory are:

1. Non-concentrated, demanding (vs. concentrated, nondemanding) age environment, which would be expected to demand more kinds and amounts of activity from the older person;

2. Spouse survival (vs. spouse non-survival), which is expected to demand more task-oriented activity and allow more leisure activity;

3. Primary care giver residing in a different building (vs. the same building), which is expected to place some burden on the older person to manage self-care matters personally;

4. High financial ability (vs. low financial ability), which is expected to make available the opportunity for more leisure and elective activities, such as travel, education, shopping, etc.

The first two research hypotheses in regard to activity theory are related to HolC and Ho2C. All activity theory hypotheses will be denoted by the appearance of "A" in the notation. The direction of all hypothesized main effects for activity theory will be as defined earlier, in the summary statement.

HolA: Contentment, among the elderly, measured at time #1 is dependent upon main effects for:

 a. Independence in activities of daily living measured at time #1.

 b. Days of bed disability measured at time #1.

Ho2A: Contentment, among the elderly, measured at time #2 is dependent upon main effects for:

 a. Independence in activities of daily living measured at time #2.

 b. Days of bed disability measured at time #2.

The next two hypotheses for activity theory are related to Ho3C and Ho4C in a parallel fashion.

Ho3A: Contentment, among the elderly, measured at time #2 is dependent upon main effects for:

 a. Independence in activities of daily living measured at time #1.

 b. Days of bed disability measured at time #1.

Ho4A: Contentment, among the elderly, measured at time #1
is dependent upon main effects for:

   a. Independence in activities of daily living
measured at time #2.

   b. Days of bed disability measured at time #2.

The Disengagement Hypotheses

The following is a summary statement of disengagement theory
assumptions which are available for testing in this study:

Contentment, among the elderly, is dependent upon a main
effect for age environment. (Concentrated, nondemanding
associated with higher contentment, non-concentrated,
demanding associated with lower contentment.)

Other main effects which may be indirectly related to dis-
engagement theory are:

1. Dependence (vs. independence) in activities of daily
living, which is expected to allow the person to
disengage from responsibility for performance of ADL;

2. Some days (vs. no days) of bed disability, which is
expected to allow the person to disengage from inter-
action outside a single room;

3. Spouse non-survival (vs. spouse survival), which is
expected to demand that there be disengagement from
the spouse, and allow disengagement from married-set
friends;

4. Primary care giver residing at the same building (vs. a
different building), which is expected to allow the
disengagement from persons and places outside of the
residential building;

5. Low financial ability (vs. high financial ability),
which is expected to demand disengagement from an
expensive life style, and activities of a middle aged
person.

The disengagement theory hypotheses for this study will all be notated with a "D" and the four disengagement hypotheses are related to the four consistency hypotheses, Ho1C to Ho4C, stated earlier. The direction of the main effect for each hypothesis is as defined earlier, in the summary statement.

Ho1D: Contentment, among the elderly, measured at time #1 is dependent upon a main effect for age environment measured at time #1, when crossed with factors measured at time #1.

Ho2D: Contentment, among the elderly, measured at time #2 is dependent upon a main effect for age environment measured at time #1, when crossed with factors measured at time #2.

Ho3D: Contentment, among the elderly, measured at time #2 is dependent upon a main effect for age environment measured at time #1, when crossed with factors measured at time #1.

Ho4D: Contentment, among the elderly, measured at time #1 is dependent upon a main effect for age environment measured at time #1, when crossed with factors measured at time #2.

Although the main effects referred to in the first and fourth disengagement hypotheses and in the second and third disengagement hypotheses are essentially the same main effects, we have stated four hypotheses, rather than two, to continue the parallelism between disengagement hypotheses and the four hypotheses of the other two theories. However, we may expect slightly different results for the main effects in the first and fourth hypotheses, due to the difference in the sample sizes on which the analyses will be performed. Such a difference in results is not expected between the main effect results for the second and third hypotheses, since they are tested on relatively equal samples.

In Chapter II the differences in these samples will be described. That chapter also contains a description of the operationalization of the variables, diagrams of paradigms for each hypotheses, and the details of the analyses used to test the hypotheses.

CHAPTER II

METHODOLOGY AND PROCEDURES

Context of This Study

This study has been conducted in conjunction with research
evaluating a demonstration of home health care service. The demon-
stration project was implemented at two urban and three rural sites
in the state of Michigan between August, 1973, and June, 1976, by
staff of the Office of Health Services, Education and Research,
College of Human Medicine, Michigan State University. The home care
service being demonstrated and field-tested consisted of the care of
chronically impaired individuals in their residences, rather than in
an institutional setting. This service was rendered by teams consist-
ing of: (1) a part-time physician, (2) a half-time supervising
nurse or social worker, and (3) two full-time health assistants. The
services provided to patients included health assessment, health edu-
cation, therapy, social, psychological, and financial counseling of
patient and family, referral to other agencies, transportation,
limited homemaking, and limited nursing services.

In the demonstration project, data was gathered from a group
of subjects who served to pretest the evaluation procedures, and who
were not included in the evaluation of the demonstrated service.
This pretest group of subjects was chosen by the same criteria and
from the same screening sources as the subjects who participated in

the evaluation. The criteria for choosing the subjects were that they be: (1) 45 years of age or older, (2) chronically impaired, (3) in need of the types of services which could be provided by the home care service, and (4) not in need of 24-hour supervision or skilled nursing care.

Subjects were screened for these entry criteria either while they were inpatients about to be discharged from a hospital, or as outpatients in ambulatory health care clinics. Those subjects who were judged eligible to be included in the evaluation study were randomly assigned into two approximately equal-sized groups. The experimental group was offered the demonstration home care service. The control group was not offered the demonstration service, but was not restrained from access to any of the health care services normally available to such persons in each community.

Informed consent was obtained from each subject before any interviews were conducted. The interviewers were trained research workers, not involved in any way in the provision of the demonstrated home health care service. Subjects in the experimental group and control group were interviewed three times. Approximately six months separated succeeding interviews. These interviews will be referred to as time #1, time #2, and time #3. Subjects in the pretest group were interviewed at time #1 and time #2 only. Further interviews were not necessary in order to pretest the procedures for the follow-up interviews.

Identification of the Sample

Since the sample for the present study was chosen from among the subjects in the home health care demonstration described above, it consists basically of persons 45 or older, who have been identified as having chronic physical impairment of various degrees of severity. For purposes of this study two added restrictions were employed, that each subject have at least one cohabitant and that the subjects be living in a residential setting at the time of all the interviews utilized in the study. In an attempt to obtain nearly equal numbers of subjects from rural and urban settings, the sample was restricted to one of the urban sites and two of the rural sites. At those three sites, the sample was further restricted to include only persons in the pretest group and the control group, none of whom were offered any of the experimental home health care service.

The study sample identified in this manner included 280 subjects. At time #1 this sample was decreased, due to 20 interviews with missing data, to a size of 260. At time #2 the sample was decreased still more, due to experimental and/or actual mortality of 79 subjects during the six-month interval and 12 interviews with missing data, to a size of 189. No data was reported for time #3, since the pretest group included in the sample for this study was not interviewed at time #3.

The sample identified in this manner was not intended to be representative of the entire population of elderly persons. There was no intention to estimate population parameters from the results of this study. Neither should this sample be mistaken for a sample

representative of all elderly persons who are "sick." This sample
was deficient as a representative sample of the sick and elderly for
the following reasons: (1) it included pre-elderly persons (45 to
less than 65), (2) it did not include the institutionalized elderly,
(3) it did not include the elderly in need of skilled nursing care
and/or 24-hour-a-day supervision, (4) it excluded the sick elderly
newly hospitalized for an episode of acute illness, (5) it excluded
the sick elderly not availing themselves of health care facilities,
and (6) it included those persons recently discharged from a hospital
who may have been in a state of relatively good health.

Although the basic characteristics of this sample were
tailored for use in the home health care demonstration project, the
sample also had characteristics which satisfied several important
needs in testing the hypotheses of this study.

Limitation of the sample to persons who were judged to be
chronically impaired was expected to have the effect of providing
more nearly equal groups of subjects with high and low activity
resources than if the sample had been chosen as representative of
the general population. In the general population, we would expect
to obtain a much larger frequency of subjects in the high group than
in the low group. This is an important consideration for data
analysis used to test the study's hypotheses.

A second consideration in choosing a sample limited in this
manner was that the resource abilities of such a sample were char-
acterized as dynamic, subject to fairly rapid shifts through a
relatively wide range of levels. This allowed one to expect changes

in activity resources large enough to be observable, and observable during relatively short time periods.

The major focus of the four hypotheses was the effect of certain variables as they operate for the elderly. However, persons in their late middle years (over 45 and under 65 years of age) were included in the sample so that the effects could be compared at ages defined as elderly and middle aged.

Characteristics of the Sample

Table 2 presents the data obtained for type of site, age, sex, ethic group, marital status, highest occupation and educational attainment.[1] The data are tabled by frequency and percentage for the 280 subjects in the total sample at time #1 and for the 201 subjects in the total sample at time #2. All the subjects described for time #2 were included in the description for time #1. The third column of the table accounts for the group of 79 subjects lost between time #1 and time #2. For a few of the characteristics, there are small amounts of missing data. Data is complete for all samples for the characteristics of type of site, age, and sex. The characteristic of highest occupation has the most missing data, with eight missing cases at time #1 and five missing cases at time #2.

The age reported in this table is the age of the participant at the time of screening for the study. The differential percentages by sex reported for this sample are not extraordinary, since

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[1]See Appendix B for items and code book.

Table 2: Characteristics of Subjects in Total Sample at Time #1 and #2.

Characteristics of Subjects		Time #1 Sample (N = 280)		Time #2 Sample (N = 201)		Sample Lost (at Time #2) Due to Experimental and/or Actual Mortality (N = 79)	
		N	%	N	%	N	%
Type of Site	Urban	136	48.6	96	47.3	40	50.6
	Rural	144	51.4	105	52.2	39	49.4
	$\bar{X}$	66.5		66.2		NA[a]	
Age	45 to <65	125	44.6	92	45.8	33	41.8
	≥65	155	55.4	109	54.2	46	58.2
Sex	Male	119	42.5	86	42.8	33	41.8
	Female	161	57.5	115	57.2	46	58.2
Ethnic Group	White	240	86.0	172	86.0	68	86.0
	Black	39	14.0	28	14.0	11	14.0
Marital Status	Married	186	66.4	138	68.7	48	60.8
	Divorced/Separated	22	7.9	15	7.5	7	8.9
	Widowed	65	23.2	44	21.9	21	26.6
	Never Married	7	2.5	4	2.0	3	3.8
Highest Occupation	Higher Executives and Higher Professionals	2	.7	1	.5	1	1.3
	Business Managers and Lesser Professionals	9	3.2	8	4.1	1	1.3
	Administrative Personnel	36	13.2	24	12.2	12	15.8
	Clerical, Sales and Technical	49	18.0	36	18.4	13	17.1
	Skilled Manual Labor	42	15.4	31	15.8	11	14.5
	Semi-Skilled Manual Labor	66	24.3	47	24.0	19	25.0
	Unskilled Manual Labor	53	19.5	36	18.4	17	22.4
	Housewife	15	5.5	13	6.6	2	2.6
Educational Attainment	Graduate Degree	2	.7			2	2.6
	Bachelor's Degree	6	2.2	4	2.0	2	2.6
	Some College	19	6.9	16	8.1	3	3.8
	High School Grad.	31	11.2	24	12.1	7	9.0
	10th-11th Grade	45	16.3	29	14.6	16	20.5
	7th-9th Grade	118	42.8	85	42.9	33	42.3
	Less than 7th Grade	55	19.9	40	20.2	15	19.2

Note. N and % of all non-missing data has been reported for each characteristic. Small amounts of missing data reduce the sample size for some variables.

[a]NA = datum not available.

females survive longer than males[1] and are known to utilize health care facilities in larger numbers than males.[2]

Table 3 presents the data for the characteristics of the primary care giver (PCG) as to: (1) sex of the subject and sex

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[1]"The mortality sex ration (age-specific death rate for the specified year for the male population divided by the corresponding age-specific death rate for the female population), for the (United States) population as a whole, did not change appreciably over the study years: for 1950, 1960, and 1969 the death rates for the male population were, respectively, 1.34, 1.36, and 1.35 times the corresponding rates for the female population." Furthermore, the mortality sex ratio was greater than unity for each 5-year age-specific sub-population during these three report years.

In summary, more males die than females, at all ages, in recent U. S. population history; and over all ages, death rates are at a ratio of approximately four (for males) to three (for females).

From: U. S. Department of Health, Education, and Welfare. Mortality Trends: Age, Color, and Sex, United States--1950-69. Vital and Health Statistics Data from the National Vital Statistics System, Series 20--Number 15, DHEW Publication No. (HRA) 74-1852. Public Health Service, Health Resources Administration, Rockville, Maryland, 1973, pp. 20 and 30.

[2]The numbers of discharges from short-stay hospitals for the United States population over 45, in 1972, was: 6,480,000 for males and 7,619,000 for females.

From: U. S. Department of Health, Education, and Welfare. Utilization of Short-Stay Hospitals: Summary of Nonmedical Statistics: United States--1972, Vital and Health Statistics Data from the National Health Survey, Series 13--Number 19, DHEW Publication No. (HRA) 75-1770. Public Health Service, Health Resources Administration, Rockville, Maryland, 1975, p. 3.

The numbers of physician visits for the United States population over 45, in 1969, was: 123,489,000 for males and 181,748,000 for females. For persons 45 to 64 years of age, males made an average of 4.1 physician visits per year, and females made an average of 5.2 such visits per year. For persons 65 years of age and older, males made an average of 5.5 physician visits per year, and females made an average of 6.6 such visits per year.

From: U. S. Department of Health, Education, and Welfare. Age Patterns in Medical Care, Illness, and Disability: United States, 1968-1969, Vital and Health Statistica Data from the National Health Survey, Series 10--Number 70, DHEW Publication No. (HSM) 72-1026. Public Health Service, Health Services and Mental Health Administration, Rockville, Maryland, 1972, p. 30.

Table 3: Characteristics of Primary Care Giver and Residence for Total Sample at Time #1
and #2.

Characteristics of Primary Care Giver		Time #1 Sample (N = 280)		Time #2 Sample (N = 201)		Sample Lost (at Time #2) Due to Experimental and/or Actual Mortality (N = 79)	
		N	%	N	%	N	%
Sex	Subject=female & PCG=male	83	29.6	63	31.3	20	25.3
Relation	Subject=female & PCG=female	78	27.9	52	25.9	26	32.9
	Subject=male & PCG=female	115	41.1	82	40.8	33	41.8
	Subject=male & PCG=male	4	1.4	4	2.0	--	--
Relation-	Spouse	152	54.3	113	56.2	39	49.4
ship	Child	68	24.3	50	24.9	18	22.8
	Other Relative	37	13.3	23	11.5	14	17.7
	Other Nonrelative	23	8.2	15	7.5	8	10.1
Characteristics of Subject's Residence							
Length	Less than 1 Year	44	15.8	26	13.0	18	23.1
of Time at	1 Year - 5 Years	62	22.3	45	22.5	17	21.8
Residence	5 Years - 10 Years	32	11.5	29	14.5	3	3.8
	10 Years or more	140	50.4	100	50.0	40	51.3
Number of	One Cohabitant	155	55.8	117	58.5	38	48.7
Cohabitants	Two Cohabitants	53	19.1	39	19.5	14	17.9
	Three Cohabitants	19	6.8	9	4.5	10	12.8
	Four Cohabitants	21	7.6	16	8.0	5	6.4
	Five or more Cohabitants	30	10.7	19	9.5	11	14.1
Owner of	Landlord	47	17.3	30	15.3	17	22.7
Residence	Other Resident	53	19.6	33	16.8	20	26.7
	Self or Spouse	171	63.1	133	67.9	38	50.7
Head of	Self	130	48.5	96	50.3	34	44.2
Household	Spouse	83	31.0	62	32.5	21	27.3
	Other Person	55	20.5	33	17.3	22	28.6

Note. N and % of all non-missing data has been reported for each characteristic. Small
amounts of missing data reduce the sample size for some variables.

of the PCG in combination, and (2) family relationship of the PCG.[1]
Table 3 also presents residential characteristics for subjects in
the total sample at the two different times and for those subjects
lost from the sample at time #2. These characteristics are: (1)
length of time the subject has lived at the residence, (2) number of
co-habitants of the subject at the residence, (3) type of person who
owns the residence, and (4) type of person who is head of the house-
hold.[2]

The PCG mentioned in Table 3 was defined as the person
(either relative or friend) who gives the subject the most direct
help with both personal care and household tasks. It is not sur-
prising that 79% of all PCG's are female. The helping role has been
a traditionally female role. This tradition is reflected in this
age-defined sample. Furthermore, more females than males are left
available to act as PCG.

It is noteworthy that only 17% lived in rental housing. In
Table 3 data is complete for all samples for the two characteristics
of the PCG. The characteristic, "head of household" has the most
missing data, with 12 missing cases at time #1 and 10 missing cases
at time #2.

In reading the data in Table 2 and 3, it should be remembered
that all data reported remains constant from time #1 to time #2.
Marital status, for example, may actually change during the six-
month period, but the data reported will not change. The differences

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[1]See Appendix B for items and codebook.

[2]See Appendix B for items and codebook.

observed at the two times between frequencies for classes of each characteristic are due only to the 79 cases lost to experimental and/or actual mortality.

Data from the total sample and from the two age subsamples will be analyzed to test the hypotheses. In Tables 2 and 3 data describing the total sample was reported. Tables 4 and 5 report data for the sample of persons 65 years of age and older (the older sample). Tables 6 and 7 repeat the descriptive report for the sample of persons 45 to less than 65 years of age (the younger sample).

A larger percentage of the older sample was white, located at a rural site, from the top four occupation classes, and widowed than the younger sample (see Table 4 and 6). Further comparison of the data in these two tables indicates that for the older sample, compared to the younger sample, a smaller proportion was divorced or separated and was at least a high school graduate. None of these differences is surprising, given the effects of social history as well as the effect of the differential placement in the life cycle of these two cohort groups.

To a great extent the sample lost between time #1 and time #2 was lost due to death, rather than to refusal or inability to locate the participant at the second interview. For the older sample, this lost group was more frequently rural, white, and widowed. For the younger sample, the lost group was more frequently urban, black, and divorced or separated. The overall effect of this differential loss to the two age groups, for type of site, ethnic group and marital

Table 4: Characteristics of Subjects in Older Sample at Time #1 and #2.

Characteristics of Subjects		Time #1 Sample (N = 155)		Time #2 Sample (N = 109)		Sample Lost (at Time #2) Due to Experimental and/or Actual Mortality (N = 46)	
		N	%	N	%	N	%
Type of Site	Urban	69	44.5	51	46.8	18	39.1
	Rural	86	55.4	58	53.2	28	60.9
	$\overline{X}$	75.4		75.2			
Age	45 to <65	--	--	--	--	--	--
	≥65	155	100.4	109	100.0	46	100.0
Sex	Male	65	41.9	46	42.2	19	41.3
	Female	90	58.1	63	57.8	27	58.7
Ethnic Group	White	138	89.1	95	87.2	43	93.5
	Black	17	10.9	14	12.8	3	6.5
Marital Status	Married	94	60.6	68	62.4	26	56.5
	Divorced/Separated	5	3.2	5	4.6	--	--
	Widowed	53	34.2	35	32.1	18	39.1
	Never Married	3	1.9	1	.9	2	4.3
Highest Occupation	Higher Executives and Higher Professionals	2	1.3	1	1.0	1	2.3
	Business Managers and Lesser Professionals	8	5.4	7	6.7	1	2.3
	Administrative Personnel	22	14.8	15	14.3	7	15.9
	Clerical, Sales and Technical	30	20.1	21	20.0	9	20.5
	Skilled Manual Labor	23	15.4	17	16.2	6	13.6
	Semiskilled Manual Labor	29	19.5	22	21.0	7	15.9
	Unskilled Manual Labor	24	16.1	13	12.4	11	25.0
	Housewife	11	7.4	9	8.6	2	4.5
Educational Attainment	Graduate Degree	2	1.3	--	--	2	4.3
	Bachelor's Degree	4	2.6	2	1.9	2	4.3
	Some College	9	5.8	7	6.5	2	4.3
	High School Grad.	10	6.5	8	7.4	2	4.3
	10th-11th Grade	22	14.3	15	13.9	7	15.2
	7th-9th Grade	74	48.1	52	48.1	22	47.8
	Less than 7th Grade	33	21.4	24	22.2	9	19.6

Note. N and % of all non-missing data has been reported for each characteristic. Small amounts of missing data reduce the sample size for some variables.

Table 5: Characteristics of Primary Care Giver and Residence for Older Sample at Time #1 and #2.

Characteristics of Primary Care Giver		Time #1 Sample (N = 155)		Time #2 Sample (N = 109)		Sample Lost (at Time #2) Due to Experimental and/or Actual Mortality (N = 46)	
		N	%	N	%	N	%
Sex	Subject=female & PCG=male	39	25.2	30	27.5	9	19.6
Relation	Subject=female & PCG=female	51	32.9	33	30.3	18	39.1
	Subject=male & PCG=female	62	40.0	43	39.4	19	41.3
	Subject=male & PCG=male	3	1.9	3	2.8	--	--
Relation-	Spouse	75	48.4	56	51.4	19	41.3
ship	Child	42	27.1	31	28.4	11	23.9
	Other Relative	26	16.7	13	11.9	13	28.3
	Other Nonrelative	12	7.8	9	8.2	3	6.5
Characteristics of Subject's Residence							
Length of	Less than 1 Year	23	14.9	12	11.1	11	23.9
Time at	1 Year - 5 Years	33	21.4	26	24.1	7	15.2
Residence	5 Years - 10 Years	15	9.7	15	13.9	--	--
	10 Years or more	83	53.9	55	50.9	28	60.9
Number of	One Cohabitant	101	65.6	78	72.2	23	50.0
Cohabi-	Two Cohabitants	24	15.6	15	13.9	9	19.6
tants	Three Cohabitants	7	4.5	4	3.7	3	6.5
	Four Cohabitants	8	5.2	4	3.7	4	8.7
	Five or more Cohabitants	14	9.0	7	6.5	7	15.2
Owner of	Landlord	17	11.3	13	12.3	4	9.1
Residence	Other Resident	40	26.7	22	20.8	18	40.9
	Self or Spouse	93	62.0	71	67.0	22	50.0
Head of	Self	70	46.7	53	50.5	17	37.8
Household	Spouse	41	27.3	31	29.5	10	22.2
	Other Person	39	26.0	21	20.0	18	40.0

Note. N and % of all non-missing data has been reported for each characteristic. Small amounts of missing data reduce the sample size for some variables.

Table 6: Characteristics of Subjects in Younger Sample at Time #1 and #2.

Characteristics of Subjects		Time #1 Sample (N = 125)		Time #2 Sample (N = 92)		Sample Lost (at Time #2) Due to Experimental and/or Actual Mortality (N = 33)	
		N	%	N	%	N	%
Type of	Urban	67	53.6	45	48.9	22	66.7
Site	Rural	58	46.4	47	51.1	11	33.3
	$\bar{X}$	55.5		55.5			
Age	45 to <65	125	100.0	92	100.0	33	100.0
	≥65	--	--	--	--	--	--
Sex	Male	54	43.2	40	43.5	14	42.4
	Female	71	56.8	52	56.5	19	57.6
Ethnic	White	102	82.2	77	84.6	25	75.8
Group	Black	22	17.7	14	15.4	8	24.2
Marital	Married	92	73.6	70	76.1	22	66.7
Status	Divorced/Separated	17	13.6	10	10.9	7	21.2
	Widowed	12	9.6	9	9.8	3	9.1
	Never Married	4	3.2	3	3.3	1	3.0
Highest Occupation	Higher Executives and Higher Professionals	--	--	--	--	--	--
	Business Managers and Lesser Professionals	1	.8	1	1.1	--	--
	Administrative Personnel	14	11.4	9	9.9	5	15.6
	Clerical, Sales and Technical	19	15.4	15	16.5	4	12.5
	Skilled Manual Labor	19	15.4	14	15.4	5	15.6
	Semiskilled Manual Labor	37	30.1	25	27.5	12	37.5
	Unskilled Manual Labor	29	23.6	23	25.3	6	18.8
	Housewife	4	3.3	4	4.3	--	--
Educational Attainment	Graduate Degree	--	--	--	--	--	--
	Bachelor's Degree	2	1.6	2	2.2	--	--
	Some College	10	8.2	9	10.0	1	3.1
	High School Grad.	21	17.2	16	17.8	5	15.6
	10th-11th Grade	23	18.9	14	15.6	9	28.1
	7th-9th Grade	44	36.1	33	36.7	11	34.4
	Less than 7th Grade	22	18.0	16	17.8	6	18.8

Note. N and % of all non-missing data has been reported for each characteristic. Small amounts of missing data reduce the sample size for some variables.

Table 7: Characteristics of Primary Care Giver and Residence for Younger Sample
at Time #1 and #2.

Characteristics of Primary Care Giver		Time #1 Sample (N = 125)		Time #2 Sample (N = 92)		Sample Lost (at Time #2) Due to Experimental and/or Actual Mortality (N = 33)	
		N	%	N	%	N	%
Sex	Subject=female & PCG=male	44	35.2	33	35.9	11	33.3
Relation	Subject=female & PCG=female	27	21.6	19	20.7	8	24.2
	Subject=male & PCG=female	53	42.4	39	42.4	14	42.4
	Subject=male & PCG=male	1	.8	1	1.1	--	--
Relation-	Spouse	77	61.6	57	62.0	20	60.6
ship	Child	26	20.8	19	20.7	7	21.2
	Other Relative	11	8.8	10	10.9	1	3.0
	Other Nonrelative	11	8.8	6	6.6	5	15.2

Characteristics of Subject's Residence

		N	%	N	%	N	%
Length of	Less than 1 Year	21	16.8	14	15.3	7	21.9
Time at	1 Year - 5 Years	29	23.4	19	20.7	10	31.2
Residence	5 Years - 10 Years	17	13.7	14	15.2	3	9.4
	10 Years or more	57	46.0	45	48.9	12	37.5
Number of	One Cohabitant	54	43.5	39	42.4	15	46.9
Cohabi-	Two Cohabitants	29	23.4	24	26.1	5	15.6
tants	Three Cohabitants	12	9.7	5	5.4	7	21.9
	Four Cohabitants	13	10.5	12	13.0	1	3.1
	Five or more Cohabitants	16	12.8	12	13.0	4	12.5
Owner of	Landlord	30	24.8	17	18.9	13	41.9
Residence	Other Resident	13	10.7	11	12.2	2	6.5
	Self or Spouse	78	64.5	62	68.9	16	51.6
Head of	Self	60	50.8	43	50.0	17	53.1
Household	Spouse	42	35.6	31	36.0	11	34.4
	Other Person	16	13.6	12	14.0	4	12.5

Note. N and % of all non-missing data has been reported for each characteristic.
Small amounts of missing data reduce the sample size for some variables.

status, was to make the two age group samples more comparable at time #2 than at time #1.

A similar assessment may be made of the two age samples by comparing Table 5 with Table 7. In the older sample, compared to the younger sample, females more frequently had a female PCG, while all participants more frequently had a child or other relative as a PCG, lived in their home for 10 years or more, had only one cohabitant, lived where the owner is an "other resident," and where the head-of-the-household was an "other person." At the same time, comparison of the two age samples showed that the older sample was less frequently cared for by a PCG who was a spouse, and was less frequently a renter.

The heavier loss of persons from the sample who had female PCGs, noted for the total sample, may be almost entirely accounted for within the older sample. Persons whose PCG was a relative other than a spouse or child were more frequently lost from the older sample, and were less frequently lost from the younger sample. This differential loss from the two age samples affected the sample proportions at time #2, making the two samples more comparable for this characteristic.

A similar effect of the loss of subjects from the two samples may be noted on other variables reported in Tables 5 and 7. The overall result is to move the two samples to greater comparability at time #2 on the characteristic of residential tenure of 10 years or longer, and the type of owner of the residence.

In general, the bias of sample loss produces greater similarity in the two age samples at time #2 than at time #1. Only three of the 12 hypotheses are tested on the sample at time #1. Because of the change in the nature of the age samples from time #1 to time #2, it is important to note this change in the nature of the sample when discussing the findings.

Operationalizing the Variables[1]

Criterion as Contentment

In this study the criterion variable of satisfaction/morale was operationalized using the five-item contentment scale developed by Blenkner, Bloom, and Weber (1964). This scale has a concurrent validity of .69 using independent data and a test-retest reliability of .65. Several of its items appear to have been borrowed from the Lawton 24-item morale scale. The contentment measure includes items on: (1) self-perceived health, (2) general satisfaction, (3) satisfaction with arrangements for housework and maintenance, (4) general worry, and (5) "things get worse as I get older." Individual items are dichotomous. This measure has been used as a six-place scale (R=0-5) with a high score of 5. The score is obtained by aggregating the number of items which were given "contented" responses by each subject.

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[1]For the form of the items used in interviewing the participants, the codebook, and method for constructing each of the following variables, see Appendix B.

Social Context as
Age Environment

The social context factor was operationalized as cohabitant age environment. The two levels of cohabitant age environment are: (1) concentrated, nondemanding cohabitant age environment, and (2) nonconcentrated, demanding cohabitant age environment. A nonconcentrated age environment was conceived of as one in which the subject lives with persons of a variety of ages. In such a setting, it was expected that the subject would be subjected to many demands regarding the subject's roles relative to each generation, as well as to heavy demands of the wider range of activities in a household with a wider age range. These demands take the form of implicit or explicit requests for accommodation of the subject's activity to the activities of the cohabitants. On the other hand, the concentrated age environment was conceived of as one in which the subject lives with persons of nearly the same age or older. In the concentrated age environment it was expected that the demands described above would be considerably lessened. Lessened demand on the subject was labeled "nondemanding."

A concentrated, nondemanding age environment was defined as one in which the subject lives with others, all of whom are either 45 or older, or younger than 45 but less than 10 years younger than the subject. A nonconcentrated, demanding age environment was defined as one in which the subject lives with others, at least one of whom is younger than 45 and 10 years or more younger than the subject.

Activity Resource as
Physical Health

The three variables which comprised the activity resources factor are physical health, social support, and financial ability. The first of these variables, physical health, was operationalized using two separate measures. The first measure was the number of days spent in bed for all or most of the day, during the past 14 days. This is a measure of morbidity adopted by the National Health Survey. The NHS definition of "Days of Bed Disability" specifies that days spent in hospitals, nursing homes, or other health care institutions be considered as bed disability days, whether the person is in bed most of the day or not. The range of this measure was originally 0-14 days with a score of 0 days indicating best health. For purposes of analysis in this study, it was dichotomized into: (1) zero days of bed disability (favorable), and (2) any number of days (1-14) of bed disability (unfavorable).

The second measure of physical health which has been used is Katz's independence of activities of daily living (ADL) (Katz, Ford, et al., 1963). This scale is formed by a count of the number of activities of daily living which the person performs independently. The six activities are: (1) bathing, (2) dressing, (3) toileting, (4) transferring (from bed to chair, etc.), (5) feeding self, and (6) control of elimination. The range as originally measured was 0-6 with a score of 6 indicating best health. For purposes of analysis in this study, ADL was dichotomized into: (1) independent in all six actities (favorable), and (2) dependent in any number (1-6) of the six activities (unfavorable).

Activity Resource as
Social Support

Social support, the second variable in the activity resources factor, was operationalized using two measures. The first measure was dichotomous for survival of spouse vs. nonsurvival of spouse. Persons who were never married were treated as having a nonsurviving spouse. The second measure was dichotomous for persons having primary care givers (PCGs) living in the same building vs. living in a different building. A PCG was defined as the person (either relative or friend) giving the subject the most direct help with both personal care and household tasks: things like bathing, dressing, laundry, cooking, shopping, cleaning, etc. PCG proximity was a two-place scale; either a PCG was identified who did not live with the subject, or a PCG was identified who lived in the same building with the subject.

Activity Resource as
Financial Ability

The third variable, financial ability, was measured in two ways, first as a six-place classification of annual family income, with a high score of 6; and second in terms of the index of economic dependence (IED), developed by Katz, Ford, et al. (1972). The IED is a four-place scale based upon: (1) employment, (2) home ownership, and (3) independence of assistance from private or public agencies. A score of 1 indicates greatest solvency or independence.

Because higher levels of missing data were obtained on both these two measures than on any of the other measures, and because the

missing data for these two measures was frequently found to be non-overlapping, a summary index of financial ability was constructed from a weighted average of these two measures. The weights used in this data reduction were the correlations of each measure with an unweighted average of the two measures.

The unweighted measure was obtained after substitution of the median value for missing data in either measure when valid data was present for the complement measure. The correlation of the two measures was computed to confirm the likelihood that they were measuring the same concept. The correlation obtained for the two measures was .40 at the initial interview (time #1), .34 at the six-month interview (time #2), and .37 at the initial interview (time #1) for subjects having a six-month interview (time #2). This summary measure of financial ability was the only measure used for testing hypotheses involving the financial ability aspect of the activities resources factor. For purposes of analysis, it was dichotomized at: (1) equal to or greater than its median, and (2) less than its median.

Paradigms for the Theories and Hypotheses

General Paradigms for the Three Theories

The general paradigm for consistency theory used in testing the four consistency hypotheses is schematized in Figure 4. In this model the criterion variable of satisfaction/morale, operationalized as contentment, is dependent upon an interaction between social context and individual context. The direction of the interaction is

INDIVIDUAL CONTEXT	SOCIAL CONTEXT	
	Local Environment	
Activity Resources	Age Environment	
Physical Health Social Support Financial Solvency	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity Resources	SATSIFACTION/ MORALE Contentment	SATISFACTION/ Contentment
LOW Activity Resources	SATISFACTION/ MORALE Contentment	SATISFACTION/ MORALE Contentment

Figure 4. General paradigm for consistency theory.

identified by the signs (> or <). The predictions for this paradigm were tested by examining the magnitude and direction of the appropriate interaction term for each of the four consistency hypotheses.

The paradigm for activity theory is shown in Figure 5. The activity and consistency paradigms differ in two ways. For the activity paradigm, the variable of individual context includes only the two measures which comprise the physical health portion of individual context in the consistency paradigm. Further, in the activity paradigm individual context is conceived of as "activity," rather than "activity resources." The direction of the hypothesized main effect on the variable of individual context is indicated by the signs (> or <).

Figure 6 shows the general paradigm for disengagement theory to the extent we were able to operationalize it within this study.

INDIVIDUAL CONTEXT	SOCIAL CONTEXT	
Individual Activity	Local Environment	
	Age Environment	
Independence of ADL Days Bed Disability	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity	SATISFACTION/ MORALE Contentment	SATISFACTION/ MORALE Contentment
LOW Activity	SATISFACTION/ MORALE Contentment	SATISFACTION/ MORALE Contentment

Figure 5. General paradigm for activity theory.

INDIVIDUAL CONTEXT	SOCIAL CONTEXT	
Activity Resources	Local Environment	
	Age Environment	
Physical Health Social Support Financial Solvency	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity Resources	SATISFACTION/ MORALE Contentment	SATISFACTION/ MORALE Contentment
LOW Activity Resources	SATISFACTION/ MORALE Contentment	SATISFACTION/ MORALE Contentment

Figure 6. General paradigm for disengagement theory.

It should be recognized that neither activity nor disengagement the-
ories were completely tested in this study. The loss of theoretic
detail is especially noticeable in disengagement theory. The hypothe-
sized main effect for higher contentment for persons in a concen-
trated, nondemanding (disengaged) age environment is in opposition
to the interaction effect of social and individual context which
marks the consistency theory approach. The hypothesized effect has
been indicated in Figure 6 by the direction of the signs (> or <).

Paradigms for the Four
Specific Hypotheses

Immediate Cross Sectional Paradigm and Hypotheses. This
paradigm (Figure 7-9) utilized cross sectional data from 260 of the
280 initial interviews (time #1) for which complete data were avail-
able. For the analyses of covariance, age of the subject at time of
screening into the study was used as the only covariate.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity Resources At Time #1	Contentment At Time #1	Contentment At Time #1
LOW Activity Resources At Time #1	Contentment At Time #1	Contentment At Time #1

Figure 7. Immediate cross sectional hypothesis--consistency theory
paradigm.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity At Time #1	Contentment At Time #1	Contentment At Time #1
LOW Activity At Time #1	Contentment At Time #1	Contentment At Time #1

Figure 8.   Immediate cross sectional hypothesis--activity theory paradigm.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity Resources At Time #1	Contentment At Time #1	Contentment At Time #1
LOW Activity Resources At Time #1	Contentment At Time #1	Contentment At Time #1

Figure 9.   Immediate cross sectional hypothesis--disengagement theory paradigm.

Hypotheses for each of the three theories were tested within this paradigm. The specific paradigm for consistency is shown in Figure 7, for activity in Figure 8, and for disengagement in Figure 9. The wording of the three hypotheses is repeated below for convenience. Within each paradigm the signs (> or <) indicate the direction of the hypothesized effect.

HolC: (Consistency Theory,see Figure 7.) Contentment, among the elderly, measured at time #1 is dependent upon an interaction between activity resources measured at time #1 and age environment.

HolA: (Activity Theory, see Figure 8.) Contentment, among the elderly, measured at time #1 is dependent upon main effects for:
a. Independence in activities of daily living measured at time #1
b. Days of bed disability measured at time #1.

HolD: (Disengagement Theory, see Figure 9.) Contentment, among the elderly, measured at time #1 is dependent upon a main effect for age environment measured at time #1 when crossed with factors measured at time #1.

Delayed Cross Sectional Paradigm and Hypotheses. This paradigm (Figure 10-12) utilized cross sectional data from 196 of the 201 six-month interviews (time #2) for which complete data were available. For the analyses of covariance, the two covariates were: (1) age of the subject at the time of screening into the study, and (2) prior score (time #1) of the subject on the criterion variable contentment. Hypotheses for each of the three theories were tested within this paradigm. The specific paradigm for consistency is shown in Figure 10, for activity in Figure 11, and for disengagement in Figure 12. The wording of the hypotheses is given below.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity Resources At Time #2	Contentment At Time #2	Contentment At Time #2
LOW Activity Resources At Time #2	Contentment At Time #2	Contentment At Time #2

Figure 10. Delayed cross sectional hypotheses--consistency theory paradigm.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity At Time #2	Contentment At Time #2	Contentment At Time #2
LOW Activity At Time #2	Contentment At Time #2	Contentment At Time #2

Figure 11. Delayed cross sectional hypotheses--activity theory paradigm.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity Resources At Time #2	Contentment At Time #2	Contentment At Time #2
LOW Activity Resources At Time #2	Contentment At Time #2	Contentment At Time #2

Figure 12.   Delayed cross sectional hypotheses--disengagement theory paradigm.

Ho2C: (Consistency Theory, see Figure 10.) Contentment, among the elderly, measured at time #2, is dependent upon an interaction between activity resources measured at time #2 and age environment.

Ho2A: (Activity Theory, see Figure 11.) Contentment, among the elderly, measured at time #2 is dependent upon main effects for:
   a.   Independence in activities of daily living measured at time #2
   b.   Days of bed disability measured at time #2.

Ho2D: (Disengagement Theory, see Figure 12.) Contentment, among the elderly, measured at time #2 is dependent upon a main effect for age environment measured at time #1, when crossed with factors measured at time #2.

Chronological Lag Paradigm and Hypotheses.   This paradigm (Figure 13-15) utilizes data from the initial interview (time #1) and the six-month interview (time #2) in combination. The number of such cases for which complete data were available was 196. For the analyses of covariance, the two covariates were:

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity Resources At Time #1	Contentment At Time #2	Contentment At Time #2
LOW Activity Resources At Time #1	Contentment At Time #2	Contentment At Time #2

Figure 13. Chronological lag hypothesis—consistency theory paradigm.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity At Time #1	Contentment At Time #2	Contentment At Time #2
LOW Activity At Time #1	Contentment At Time #2	Contentment At Time #2

Figure 14. Chronological lag hypothesis—activity theory paradigm.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity Resources At Time #1	Contentment At Time #2	Contentment At Time #2
LOW Activity Resources At Time #1	Contentment At Time #2	Contentment At Time #2

Figure 15. Chronological lag hypothesis--disengagement theory paradigm.

(1) age of the subject at the time of screening into the study, and

(2) prior score (time #1) of the subject on the criterion variable, contentment.

Hypotheses for each of the three theories were tested within this paradigm. The specific paradigm for consistency is shown in Figure 13, for activity in Figure 14, and for disengagement in Figure 15. The wording of the three hypotheses is given below.

Ho3C: (Consistency Theory, see Figure 13.) Contentment, among the elderly, measured at time #2 is dependent upon an interaction between activity resources measured at time #1 and age environment.

Ho3A: (Activity Theory, see Figure 14.) Contentment, among the elderly, measured at time #2 is dependent upon main effects for;
a. Independence in activities of daily living measured at time #1
b. Days of bed disability measured at time #1.

Ho3D: (Disengagement Theory, see Figure 15.) Contentment, among the elderly, measured at time #2 is dependent upon a main effect for age environment measured at time #1, when crossed with factors measured at time #1.

Chronological Anticipation Paradigm and Hypotheses. This paradigm (Figure 16-18) utilizes data from the initial interview (time #1) and the six-month interview (time #2) in combination. The number of such cases for which complete data were available was 192. For the analyses of covariance, age of the subject at time of screening into the study was used as the only covariate.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity Resources At Time #2	Contentment At Time #1	Contentment At Time #1
LOW Activity Resources At Time #2	Contentment At Time #1	Contentment At Time #1

Figure 16. Chronological anticipation hypothesis--consistency theory paradigm.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity At Time #2	Contentment At Time #1	Contentment At Time #1
LOW Activity At Time #2	Contentment At Time #1	Contentment At Time #1

Figure 17. Chronological anticipation hypotheses--activity theory paradigm.

	CONCENTRATED, NONDEMANDING Age Environment	NONCONCENTRATED, DEMANDING Age Environment
HIGH Activity Resources At Time #2	Contentment At Time #1	Contentment At Time #1
LOW Activity Resources At Time #2	Contentment At Time #1	Contentment At Time #1

Figure 18. Chronological anticipation hypotheses--disengagement theory paradigm.

Hypotheses for all three theories were tested within this paradigm. The specific paradigm for consistency is shown in Figure 16, for activity in Figure 17, and for disengagement in Figure 18. The wording of the hypotheses is given below.

Ho4C: (Consistency Theory, see Figure 16.) Contentment, among the elderly, measured at time #1 is dependent upon an interaction between activity resources measured at time #2 and age environment.

Ho4A: (Activity Theory, see Figure 17.) Contentment, among the elderly, measured at time #1 is dependent upon main effects for:
a. Independence in activities of daily living measured at time #2
b. Days of bed disability measured at time #2.

Ho4D: (Disengagement Theory, see Figure 18.) Contentment, among the elderly, measured at time #1 is dependent upon a main effect for age environment measured at time #1, when crossed with factors measured at time #2.

Analysis of the Data

All data analysis reported for this study made use of the Statistical Package for the Social Sciences (SPSS) routines available on the Control Data Corporation 6500 computer at Michigan State University. For each of the two types of analysis discussed below, a set of analyses was run. The analysis set consisted of five different iterations of each of the four paradigms shown in Figures 7 through 18. The factor "age environment" was used in each of the five iterations. The second factor was defined by the following variables, in turn, for the five iterations:

1. Social support = residential location of the primary
            care giver (PCG)

2. Social support = spouse survival

3. Physical health = days of bed disability

4. Physical health = activities of daily living

5. Financial ability (score summarized from annual
            family income and index of economic dependence).

Since each of the factors in every iteration was dichotomous, the analyses amounted to two-by-two fixed factor least squares model analyses with unequal cell sizes. The alternative of a single four-way analysis was rejected, due to small cell frequencies. The total analysis set is discussed below. To obtain the overall main effect for age environment, additional one-way analyses were performed for each paradigm.

Analysis of Covariance

The first level analysis of the data was accomplished using two-by-two analyses of covariance. All the analyses made use of the

variable of "age at time of screening into the study" as a covariate, in order to control for the negative relation which age of subjects was expected to have on the dependent variable of contentment. This relation was reported in Table 1 as having been replicated in three studies.

For the analyses for which the criterion variable was "contentment measured at time #2," an additional covariate was introduced. This second covariate, "contentment at prior measurement (time #1)," was necessary since the level of contentment at prior measurement was expected to effect the level of the criterion variable "contentment measured at time #2." Past studies have obtained a test-retest reliability of .65 for contentment.

Analysis of covariance assumes that there is no interaction between the covariates and the factors. The test for significant interactions of this type was run using a regression procedure, and the level of interaction was nonsignificant in all cases for the total sample.

Analysis of Variance

The multiple classification analysis (MCA) output produced in conjunction with the analysis of covariance table indicated that the effect of the covariates in several of the analyses was so great that, after adjustment had been made for the covariates, the sign of the deviations reversed for the two levels of age environment. Because it seemed likely that the covariate of subject's age is correlated with age environment, a decision was made to run analyses of variance, in addition to the analyses of covariance.

Cell Means and Frequencies

In order to interpret the analysis of variance and analysis of covariance tables, the cell means, standard deviations, and number of cases were produced for each analysis. This data was identical for the two types of analysis, since the covariates were not involved in the cross-tabulated data.

Analysis of Data, Controlling
for Age Group

The above analyses were conducted on the total sample. The sample included persons nearing the status of elderly (45 to less than 65) so that we could compare the hypotheses for the late middle aged as opposed to the elderly. In order to accomplish this comparison, the sample was divided into these two age groups (45 to less than 65, and 65 and over.) and all the analyses described above were run again on each of the two groups. In some cases the division of the sample into two smaller groups of subjects caused analyses to be run with such a small frequency (10 or less) in one or more cells that neither the analysis of variance or covariance was reported. However, the test results were reported whenever possible.

Altogether, 24 analyses of covariance, 24 analyses of variance, 20 means, standard deviations, and frequency distributions were run for each of the three samples:

1. The total sample

2. The sample of older persons (aged 65 and older)

3. The sample of younger persons (aged 45 to less than 65)

Therefore, the complete data analysis package included 72 analyses of covariance, 72 analyses of variance, 60 means, standard deviations, and frequencies, and 18 tests for interaction of the covariates with the factors (four age covariates and two prior contentment score covariates for each of the three analysis samples). In some cases, the interaction of covariate and factor was found to be significant for the age samples, and, in such a circumstance, the analysis of covariance was not reported. The results of the usable analyses will be reported in the following chapter.

CHAPTER III

RESULTS

Introduction

The results of this study are reported separately for three
discrete samples. The first sample is the total sample. The other
two samples for which results are reported are mutually exclusive and
exhaustive subsamples of this total sample. The two subsamples are:
(1) all persons in the total sample who are aged 65 or older, and (2)
all persons in the total sample who are aged 45 but less than 65
years of age. The analyses done for the two subsamples explore the
differential applicability of the study's 12 hypotheses to those who
are unquestionably elderly compared to those who are considered
"less" elderly from a comparative viewpoint or "pre-" elderly from a
developmental viewpoint.

For each sample, the results are organized so that first a
report appears of the frequency of cases (subjects) within each cell
of the analysis, along with means and standard deviations of the cri-
terion variable, contentment. Secondly, the results of the analyses
of covariance and variance are presented. All tables are presented
in order of the four paradigms set forth in Chapter I and II.

For each table, the order of presentation will be:

1. Factor A, age enviornment crossed with factor B,
   residential location of primary care giver (PCG),

2. Factor A, age environment crossed with factor C, spouse survival,

3. Factor A, age environment crossed with factor D, days of bed disability,

4. Factor A, age environment crossed with factor E, independence in activities of daily living (ADL), and

5. Factor A, age environment, crossed with factor F, financial ability.

The first two analyses involve crossing age environment with social support factors, the third and fourth analyses cross age environment with physical health factors, and the last is an analysis of age environment by financial ability. All factors were defined in Chapter II. A final table for each sample gives the results of the one-way analyses for age environment main effect.

Results for the Total Sample

Descriptive Data

It is apparent from the cross-tabulated frequencies, the first number presented in each cell in Table 8 to 11, that the distribution of subjects over cells presents a difficulty in each analysis in which factor A, age environment, is crossed with factor B, residential location of the PCG. It could be argued that analyses based on distributions with such small cell frequencies are suspect and should not be considered. Only those analyses having a cell frequency of 10 or more are reported. When the total sample is reduced further in size for the two subsamples, it will not be even minimally tenable to report the results from the analyses of these two factors.

Table 8. The f, M, and SD of Contentment at Time #1 for Total Sample--(Ho1C, A, D).

	FACTOR A--Age Environment		
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #1 **Residential Location of** **Primary Care Giver**			
Lives in Same Building as the Participant	132[a] 3.053[b] 1.421[c]	100 3.050 1.290	232 3.052 1.363
Lives Separate from the Participant	17 3.176 .809	11 2.909 1.758	28 3.071 1.245
FACTOR C--Time #1 **Spouse Survival**			
Spouse does Survive	117 2.906 1.383	59 3.119 1.340	176 2.977 1.369
Spouse does not Survive	32 3.656 1.125	52 2.942 1.335	84 3.214 1.299
FACTOR D--Time #1 **Days of Bed Disability**			
No Days of Bed Disability	73 3.164 1.385	56 3.339 1.339	129 3.240 1.362
1 to 14 Days of Bed Disability	76 2.974 1.346	55 2.727 1.269	131 2.870 1.315
FACTOR E--Time #1 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activities	46 3.413 1.309	53 3.340 1.300	99 3.374 1.298
Dependent in 1 to 6 Activities	103 2.913 1.366	58 2.759 1.315	161 2.857 1.346
TOTAL[d]	149 3.067 1.364	111 3.036 1.334	260[d] 3.054 1.349
FACTOR F--Time #1 **Financial Ability**			
Above the Median of Financial Ability	95 3.053 1.363	52 3.173 1.451	147 3.095 1.391
Below the Median of Financial Ability	49 3.143 1.369	55 2.836 1.214	104 2.981 1.292
TOTAL	144 3.083 1.361	107 3.000 1.339	251 3.048 1.350

[a] Frequency within the cell.

[b] Mean of the criterion variable within the cell.

[c] Standard Deviation of the criterion variable within the cell.

[d] This row presents the totals for Factor A in the four tables above.

Table 9: The _f_, _M_, and _SD_ of Contentment at Time #2 for Total Sample--(Ho2C, A, D).

	FACTOR A--Age Environment		
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #2 **Residential Location of** **Primary Care Giver**			
Lives in Same Building as the Participant	93[a] 3.462[b] 1.403[c]	74 3.365 1.540	167 3.419 1.462
Lives Separate from the Participant	18 3.556 1.542	11 2.364 1.433	29 3.103 1.589
FACTOR C--Time #2 **Spouse Survival**			
Spouse does Survive	86 3.384 1.440	49 3.224 1.571	135 3.326 1.485
Spouse does not Survive	25 3.800 1.323	36 3.250 1.556	61 3.475 1.479
FACTOR D--Time #2 **Days of Bed Disability**			
No Days of Bed Disability	83 3.687 1.325	61 3.541 1.478	144 3.625 1.389
1 to 14 Days of Bed Disability	28 2.857 1.533	24 2.458 1.503	52 2.673 1.517
FACTOR E--Time #2 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activities	65 3.754 1.323	59 3.610 1.474	124 3.685 1.393
Dependent in 1 to 6 Activities	46 3.087 1.473	26 2.385 1.416	72 2.833 1.482
TOTAL[d]	111 3.477 1.420	85 3.235 1.556	196[d] 3.372 1.481
FACTOR F--Time #2 **Financial Ability**			
Above the Median of Financial Ability	43 3.419 1.484	41 3.439 1.550	84 3.429 1.507
Below the Median of Financial Ability	67 3.522 1.397	44 3.045 1.555	111 3.333 1.473
TOTAL	110 3.482 1.425	85 3.235 1.556	195 3.374 1.485

[a]Frequency within the cell.

[b]Mean of the criterion variable within the cell.

[c]Standard Deviation of the criterion variable within the cell.

[d]This row presents the totals for Factor A in the four tables above.

Table 10: The _f_, _M_, and _SD_ of Contentment at Time #2 for Total Sample--(Ho3C, A, D).

| | FACTOR A--Age Environment | | |
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #1 **Residential Location of Primary Care Giver**			
Lives in Same Building as the Participant	97[a] 3.515[b] 1.370[c]	77 3.260 1.542	174 3.402 1.450
Lives Separate from the Participant	14 3.214 1.762	8 3.000 1.773	22 3.136 1.726
FACTOR C--Time #1 **Spouse Survival**			
Spouse does Survive	87 3.333 1.444	48 3.188 1.566	135 3.281 1.485
Spouse does not Survive	24 4.000 1.216	37 3.297 1.561	61 3.574 1.466
FACTOR D--Time #1 **Days of Bed Disability**			
No Days of Bed Disability	56 3.554 1.400	48 3.292 1.611	104 3.433 1.499
1 to 14 Days of Bed Disability	55 3.400 1.448	37 3.162 1.500	92 3.304 1.466
FACTOR E--Time #1 **Independence in Activities of Daily Living**			
Independent in all 6 Activities	37 3.595 1.462	46 3.261 1.612	83 3.410 1.546
Dependent in 1 to 6 Activities	74 3.419 1.405	39 3.205 1.508	113 3.345 1.438
TOTAL[d]	111 3.477 1.420	85 3.235 1.556	196[d] 3.372 1.481
FACTOR F--Time #1 **Financial Ability**			
Above the Median of Financial Ability	62 3.484 1.376	42 3.476 1.581	104 3.481 1.455
Below the Median of Financial Ability	49 3.469 1.487	42 3.000 1.530	91 3.253 1.517
TOTAL	111 3.477 1.420	84 3.238 1.565	195 3.374 1.485

[a]Frequency within the cell.

[b]Mean of the criterion variable within the cell.

[c]Standard Deviation of the criterion variable within the cell.

[d]This row presents the totals for Factor A in the four tables above.

Table 11: The _f_, _M_, and _SD_ of Contentment at Time #1 for Total Sample--(Ho4C, A, D).

	FACTOR A--Age Environment		
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #2 **Residential Location of** **Primary Care Giver**			
Lives in Same Building as the Participant	91[a] 3.110[b] 1.418[c]	71 3.225 1.301	162 3.160 1.365
Lives Separate from the Participant	19 3.316 1.293	11 2.364 1.502	30 2.967 1.426
FACTOR C--Time #2 **Spouse Survival**			
Spouse does Survive	87 2.977 1.414	46 3.065 1.421	133 3.008 1.412
Spouse does not Survive	23 3.783 1.126	36 3.167 1.276	59 3.407 1.247
FACTOR D--Time #2 **Days of Bed Disability**			
No Days of Bed Disability	83 3.157 1.357	58 3.310 1.353	141 3.220 1.353
1 to 14 Days of Bed Disability	27 3.111 1.528	24 2.625 1.245	51 2.882 1.409
FACTOR E--Time #2 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activities	65 3.415 1.211	56 3.339 1.379	121 3.380 1.286
Dependent in 1 to 6 Activities	45 2.756 1.554	26 2.615 1.169	71 2.704 1.418
TOTAL[d]	110 3.145 1.394	82 3.110 1.352	192[d] 3.130 1.372
FACTOR F--Time #2 **Financial Ability**			
Above the Median of Financial Ability	43 3.070 1.438	39 3.359 1.460	82 3.207 1.446
Below the Median of Financial Ability	66 3.167 1.365	43 2.884 1.219	109 3.055 1.311
TOTAL	109 3.128 1.388	82 3.110 1.352	191 3.120 1.369

[a] Frequency within the cell.

[b] Mean of the criterion variable within the cell.

[c] Standard Deviation of the criterion variable within the cell.

[d] This row presents the totals for Factor A in the four tables above.

In Table 8 and Table 11 the criterion variable is contentment measured at time #1, and in Table 9 and Table 10 the criterion variable contentment is measured at time #2. Furthermore, the total frequency in Table 8 is considerably greater than in the other three tables, since this table reports on variables obtained only from time #1 data before the experimental and actual mortality experienced at time #2 (six months after time #1). Comparison of appropriate tables for the same factors or criterion allows one to make an assessment of changes in these variables from time #1 to time #2.

Further inspection of tables 8 through 11 indicates that factor B, residential location of primary care giver, and factor C, spouse survival, remain fairly stable across the set of four tables, while factor D, days of bed disability; factor E, independence in activities of daily living (ADL); and factor F, financial ability, fluctuate across the four tables.

Three factors show change from time #1 (in Tables 8 and 10) to time #2 (in Tables 9 and 11). Some limited conclusions may be drawn regarding these changes. For factor D, days of bed disability, either those who were initially bed-disabled improve, or they are disproportionately lost to experimental mortality. For factor E, independence in ADL, either those who were initially dependent improve, or they are disproportionately lost from the sample. For factor F, financial ability, either those who were initially above the median of financial ability have lessened financial ability by time #2, or they have been disproportionately lost from the sample. In addition, comparison of means and standard deviations for contentment in Table 8

and 11 with statistics in Tables 9 and 10 indicates that the amount of variation and mean level of contentment increased from time #1 to time #2.

Comparison of the "high resource" level with the "low resource" level of factor B, residential location of PCG; factor C, spouse survival; factor D, days of bed disability; factor E, activities of daily living; and factor F, financial ability; shows that contentment level is either higher or nearly equal for "high resource" as compared to "low resource." There is one outstanding exception to this general observation. In each of the tests of hypotheses, it is the classification "spouse does not survive" which has a higher mean value for contentment. Since the spouse's survival was viewed as an activity resource which could be characterized as a "high social support resource," this is a surprising finding.

In summary, we have identified factor A, age environment, related to factor B, residential location of PCG, as an analysis which has small cell frequencies. Factor B, residential location of PCG, and factor C, spouse survival, were identified as having marginal frequencies which remain stable from time #1 to time #2. The marginal frequencies of factor D, days of bed disability; factor E, ADL; factor F, financial ability; and the criterion variable of contentment fluctuate from time #1 to time #2. Spouse survival is consistently associated with lower mean contentment level than is spouse non-survival.

Analysis of Covariance and Variance

For the total sample, it is necessary to forego the reporting of the analyses of variance and covariance for factor A, age environment, by factor B, residential location of PCG, in the testing of Ho3, due to small cell frequency. All data from this study not reported in this chapter may be found in Appendix C.

It is apparent, from the fact that significant F values were obtained for the covariates of age and prior (time #1) score in every analysis of covariance, that the choice of these two covariates was validated. These F values are significant at $p < .01$. However, because factor A, age environment, which appears in each analysis, could be highly correlated with the covariate of age, which was used in every analysis of covariance, we have also run the corresponding analyses of variance for all factors and hypotheses.

In Tables 12 to 15, analyses of covariance are reported in the first column and analyses of variance are reported in the second column. Thus it is relatively convenient to compare the result of these two analytic approaches. Of greatest interest in such comparisons are situations in which the two analyses produce results which are significant for one analysis and not significant for the other analysis. These types of results are observed in the following analyses:

1. (Table 12, Ho1A.)--the analysis of factor A, age environment, by factor D, days of bed disability. The significant main effect for factor D, in ANOVA is nonsignificant in ANCOVA.

Table 12:   Analysis of Covariance and Variance for Total Sample--(HolC, A, D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Age	1	20.010	11.359**			
A=Age Environment	1	1.954	1.109	1	.060	.033
B=Residential Location of Primary Care Giver	1	.000	.000	1	.009	.005
A X B Interaction	1	.086	.049	1	.418	.227
Residual	255	1.762		256	1.839	
Total	259	1.819		259	1.819	
Covariate=Age	1	20.010	11.679**			
A=Age Environment	1	1.262	.737	1	.570	.320
C=Spouse Survival	1	.246	.144	1	3.703	2.078
A X C Interaction	1	12.154	7.094**	1	11.301	6.342*
Residual	255	1.713		256	1.782	
Total	259	1.819		259	1.819	
Covariate=Age	1	20.010	11.588**			
A=Age Environment	1	1.538	.891	1	.085	.047
D=Days of Bed Disability	1	5.303	3.071	1	8.925	4.973*
A X D Interaction	1	3.661	2.120	1	2.822	1.573
Residual	255	1.727		256	1.795	
Total	259	1.819		259	1.819	
Covariate=Age	1	20.010	11.870**			
A=Age Environment	1	1.563	.334	1	.917	.517
E=Independence in Activities of Daily Living	1	19.403	11.510**	1	17.215	9.710**
A X E Interaction	1	.031	.018	1	.096	.054
Residual	255	1.686		256	1.773	
Total	259	1.819		259	1.819	
Covariate=Age	1	20.627	11.854**			
A=Age Environment	1	2.192	1.260	1	.255	.139
F=Financial Ability	1	3.493	2.007	1	.627	.343
A X F Interaction	1	2.110	1.213	1	2.667	1.458
Residual	246	1.740		247	1.829	
Total	250	1.822		250	1.822	

*p < .05

**p < .01

Table 13: Analysis of Covariance and Variance for Total Sample--(Ho2C, A, D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score	1	57.437	33.506**			
Covariate=Age	1	20.105	11.728**			
A=Age Environment	1	.157	.091	1	3.076	1.422
B=Residential Location of Primary Care Giver	1	1.869	1.090	1	2.716	1.256
A X B Interaction	1	3.047	1.778	1	7.015	3.244
Residual	183	1.714		192	2.163	
Total	188	2.198		195	2.194	
Covariate=Prior Score	1	57.437	33.235**			
Covariate=Age	1	20.105	11.634**			
A=Age Environment	1	.034	.019	1	3.725	1.696
C=Spouse Survival	1	.283	.164	1	1.840	.838
A X C Interaction	1	2.081	1.204	1	1.530	.697
Residual	183	1.728		192	2.198	
Total	188	2.198		195	2.194	
Covariate=Prior Score	1	57.437	35.218**			
Covariate=Age	1	20.105	12.327**			
A=Age Environment	1	.018	.011	1	2.197	1.081
D=Days of Bed Disability	1	20.079	12.311**	1	33.993	16.718**
A X D Interaction	1	.077	.047	1	.605	.298
Residual	183	1.631		192	2.033	
Total	188	2.198		195	2.194	
Covariate=Prior Score	1	57.437	35.804**			
Covariate=Age	1	20.105	12.533**			
A=Age Environment	1	.308	.192	1	5.460	2.716
E=Independence in Activities of Daily Living	1	22.344	13.929**	1	35.713	17.769**
A X E Interaction	1	2.710	1.689	1	3.373	1.678
Residual	183	1.604		192	2.010	
Total	188	2.198		195	2.194	
Covariate=Prior Score	1	59.068	34.125**			
Covariate=Age	1	21.111	12.198**			
A=Age Environment	1	.196	.113	1	3.150	1.428
F=Financial Ability	1	.868	.501	1	.670	.304
A X F Interaction	1	.085	.049	1	2.900	1.315
Residual	182	1.731		191	2.205	
Total	187	2.209		194	2.204	

*$p < .05$

**$p < .01$

Table 14: Analysis of Covariance and Variance for Total Sample--(Ho3C, A, D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score						
Covariate=Age						
A=Age Environment	Data Not Reported			Data Not Reported		
B=Residential Location	Cell Sizes = 97 77			Cell Sizes = 97 77		
of Primary Care Giver	14 8			14 8		
A X B Interaction						
Residual						
Total						
Covariate=Prior Score	1	57.437	33.312**			
Covariate=Age	1	20.105	11.660**			
A=Age Environment	1	.122	.071	1	4.776	2.203
C=Spouse Survival	1	.005	.003	1	5.543	2.556
A X C Interaction	1	3.085	1.789	1	3.070	1.415
Residual	183	1.724		192	2.169	
Total	188	2.198		195	2.194	
Covariate=Prior Score	1	57.437	33.042**			
Covariate=Age	1	20.105	11.566**			
A=Age Environment	1	.109	.063	1	3.017	1.366
D=Days of Bed Disability	1	.407	.234	1	.998	.452
A X D Interaction	1	.103	.059	1	.007	.003
Residual	183	1.738		192	2.208	
Total	188	2.198		195	2.194	
Covariate=Prior Score	1	57.437	33.057**			
Covariate=Age	1	20.105	11.571**			
A=Age Environment	1	.112	.064	1	3.288	1.488
E=Independence in Activities of Daily Living	1	.090	.052	1	.663	.300
A X E Interaction	1	.570	.328	1	.164	.074
Residual	183	1.738		192	2.209	
Total	188	2.198		195	2.194	
Covariate=Prior Score	1	57.798	33.363**			
Covariate=Age	1	19.906	11.491**			
A=Age Environment	1	.020	.012	1	2.451	1.114
F=Financial Ability	1	1.806	1.042	1	2.235	1.016
A X F Interaction	1	1.127	.650	1	2.533	1.151
Residual	182	1.732		191	2.200	
Total	187	2.209		194	2.204	

*$p < .05$

**$p < .01$

Table 15: Analysis of Covariance and Variance for Total Sample--(Ho4C, A, D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Age	1	13.780	7.670**			
A=Age Environment	1	1.167	.650	1	.088	.047
B=Residential Location of Primary Care Giver	1	1.476	.822	1	.979	.523
A X B Interaction	1	7.265	4.044*	1	6.760	3.611
Residual	187	1.797		188	1.872	
Total	191	1.883		191	1.883	
Covariate=Age	1	13.780	7.661**			
A=Age Environment	1	.285	.158	1	.813	.440
C=Spouse Survival	1	1.935	1.076	1	7.268	3.930*
A X C Interaction	1	6.408	3.562	1	4.745	2.566
Residual	187	1.799		188	1.849	
Total	191	1.883		191	1.883	
Covariate=Age	1	13.780	7.644**			
A=Age Environment	1	1.474	.818	1	.018	.010
D=Days of Bed Disability	1	4.172	2.314	1	4.225	2.259
A X D Interaction	1	3.451	1.914	1	3.791	2.027
Residual	187	1.803		188	1.871	
Total	191	1.883		191	1.883	
Covariate=Age	1	13.780	8.074**			
A=Age Environment	1	.761	.446	1	.454	.252
E=Independence in Activities of Daily Living	1	25.566	14.981**	1	20.838	11.563**
A X E Interaction	1	.015	.009	1	.044	.024
Residual	187	1.707		188	1.802	
Total	191	1.883		191	1.883	
Covariate=Age	1	12.602	6.957**			
A=Age Environment	1	1.368	.755	1	.045	.024
F=Financial Ability	1	3.849	2.125	1	1.114	.593
A X F Interaction	1	1.505	.831	1	3.750	1.996
Residual	186	1.811		187	1.879	
Total	190	1.875		190	1.875	

*p < .05

**p < .01

Table 16: One-Way Analyses of Covariance-Variance--Age Environment for Total Sample.

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
(Ho1D)						
Covariate = Age	1	20.010	11.446**			
Factor A = Age Environment	1	1.954	1.118	1	.061	.034
Residual	257	1.748		258	1.826	
Total	259	1.819		259	1.819	
(Ho2D and Ho3D)						
Covariate=Prior Score	1	57.437	33.349**			
Covariate = Age	1	20.105	11.674**			
Factor A = Age Environment	1	.159	.092	1	2.823	1.289
Residual	185	1.722		194	2.191	
Total	188	2.198		195	2.194	
(Ho4D)						
Covariate = Age	1	13.780	7.555**			
Factor A = Age Environment	1	1.246	.683	1	.060	.032
Residual	189	1.824		190	1.893	
Total	191	1.883		191	1.883	

**$p < .01$

*$p < .05$

2. (Table 15, Ho4A)--analysis of factor A, age environment, by factor C, spouse survival. The nonsignificant main effect for factor C, spouse survival, in ANCOVA is significant in ANOVA.

3. (Table 15, Ho4C.)--analysis of factor A, age environment, by factor B, residential location of PCG. The significant interaction effect for these two factors in ANCOVA is nonsignificant in ANOVA.

While there were these important differences in the findings from the two analyses, four main effects and one interaction effect were found to be significant, regardless of whether the analysis used was ANCOVA or ANOVA.

Consistency Hypotheses. Significant interaction effects are the results needed to support the consistency hypotheses (Ho1C. to Ho4C.) of this study. The results for the total sample yield two such results out of the 20 sets of analyses. We may state these two findings as follows:

1. There is a significant interaction (ANCOVA and ANOVA) between factor A, age environment, and factor C, spouse survival at time #1, when the criterion is contentment at time #1 (see Table 12). Contentment is higher for persons in nonconcentrated demanding age environment with a surviving spouse and for persons in a concentrated, nondemanding age environment without a surviving spouse (see Table 8).

2. There is a significant interaction (ANCOVA only) between factor A, age environment, and factor B, residential location of PCG at time #2, when the criterion is contentment at time #1 (see Table 15). Contentment is higher for persons in a nonconcentrated, demanding age environment who have a PCG living in the same building (at a later time), and for persons in a concentrated, nondemanding age environment who have a PCG living in a different building (at a later time) (see Table 11).

Comparison of the results in these two tables (8 and 11) with the general consistency paradigm (Figure 4) indicates that both

findings support the consistency hypotheses. No other effects support-
ing the consistency hypotheses were observed in these analyses.

Disengagement Hypotheses. The obtained significant main
effects for the total sample have been summarized in Table 17. These
main effects of significance may be divided into those which support
activity theory hypotheses, those which support disengagement theory
hypotheses,and those for which no hypotheses exist. In this sample,
none of the significant main effects are in a direction which would
negate the activity or disengagement hypotheses. The disengagement
hypotheses are not supported by any significant main effects. The
one-way analyses for age environment, reported in Table 16, show no
significant main effects.

Activity Hypotheses. The activity hypotheses are supported
by two significant main effects for factor D, days of bed disability,
(Ho2A.); and three significant main effects for factor E, activities
of daily living, (Ho1A., Ho2A, and Ho4A.). Thus, in the total sample,
three of the four activity hypotheses have been supported by five of
the eight sets of tests of main effects mentioned in these hypotheses.
All these significant findings were in the hypothesized direction;
that is, contentment was higher for persons with no days of bed dis-
ability (vs some days of bed disability) and with independence in ADL
(vs dependence in ADL).

One of the main effects which is significant is unrelated to
either the activity or disengagement hypotheses. This finding is for
a main effect for factor C, spouse survival. The direction of the

Table 17: Significant Main Effects Found in Total Sample.

Factor	Significant Main Effect For:	When Criterion Is:	When Analysis Used is: ANCOVA	ANOVA	Contentment is Higher When:
C Table 15	Spouse Survival at Time #2	Contentment at Time #1		X*	Spouse does not survive at a later time.
D Table 12	Days of Bed Disability at Time #1	Contentment at Time #1		X*	No Days of Bed Disability are experienced
D Table 13	Days of Bed Disability at Time #2	Contentment at Time #2	X**	X**	No Days of Bed Disability are experienced.
E Table 12	Independence in ADL at Time #1	Contentment at Time #1	X**	X**	Independent in all six activities of Daily Living.
E Table 13	Independence in ADL at Time #2	Contentment at Time #2	X**	X**	Independent in all six activities of daily living.
E Table 15	Independence in ADL at Time #2	Contentment at Time #1	X**	X**	Independent in all six activities of daily living at a later time.

*$p < .05$

**$p < .01$

effect is for high contentment when the spouse does not survive. This effect had been referred to in Chapter I, as a possible mediating effect in support of disengagement theory. Since it was not deemed directly related to disengagement phenomena, no hypotheses were formed regarding this effect. This finding of strong support for this main effect will lead to further discussion in the following chapter.

In summary, for the total sample, little support is shown for the consistency hypotheses of this study. At best, such findings are of two significant interaction effects from among 20 sets of tests for interaction. No support is found for the disengagement hypotheses within the total sample. Activity theory presents a different picture. Five of eight sets of tests of the activity hypotheses yielded significant main effects. In addition, one set of tests yielded significant main effects for nonsurvival of spouse, to which no formal hypotheses were linked.

Results for the Older (65 or Older) Sample

Descriptive Data

The unequal frequency distribution of cases within cells which was noted in the total sample for factor A, age environment, by factor B, residential location of PCG, is even more apparent in this sub-sample, effecting these two factors in all four tests of the hypotheses (see Tables 18 to 21). In this older sample, two additional sets of analyses are affected by small cell frequencies. The analyses affected in this way are factor A, age environment, by factor C, spouse survival (all three hypotheses tested on time #2 sample), and

Table 18:   The _f_, _M_, and _SD_ of Contentment at Time #1 for Older Sample--(HoIC, A, D).

| | FACTOR A--Age Environment | | |
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #1 **Residential Location of** **Primary Care Giver**			
Lives in Same Building as the Participant	88[a] 3.125[b] 1.346[c]	41 3.561 1.050	129 3.264 1.272
Lives Separate from the Participant	13 3.154 .801	2 3.000 2.828	15 3.133 1.060
FACTOR C--Time #1 **Spouse Survival**			
Spouse does Survive	76 2.921 1.283	12 3.833 .937	88 3.045 1.277
Spouse does not Survive	25 3.760 1.091	31 3.419 1.177	56 3.571 1.142
FACTOR D--Time #1 **Days of Bed Disability**			
No Days of Bed Disability	58 3.155 1.322	24 3.792 1.141	82 3.341 1.298
1 to 14 Days of Bed Disability	43 3.093 1.250	19 3.211 1.032	62 3.129 1.180
FACTOR E--Time #1 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activities	30 3.400 1.303	19 3.842 1.167	49 3.571 1.258
Dependent in 1 to 6 Activities	71 3.014 1.270	24 3.292 1.042	95 3.084 1.217
TOTAL[d]	101 3.129 1.286	43 3.535 1.120	144[d] 3.250 1.249
FACTOR F--Time #1 **Financial Ability**			
Above the Median of Financial Ability	58 3.069 1.269	15 3.733 1.163	73 3.205 1.269
Below the Median of Financial Ability	41 3.293 1.289	26 3.346 1.093	67 3.313 1.209
TOTAL	99 3.162 1.275	41 3.488 1.121	140 3.257 1.237

[a]Frequency within the cell.

[b]Mean of the criterion variable within the cell.

[c]Standard Deviation of the criterion variable within the cell.

[d]This row presents the totals for Factor A in the four tables above.

Table 19. The _f_, _M_, and _SD_ of Contentment at Time #2 for Older Sample--(Ho2C, A, D).

	FACTOR A--Age Environment		
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #2 **Residential Location of** **Primary Care Giver**			
Lives in Same Building as the Participant	64[a] 3.766[b] 1.178[c]	25 3.880 1.364	89 3.798 1.226
Lives Separate from the Participant	14 3.571 1.555	5 3.000 1.414	19 3.421 1.502
FACTOR C--Time #2 **Spouse Survival**			
Spouse does Survive	60 3.633 1.248	7 3.857 1.345	67 3.657 1.250
Spouse does not Survive	18 4.056 1.211	23 3.690 1.428	41 3.854 1.333
FACTOR D--Time #2 **Days of Bed Disability**			
No Days of Bed Disability	58 3.914 1.144	21 3.905 1.261	79 3.911 1.168
1 to 14 Days of Bed Disability	20 3.200 1.399	9 3.333 1.658	29 3.241 1.455
FACTOR E--Time #2 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activities	41 4.098 1.020	19 4.211 1.228	60 4.133 1.081
Dependent in 1 to 6 Activities	37 3.324 1.355	11 .909 1.300	48 3.229 1.341
TOTAL[d]	78 3.731 1.245	30 3.733 1.388	108[d] 3.731 1.280
FACTOR F--Time #2 **Financial Ability**			
Above the Median of Financial Ability	21 3.857 1.236	14 4.000 1.177	35 3.914 1.197
Below the Median of Financial Ability	56 3.696 1.264	16 3.500 1.549	72 3.653 1.323
TOTAL	77 3.740 1.250	30 3.733 1.388	107 3.738 1.284

[a]Frequency within the cell.

[b]Mean of the criterion variable within the cell.

[c]Standard Deviation of the criterion variable within the cell.

[d]This row presents the totals for Factor A in the four tables above.

Table 20: The f, M, and SD of Contentment at Time #2 for Older Sample--(Ho3C, A, D).

	FACTOR A--Age Environment		
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #1 **Residential Location of** **Primary Care Giver**			
Lives in Same Building as the Participant	67[a] 3.806[b] 1.131[c]	28 3.679 1.416	95 3.768 1.216
Lives Separate from the Participant	11 3.273 1.794	2 4.500 .707	13 3.462 1.713
FACTOR C--Time #1 **Spouse Survival**			
Spouse does Survive	61 3.557 1.272	7 3.857 1.345	68 3.588 1.272
Spouse does not Survive	17 4.353 .931	23 3.696 1.428	40 3.975 1.271
FACTOR D--Time #1 **Days of Bed Disability**			
No Days of Bed Disability	45 3.756 1.246	19 3.789 1.512	64 3.766 1.318
1 to 14 Days of Bed Disability	33 3.697 1.262	11 3.636 1.206	44 3.682 1.235
FACTOR E--Time #1 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activities	27 3.815 1.302	17 4.000 1.369	44 3.886 1.316
Dependent in 1 to 6 Activities	51 3.686 1.225	13 3.385 1.387	64 3.625 1.254
FACTOR F--Time #1 **Financial Ability**			
Above the Median of Financial Ability	37 3.865 1.004	13 4.231 1.092	50 3.960 1.029
Below the Median of Financial Ability	41 3.610 1.430	17 3.353 1.498	58 3.534 1.441
TOTAL	78 3.731 1.245	30 3.733 1.388	108 3.731 1.280

[a]Frequency within the cell.

[b]Mean of the criterion variable within the cell.

[c]Standard Deviation of the criterion variable within the cell.

Table 21: The $\underline{f}$, $\underline{M}$, and $\underline{SD}$ of Contentment at Time #1 for Older Sample--(Ho4C, A, D).

| | FACTOR A--Age Environment | | |
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #2 **Residential Location of** **Primary Care Giver** .			
Lives in Same Building as the Participant	62[a] 3.161[b] 1.333[c]	25 3.680 .988	87 3.310 1.260
Lives Separate from the Participant	13 3.308 1:377	5 2.800 1.789	18 3.167 1.465
FACTOR C--Time #2 **Spouse Survival**			
Spouse does Survive	58 2.983 1.331	7 3.857 1.069	65 3.077 1.327
Spouse does not Survive	17 3.882 1.111	23 3.435 1.199	40 3.625 1.170
FACTOR D--Time #2 **Days of Bed Disability**			
No Days of Bed Disability	56 3.196 1.313	21 3.571 1.207	77 3.299 1.288
1 to 14 Days of Bed Disability	19 3.158 1.425	9 3.444 1.130	28 3.250 1.323
FACTOR E--Time #2 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activities	40 3.475 1.154	19 3.632 1.300	59 3.525 1.194
Dependent in 1 to 6 Activities	35 2.857 1.458	11 3.364 .924	46 2.978 1.358
TOTAL[d]	75 3.187 1.332	30 3.533 1.167	105[d] 3.286 1.291
FACTOR F--Time #2 **Financial Ability**			
Above the Median of Financial Ability	20 2.900 1.210	14 3.714 1.139	34 3.235 1.232
Below the Median of Financial Ability	54 3.259 1.362	16 3.375 1.204	70 3.286 1.320
TOTAL	74 3.162 1.324	30 3.533 1.167	104 3.269 1.286

[a]Frequency within the cell.

[b]Mean of the criterion variable within the cell.

[c]Standard Deviation of the criterion variable within the cell.

[d]This row presents the totals for Factor A in the four tables above.

factor A, age environment, by factor D, days of bed disability (two of the three hypotheses tested on the time #2 sample).

In general, the marginal frequencies for all factors behave much the same for this subsample as they do for the total sample, factor B, residential location of PCG, and factor C, spouse survival, are stable, and factor D, days of bed disability, factor E, independence of ADL, and factor F, financial ability, fluctuate from time #1 to time #2 as described for the total sample.

The finding of higher mean contentment at time #2 than at time #1 is also apparent for this older sample. The finding that mean contentment is higher for participants whose spouse does not survive is also upheld for this subsample. Contentment is higher and less variable for the older sample than for the total sample.

Although this latter finding appears to be at odds with the negative relation of age and contentment cited earlier, it is a finding consistent with the results obtained by Loeb and his colleagues (1963, see Figure 3). It is quite likely that the relation of age and contentment is curvilinear, being negatively related at ages from 45 to 65 and being unrelated or positively related to contentment at ages beyond 65, as has been shown by this research. In summary, we may say that all findings from the descriptive data for the total sample are upheld by the findings from the descriptive data for the older sample. In addition, drastically small cell frequencies have been observed in the older sample for factor A, age environment, by factor C, spouse survival, and factor A, age environment, by factor D, days of bed disability.

Analyses of Covariance and Variance

For this older sample, data have not been reported due to small cell frequency for factor A, age environment, by factor B, residential locations of PCG (all four tests of the hypotheses), for factor A, age environment, by factor C, spouse survival (tests of Ho2., Ho3., and Ho4.), and for factor A, age environment, by factor D, days of bed disability (tests of Ho2. and Ho4.). In addition, data from several analyses of covariance have not been reported because significant interactions were found between factors and covariates, in violation of an underlying assumption of the analysis of covariance. In Ho1. (Table 22 and Table 26), there is a significant interaction of the covariate age with factor A, age environment, making all analyses of covariance for that hypothesis invalid. In Ho2. (Table 23), the covariate age interacts significantly with factor D, days of bed disability. All results of data analysis not reported in this chapter may be found in Appendix C.

There are no differential findings of significant F values between the analysis of covariance and the analysis of variance for this older sample. At the same time, there is evidence that age is not an appropriate covariate for this subsample of persons 65 years of age or older, because the F values for the age covariate were nonsignificant in every analysis. Since the covariate of age had little effect in this sample, it is not surprising that no differential results between the two types of analyses have been found.

Table 22:   Analysis of Covariance and Variance for Older Sample--(HoIC, A, D).

	Analysis of Covariance			Analysis of Variance		
Source of Variation	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Age						
A=Age Environment	Data Not Reported			Data Not Reported		
B=Residential Location	Cell Sizes = 83 41			Cell Sizes = 88 41		
of Primary Care Giver		13 2			13 2	
A X B Interaction	Interaction of Factor A					
Residual	with Age					
Total	p = .017					
Covariate=Age						
A=Age Environment	Data Not Reported			1	.928	.639
C=Spouse Survival	Interaction of Factor A			1	5.420	3.733
A X C Interaction	with Age			1	9.303	6.406*
Residual	p = .017			140	1.452	
Total				143	1.559	
Covariate=Age						
A=Age Environment	Data Not Reported			1	5.061	3.306
D=Days of Bed Disability	Interaction of Factor A			1	1.679	1.096
A X D Interaction	with Age			1	1.998	1.305
Residual	p = .017			140	1.531	
Total				143	1.559	
Covariate=Age						
A=Age Environment	Data Not Reported			1	3.465	2.292
E=Independence in Activ-	Interaction of Factor A					
ities of Daily Living	with Age			1	6.163	4.076*
A X E Interaction	p = .017			1	.191	.126
Residual				140	1.512	
Total				143	1.559	
Covariate=Age						
A=Age Environment	Data Not Reported			1	2.763	1.815
F=Financial Ability	Interaction of Factor A			1	.085	.056
A X F Interaction	with Age			1	2.543	1.670
Residual	p = .017			136	1.522	
Total				139	1.531	

*p < .05

**p < .01

Table 23: Analysis of Covariance and Variance for Older Sample--(Ho2C, A, D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score						
Covariate=Age						
A=Age Environment						
B=Residential Location	Data Not Reported			Data Not Reported		
of Primary Care Giver	Cell Sizes = 64 25			Cell Sizes = 64 25		
A X B Interaction		14 5			14 5	
Residual						
Total						
Covariate=Prior Score						
Covariate=Age						
A=Age Environment	Data Not Reported			Data Not Reported		
C=Spouse Survival	Cell Sizes = 60 7			Cell Sizes = 60 7		
A X C Interaction		18 23			18 23	
Residual						
Total						
Covariate=Prior Score						
Covariate=Age	Data Not Reported			Data Not Reported		
A=Age Environment	Cell Sizes = 58 21			Cell Sizes = 58 21		
D=Days of Bed Disability		20 9			20 9	
A X D Interaction	Interaction of Factor D					
Residual	with Age					
Total	p = .043					
Covariate=Prior Score	1	20.358	15.553**			
Covariate=Age	1	.016	.012			
A=Age Environment	1	.919	.702	1	.197	.135
E=Independence in Activities of Daily Living	1	13.331	10.185**	1	21.997	15.072**
A X E Interaction	1	2.290	1.749	1	1.431	.981
Residual	99	1.309		104	1.459	
Total	104	1.601		107	1.638	
Covariate=Prior Score	1	21.615	15.034**			
Covariate=Age	1	060	.041			
A=Age Environment	1	1.304	.907	1	.074	.044
F=Financial Ability	1	2.149	1.495	1	1.684	1.006
A X F Interaction	1	.039	.027	1	.577	.345
Residual	98	1.438		103	1.674	
Total	103	1.611		106	1.648	

* p < .05

** p < .01

Table 24: Analysis of Covariance and Variance for Older Sample--(Ho3C, A, D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score						
Covariate=Age						
A=Age Environment	Data Not Reported			Data Not Reported		
B=Residential Location	Cell Sizes = 67 28			Cell Sizes = 67 28		
of Primary Care Giver	11 2			11 2		
A X B Interaction						
Residual						
Total						
Covariate=Prior Score						
Covariate=Age						
A=Age Environment	Data Not Reported			Data Not Reported		
C=Spouse Survival	Cell Sizes = 61 7			Cell Sizes = 61 7		
A X C Interaction	17 23			17 23		
Residual						
Total						
Covariate=Prior Score	1	20.358	13.924**			
Covariate=Age	1	.016	.011			
A=Age Environment	1	.608	.416	1	.000	.000
D=Days of Bed Disability	1	.452	.309	1	.183	.109
A X D Interaction	1	.013	.009	1	.046	.027
Residual	99	1.462		104	1.683	
Total	104	1.601		107	1.638	
Covariate=Prior Score	1	20.358	13.985**			
Covariate=Age	1	.016	.011			
A=Age Environment	1	.797	.548	1	.068	.041
E=Independence in Activ-						
ities of Daily Living	1	.424	.292	1	1.849	1.117
A X E Interaction	1	.671	.461	1	1.232	.744
Residual	99	1.456		104	1.655	
Total	104	1.601		107	1.638	
Covariate=Prior Score	1	20.358	14.422**			
Covariate=Age	1	.016	.011			
A=Age Environment	1	.485	.344	1	.009	.005
F=Financial Ability	1	3.867	2.739	1	4.870	3.010
A X F Interaction	1	1.593	1.128	1	2.072	1.281
Residual	99	1.412		104	1.618	
Total	104	1.601		107	1.638	

*$p < .05$

**$p < .01$

Table 25: Analysis of Covariance and Variance for Older Sample--(Ho4C, A, D).

	Analysis of Covariance			Analysis of Variance		
Source of Variation	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Age A=Age Environment B=Residential Location of Primary Care Giver A X B Interaction Residual Total	Data Not Reported Cell Sizes = 62 25 13 5			Data Not Reported Cell Sizes = 62 25 13 5		
Covariate=Age A=Age Environment C=Spouse Survival A X C Interaction Residual Total	Data Not Reported Cell Sizes = 58 7 17 23			Data Not Reported Cell Sizes = 58 7 17 23		
Covariate=Age A=Age Environment D=Days of Bed Disability A X D Interaction Residual Total	Data Not Reported Cell Sizes = 56 21 19 9			Data Not Reported Cell Sizes = 56 21 19 9		
Covariate=Age A=Age Environment E=Independence in Activities of Daily Living A X E Interaction Residual Total	1 1 1 1 100 104	1.615 2.469 8.199 .709 1.597 1.668	1.011 1.546 5.134* .444	1 1 1 101 104	1.842 7.005 .621 1.616 1.668	1.140 4.334* .384
Covariate=Age A=Age Environment F=Financial Ability A X F Interaction Residual Total	1 1 1 1 99 103	1.230 3.680 .190 2.034 1.652 1.655	.745 2.228 .115 1.231	1 1 1 100 103	3.216 .333 2.410 1.648 1.655	1.951 .202 1.463

*p < .05

**p < .01

Table 26: One-Way Analyses of Covariance-Variance--Age Environment for Older Sample.

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
(Ho1D)						
Covariate = Age	Data Not Reported					
Factor A = Age Environment	Interaction of Factor A with Age p = .017			1	4.976	3.241
Residual				142	1.535	
Total				143	1.559	
(Ho2D and Ho3D)						
Covariate = Prior Score	1	20.358	14.160**			
Covariate = Age	1	.016	.011			
Factor A = Age Environment	1	.635	.442	1	.000	.000
Residual	101	1.438		106	1.653	
Total	104	1.601		107	1.638	
(Ho4D)						
Covariate = Age	1	1.615	.977			
Factor A = Age Environment	1	3.198	1.934	1	2.575	1.552
Residual	102	1.653		103	1.659	
Total	104	1.668		104	1.668	

**p < .01

*p < .05

Consistency Hypotheses. Turning to a consideration of findings which support the consistency hypotheses (Ho1C. to Ho4c.), one of the eleven reported interactions proved to be significant. We may state this finding as follows:

1. There is a significant interaction (ANOVA reported only) between factor A, age environment, and factor C, spouse survival at time #1, when the criterion is contentment at time #1 (see Table 22). Contentment is higher for persons in a nonconcentrated, demanding age environment, with a surviving spouse and for persons in a concentrated, nondemanding age environment without a surviving spouse (see Table 18).

This interaction is upheld for both the older sample and the total sample. No other effects supporting the hypotheses were observed in these analyses.

Disengagement Hypotheses. In this older sample, three significant main effects are found. These are reported in Table 27. None of the main effects related to the disengagement hypotheses. The one-way analyses for age environment reported in Table 26 show no significant main effects.

Activity Hypotheses. All three main effects support activity hypotheses. There are significant main effects for factor E, independence of ADL, when Ho1A., Ho2A., and Ho4A. are under test. In this older sample, three of the four activity hypotheses were supported in three of the eight sets of tests of those hypotheses.

To summarize, the findings for the older sample do not give strong support to the consistency hypotheses of this study. Only one finding of 11 sets reported was a significant interaction. The

Table 27: Significant Main Effects Found in Older Sample.

Factor	Significant Main Effect For:	When Criterion Is:	When Analysis Used Is:		Contentment is Higher When:
			ANCOVA	ANOVA	
E Table 21	Independence in ADL at Time #1	Contentment at Time #1		X*	Independent in all six activities of daily living.
E Table 22	Independence in ADL at Time #2	Contentment at Time #2	X**	X**	Independent in all six activities of daily living.
E Table 24	Independence in ADL at Time #2	Contentment at Time #1	X*	X*	Independent in all six activities of daily living.

*p < .05

**p < .01

disengagement hypotheses fared worse, with no significant findings. Activity hypotheses yielded significant findings for three of six sets of main effects which were reported.

A basic finding for this sample is that the covariate of age does not produce significant F values. Thus, the utility of the analysis of covariance is questionable, for this older sample. This matter will be discussed further in the following chapter.

Results for the Younger (45 to less than 65) Sample
Descriptive Data

In this younger sample the total number of cases is smaller (125) than for the older sample (155). Because of this, we expected to be able to report fewer analyses, due to small cell frequencies. This expectation is shown to be accurate in Tables 28 to 31. None of the cell distributions for factor A, age environment; by factor B, location of PCG; or factor A, age environment; by factor C, spouse survival, are such that analyses may be reported. For factor A, age environment, by factor D, days of bed disability, the analyses for Ho2. (Table 33) and Ho4. (Table 35) are not reportable. For factor A, age environment, by factor E, ADL, the analyses for Ho2. (Table 33) are not reportable. For factor A, age environment, by factor F, financial ability, the analyses for Ho1. (Table 30) and Ho3. (Table 32) are not reportable. All results not reported here may be found in Appendix C.

In general, the marginal frequencies for factor B, location of PCG; factor C, spouse survival; factor D, days of bed disability;

100

Table 28. The _f_, _M_, and _SD_ of Contentment at Time #1 for Younger Sample--(HolC, A, D).

| | FACTOR A--Age Environment | | |
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #1 **Residential Location** **of Primary Care Giver**			
Lives in Same Building as the Participant	44[a] 2.909[b] 1.567[c]	59 2.695 1.329	103 2.786 1.432
Lives Separate from the Participant	4 3.250 .957	9 2.889 1.691	13 3.000 1.472
FACTOR C--Time #1 **Spouse Survival**			
Spouse does Survive	41 2.878 1.568	47 2.936 1.374	88 2.909 1.459
Spouse does not Survive	7 3.286 1.254	21 2.238 1.261	28 2.500 1.319
FACTOR D--Time #1 **Days of Bed Disability**			
No Days of Bed Disability	15 3.200 1.656	32 3.000 1.391	47 3.064 1.466
1 to 14 Days of Bed Disability	33 2.818 1.467	36 2.472 1.320	69 2.638 1.393
FACTOR E--Time #1 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activities	16 3.438 1.365	34 3.059 1.301	50 3.180 1.320
Dependent in 1 to 6 Activities	32 2.688 1.554	34 2.382 1.371	66 2.530 1.459
TOTAL[d]	48 2.938 1.522	68 2.721 1.370	116[d] 2.810 1.432
FACTOR F--Time #1 **Financial Ability**			
Above the Median of Financial Ability	37 3.027 1.518	37 2.946 1.508	74 2.986 1.503
Below the Median of Financial Ability	8 2.375 1.598	29 2.379 1.147	37 2.378 1.233
TOTAL	45 2.911 1.535	66 2.697 1.381	111 2.784 1.442

[a]Frequency within the cell.

[b]Mean of the criterion variable within the cell.

[c]Standard Deviation of the criterion variable within the cell.

[d]This row presents the totals for Factor A in the four tables above.

Table 29. The _f_, _M_, and _SD_ of Contentment at Time #2 for Younger Sample--(Ho2C, A, D).

	FACTOR A--Age Environment		
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #2 **Residential Location of** **Primary Care Giver**			
Lives in Same Building as the Participant	29[a] 2.793[b] 1.634[c]	49 3.102 1.571	78 2.987 1.591
Lives Separate from the Participant	4 3.500 1.732	6 1.833 1.329	10 2.500 1.650
FACTOR C--Time #2 **Spouse Survival**			
Spouse does Survive	26 2.808 1.698	42 3.119 1.596	68 3.000 1.630
Spouse does not Survive	7 3.143 1.464	13 2.462 1.506	20 2.700 1.490
FACTOR D--Time #2 **Days of Bed Disability**			
No Days of Bed Disability	25 3.160 1.573	40 3.350 1.562	65 3.277 1.556
1 to 14 Days of Bed Disability	8 2.000 1.604	15 1.933 1.163	23 1.957 1.296
FACTOR E--Time #2 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activities	24 3.167 1.579	40 3.325 1.509	64 3.266 1.525
Dependent in 1 to 6 Activities	9 2.111 1.616	15 2.000 1.414	24 2.042 1.459
FACTOR F--Time #2 **Financial Ability**			
Above the Median of Financial Ability	22 3.000 1.604	27 3.148 1.657	49 3.082 1.618
Below the Median of Financial Ability	11 2.636 1.748	28 2.766 1.524	39 2.744 1.568
TOTAL	33 2.879 1.635	55 2.964 1.587	88 2.932 1.596

[a]Frequency within the cell.

[b]Mean of the criterion variable within the cell.

[c]Standard Deviation of the criterion variable within the cell.

Table 30: The _f_, _M_, and _SD_ of Contentment at Time #2 for Younger Sample--(Ho3C, A, D).

| | FACTOR A--Age Environment | | |
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #1 **Residential Location of** **Primary Care Giver**			
Lives in Same Building as the Participant	30[a] 2.867[b] 1.634[c]	49 3.020 1.574	79 2.962 1.589
Lives Separate from the Participant	3 3.000 2.000	6 2.500 1.761	9 2.667 1.732
FACTOR C--Time #1 **Spouse Survival**			
Spouse does Survive	26 2.808 1.698	41 3.073 1.587	67 2.970 1.623
Spouse does not Survive	7 3.143 1.464	14 2.643 1.598	21 2.810 1.337
FACTOR D--Time #1 **Days of Bed Disability**			
No Days of Bed Disability	11 2.727 1.737	29 2.966 1.614	40 2.900 1.630
1 to 14 Days of Bed Disability	22 2.955 1.618	26 2.962 1.587	48 2.958 1.584
FACTOR E--Time #1 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activities	10 3.000 1.764	29 2.828 1.605	39 2.872 1.625
Dependent in 1 to 6 Activities	23 2.826 1.614	26 3.115 1.583	49 2.980 1.588
TOTAL[d]	33 2.879 1.635	55 2.964 1.587	88[d] 2.932 1.696
FACTOR F--Time #1 **Financial Ability**			
Above the Median of Financial Ability	25 2.920 1.656	29 3.138 1.663	54 3.037 1.648
Below the Median of Financial Ability	8 2.750 1.669	25 2.760 1.535	33 2.758 1.542
TOTAL	33 2.879 1.635	54 2.963 1.601	87 2.931 1.605

[a]Frequency within the cell.

[b]Mean of the criterion variable within the cell.

[c]Standard Deviation of the criterion variable within the cell.

[d]This row presents the totals for Factor A in the four tables above.

Table 31:   The f, M, and SD of Contentment at Time #1 for Younger Sample--(Ho4C, A, D).

	FACTOR A--Age Environment		
	Concentrated Nondemanding	Nonconcentrated Demanding	Total
FACTOR B--Time #2 **Residential Location of** **Primary Care Giver**			
Lives in Same Building as the Participant	29[a] 3.000[b] 1.604[c]	46 2.978 1.390	75 2.987 1.466
Lives Separate from the Participant	6 3.333 1.211	6 2.000 1.265	12 2.667 1.371
FACTOR C--Time #2 **Spouse Survival**			
Spouse does Survive	29 2.966 1.592	39 2.923 1.440	68 2.941 1.495
Spouse does not Survive	6 3.500 1.225	13 2.692 1.316	19 2.947 1.311
FACTOR D--Time #2 **Days of Bed Disability**			
No Days of Bed Disability	27 3.074 1.466	37 3.162 1.424	64 3.125 1.431
1 to 14 Days of Bed Disability	8 3.000 1.852	15 2.133 1.060	23 2.435 1.409
FACTOR E--Time #2 **Independence in Activities** **of Daily Living**			
Independent in all 6 Activites	25 3.320 1.314	37 3.189 1.411	62 3.242 1.363
Dependent in 1 to 6 Activities	10 2.400 1.897	15 2.067 1.033	25 2.200 1.414
FACTOR F--Time =2 **Financial Ability**			
Above the Median of Financial Ability	23 3.217 1.622	25 3.160 1.599	48 3.188 1.593
Below the Median of Financial Ability	12 2.750 1.357	27 2.593 1.152	39 2.641 1.203
TOTAL	35 3.057 1.533	52 2.865 1.401	87 2.943 1.450

[a]Frequency within the cell.

[b]Mean of the criterion variable within the cell.

[c]Standard Deviation of the criterion variable within the cell.

and factor E, ADL, are in the same relationship to each other as reported for the total sample and the older sample. However, the marginal frequencies for factor A, age environment, and factor F, financial ability, are distributed differently for this younger sample than for the older or total samples. For the younger sample, more persons are found to be in a nonconcentrated, demanding age environment than in a concentrated, nondemanding age environment. The opposite results were obtained for the older sample and the total sample. This finding regarding age environment held true for all four tests of the hypotheses.

For the younger sample, more persons were above the total sample median for financial ability than below the total sample median, and this is true at time #1 and at time #2. In both the older and the total samples, marginal frequencies indicate that the majority of cases above the total sample median for financial ability at time #1 changes to a majority of cases below the total sample median for financial ability at time #2, approximately six months later.

Assessment of the data reported as means and standard deviations of the criterion variable, contentment, shows that contentment is invariably lower and more variable for this sample than for the total sample. The finding for the total sample and the older sample that contentment is higher at time #2 than at time #1 is not upheld for this younger sample; and the finding that the total sample and the older sample evidenced a higher mean contentment if the spouse did not survive is reversed for the younger sample.

To sum up, this younger sample has more unreported analyses due to small cell frequencies than the older sample. This sample is more apt to be in a nonconcentrated, demanding age environment than is the older sample. Members of this sample are more apt to be high in financial ability at time #1 and to remain at that financial position at time #2, whereas in the other two samples financial ability is lower by time #2. The contentment level of this younger sample is lower and more variable than the older sample. Lower contentment is associated with nonsurvival of spouse for this younger sample, while higher contentment is associated with the same event for the older sample.

Analyses of Covariance and Variance

In addition to the data not reported in Tables 32 to 35, due to small cell frequencies, three analyses of covariance have gone unreported due to significant interaction between a covariate and a factor. In Ho2. (Table 33), prior (time #1) score on contentment interacted significantly with factor F, financial ability. In Ho3. (Table 34), age interacted significantly with factor C, spouse survival, and with factor E, activities of daily living. All data not reported here may be accessed in Appendix C. There are no differential findings of significant F values between the analysis of covariance and the analysis of variance for this younger sample.

Consistency Hypotheses. In this younger sample, there were no significant interaction effects to support the consistency hypotheses.

Table 32: Analysis of Covariance and Variance for Younger Sample--(HoIC, A, D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Age						
A=Age Environment						
B=Residential Location	Data Not Reported			Data Not Reported		
of Primary Care Giver	Cell Sizes = 44 59			Cell Sizes = 44 59		
A X B Interaction		4 9			4 9	
Residual						
Total						
Covariate=Age						
A=Age Environment						
C=Spouse Survival	Data Not Reported. .			Data Not Reported		
A X C Interaction	Cell Sizes = 41 47			Cell Sizes = 41 47		
Residual		7 21			7 21	
Total						
Covariate=Age	1	14.861	7.728**			
A=Age Environment	1	.146	.076	1	2.333	1.144
D=Days of Bed Disability	1	7.504	3.902	1	6.086	2.986
A X D Interaction	1	.005	.003	1	.137	.067
Residual	111	1.923		112	2.038	
Total	115	2.051		115	2.051	
Covariate=Age	1	14.861	7.964**			
A=Age Environment	1	.370	.198	1	3.060	1.553
E=Independence in Activ-						
ities of Daily Living	1	13.825	7.409**	1	13.744	6.974**
A X E Interaction	1	.012	.006	1	.035	.018
Residual	111	1.866		112	1.971	
Total	115	2.051		115	2.051	
Covariate=Age						
A=Age Environment						
F=Financial Ability	Data Not Reported			Data Not Reported		
A X F Interaction	Cell Sizes = 37 37			Cell Sizes = 37 37		
Residual		8 29			8 29	
Total						

*p < .05

**p < .01

Table 33: Analysis of Covariance and Variance for Younger Sample--(Ho2C, A, D).

	Analysis of Covariance			Analysis of Variance		
Source of Variation	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score Covariate=Age A=Age Environment R=Residential Location of Primary Care Giver A X B Interaction Residual Total	Data Not Reported Cell Sizes = 29 49 4 6			Data Not Reported Cell Sizes = 29 49 4 6		
Covariate=Prior Score Covariate=Age A=Age Environment C=Spouse Survival A X C Interaction Residual Total	Data Not Reported Cell Sizes = 26 42 7 |3			Data Not Reported Cell Sizes = 26 42 7 13		
Covariate=Prior Score Covariate=Age A=Age Environment D=Days of Bed Disability A X D Interaction Residual Total	Data Not Reported Cell Sizes = 25 40 8 15			Data Not Reported Cell Sizes = 25 40 8 15		
Covariate=Prior Score Covariate=Age A=Age Environment E=Independence in Activities of Daily Living A X E Interaction Residual Total	Data Not Reported Cell Sizes = 24 40 9 15			Data Not Reported Cell Sizes = 24 40 9 15		
Covariate=Prior Score Covariate=Age A=Age Environment F=Financial Ability A X F Interaction Residual Total	Data Not Reported Interaction of Factor F with Prior Contentment p = .033			1 1 1 84 87	.442 2.775 .000 2.603 2.547	.170 1.066 .000

Table 34: Analysis of Covariance and Variance for Younger Sample--(Ho3C, A, D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score						
Covariate=Age						
A=Age Environment						
B=Residential Location	Data Not Reported			Data Not Reported		
of Primary Care Giver	Cell Sizes = 30 49			Cell Sizes = 30 49		
A X B Interaction		3 6			3 6	
Residual						
Total						
Covariate=Prior Score						
Covariate=Age	Data Not Reported			Data Not Reported		
A=Age Environment	Cell Sizes = 26 41			Cell Sizes = 26 41		
C=Spouse Survival		7 14			7 14	
A X C Interaction	Interaction of Factor C					
Residual	with Age					
Total	p = .048					
Covariate=Prior Score	1	37.930	17.733[**]			
Covariate=Age	1	1.101	.515			
A=Age Environment	1	.407	.190	1	.198	.075
D=Days of Bed Disability	1	.184	.086	1	.124	.047
A X D Interaction	1	.163	.076	1	.255	.097
Residual	78	2.139		84	2.632	
Total	83	2.573		87	2.547	
Covariate=Prior Score						
Covariate=Age	Data Not Reported					
A=Age Environment	Interaction of Factor E			1	.257	.098
E=Independence in Activ-	with Age					
ities of Daily Living	p = .003			1	.361	.138
A X E Interaction				1	.985	.376
Residual				84	2.620	
Total				87	2.547	
Covariate=Prior Score						
Covariate=Age						
A=Age Environment	Data Not Reported			Data Not Reported		
F=Financial Ability	Cell Sizes = 25 29			Cell Sizes = 25 29		
A X F Interaction		8 25			8 25	
Residual						
Total						

*p < .05

**p < .01

Table 35: Analysis of Covariance and Variance for Younger Sample--(Ho4C, A, D).

	Analysis of Covariance			Analysis of Variance		
Source of Variation	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Age						
A=Age Environment						
B=Residential Location	Data Not Reported			Data Not Reported		
of Primary Care Giver	Cell Sizes = 29 46			Cell Sizes = 29 46		
A X B Interaction	6 6			6 6		
Residual						
Total						
Covariate=Age						
A=Age Environment	Data Not Reported			Data Not Reported		
C=Spouse Survival	Cell Sizes = 29 39			Cell Sizes = 29 39		
A X C Interaction	6 13			6 13		
Residual						
Total						
Covariate=Age						
A=Age Environment	Data Not Reported			Data Not Reported		
D=Days of Bed Disability	Cell Sizes = 27 37			Cell Sizes = 27 37		
A X D Interaction	8 15			8 15		
Residual						
Total						
Covariate=Age	1	13.603	7.383**			
A=Age Environment	1	.071	.038	1	.746	.386
E=Independence in Activ-						
ities of Daily Living	1	14.804	8.035**	1	19.319	9.994**
A X E Interaction	1	1.202	.652	1	.176	.091
Residual	82	1.842		83	1.933	
Total	86	2.101		86	2.101	
Covariate=Age	1	13.603	6.997*			
A=Age Environment	1	.141	.073	1	.196	.094
F=Financial Ability	1	7.615	3.917	1	5.853	2.791
A X F Interaction	1	.053	.027	1	.049	.023
Residual	82	1.944		83	2.097	
Total	86	2.101		86	2.101	

*p < .05

**p < .01

Disengagement Hypotheses. No main effects for age environment
are reported in Table 36 or Table 37. There is no support for the
disengagement hypotheses.

Activity Hypotheses. Two main effects are reported for the
younger sample in Table 37. Both of them are in support of the
activity hypotheses. These are significant main effects for factor
E, independence of ADL, when Ho1A. and Ho4A. are under test. In this
younger sample, two of the four activity hypotheses were supported
in two of the eight sets of tests of those hypotheses.

To summarize, the findings for this younger sample give no
support to the consistency hypotheses or the disengagement hypotheses.
Activity hypotheses yielded significant findings for two of five sets
of main effects which were reported.

Summary of the Results

The results reported in this chapter are summarized in
Table 38 for the interaction effects, and in Table 39 for the main
effects. Table 38 illustrates very concretely the extent of unre-
ported data, shown as a dash (-) in the table.

In regard to testing the four consistency hypotheses, a
glance at Table 38 indicates that, in general, none of the hypotheses
was strongly supported, with no support at all for Ho2. and Ho3.
There is support for Ho1. in the interaction of factor A, age environ-
ment, with factor C, spouse survival. There is support for Ho4. in
the interaction of factor A, age environment, with factor B, resi-
dential location of PCG. A check of the cell means for the three

Table 36: One-Way Analyses of Covariance-Variance--Age Environment for Younger Sample.

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
(Ho1D)						
Covariate = Age	1	14.861	7.600**			
Factor A = Age Environment	1	.000	.000	1	1.324	.644
Residual	113	1.955		114	2.057	
Total	115	2.051		115	2.051	
(Ho2D and Ho3D)						
Covariate = Prior Score	1	37.930	18.150**			
Covariate = Age	1	1.101	.527			
Factor A = Age Environment	1	.320	.153	1	.148	.058
Residual	80	2.090		86	2.575	
Total	83	2.573		87	2.547	
(Ho4D)						
Covariate = Age	1	13.603	6.839*			
Factor A = Age Environment	1	.022	.011	1	.769	.363
Residual	84	1.989		85	2.117	
Total	86	2.101		86	2.101	

**$p < .01$

*$p < .05$

Table 37: Significant Main Effects Found in Younger Sample.

Factor	Significant Main Effect For:	When Criterion Is:	When Analysis Used Is: ANCOVA	When Analysis Used Is: ANOVA	Contentment is Higher When:
E Table 30	Independence in ADL at Time #1	Contentment at Time #1	X**	X**	Independent in all six activities of daily living.
E Table 33	Independence in ADL at Time #2	Contentment at Time #1	X**	X**	Independent in all six activities of daily living.

*p < .05
**p < .01

Table 38: Summary of Findings Regarding Interaction Effects.

Hypothesis	Sample	Factor A by Factor B		Factor A by Factor C		Factor A by Factor D		Factor A by Factor E		Factor A by Factor F	
		C	A	C	A	C	A	C	A	C	A
Ho1 Immediate Cross Sectional Model (Time #1 Factors Predicting Time #1 Contentment Level)	Older Sample	-	-	-	A*	-	NS	-	NS	-	NS
	Younger Sample	-	-	-	-	NS	NS	NS	NS	-	-
	Total Sample	NS	NS	C**	A*	NS	NS	NS	NS	NS	NS
Ho2 Delayed Cross Sectional Model (Time #2 Factors Predicting Time #2 Contentment Level)	Older Sample	-	-	-	-	-	-	NS	NS	NS	NS
	Younger Sample	-	-	-	-	-	-	-	-	-	NS
	Total Sample	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ho3 Chronological Lag Effect Model (Time #1 Factors Predicting Time #2 Contentment Level)	Older Sample	-	-	-	-	NS	NS	NS	NS	NS	NS
	Younger Sample	-	-	-	-	NS	NS	-	-	-	-
	Total Sample	-	-	NS	NS	NS	NS	NS	NS	NS	NS
Ho4 Chronological Anticipation Model (Time #2 Factors Predicting Time #1 Contentment Level)	Older Sample	-	-	-	-	-	-	NS	NS	NS	NS
	Younger Sample	-	-	-	-	-	-	NS	-	NS	NS
	Total Sample	C*	NS	NS	NS	NS	NS	NS	NS	NS	NS

Note. C = Analysis of Covariance
A = Analysis of Variance
NS = Nonsignificant
- = Data not reported

*p < .05
**p < .01

Table 39: Summary of Significant Findings Regarding Main Effects.

Factor	Significant Main Effect For:	When Criterion Is:	When Ho Is:	When Analysis Used Is: ANCOVA	ANOVA	When Sample Used is: Older	Younger	Total	Contentment is Higher When:
C	Spouse Survival at Time #2	Contentment at Time #1	–		X*			X	Spouse does not survive at a later time.
D	Days of Bed Disability at Time #2	Contentment at Time #2	2A	X***	X***			X	No Days of Bed Disability are experienced
D	Days of Bed Disability at Time #1	Contentment at Time #1	1A		X*			X	No Days of Bed Disability are experienced
E	Independence in ADL at Time #1	Contentment at Time #1	1A	X*** X***	X* X*** X***	X	X	X	Independent in all six activities of Daily Living.
E	Independence in ADL at Time #2	Contentment at Time #2	2A	X*** X***	X*** X***	X		X	Independent in all six activities of Daily Living
E	Independence in ADL at Time #1	Contentment at Time #1	4A	X* X*** X***	X* X*** X***	X	X	X	Independence in all six activities of Daily Living at a later time

*p < .05

**p < .01

appropriate samples, hypotheses and factors sets indicates that all of the reported interactions which are significant are in the hypothesized direction. This direction is such that contentment is higher when age environment is concentrated, nondemanding and activity resources are low, or when age environment is nonconcentrated, demanding, and activity resources are high.

The reported main effects are summarized in Table 39. This table compiles results previously tabled in Table 17, 27, and 37. Activity theory has been well supported in three of the four hypotheses, with most of this support involving factor E, activities of daily living, and less involvement of factor D, days of bed disability, in support of the hypotheses. It should be noticed that these findings for activity hypotheses are of such strength that a finding of significance is obtained in both the analysis of covariance and the analysis of variance for all but one effect.

Disengagement hypotheses have been rejected because of no support. The findings reported in this chapter will be discussed further in Chapter IV.

CHAPTER IV

DISCUSSION

Introduction

This chapter consists of two general discussions. The first is pointed toward the results obtained in this study. It includes a summary of the characteristics of the several samples used in the study, a comparison of the results obtained for the hypotheses which relate to the three types of theories of successful aging: consistency, activity, and disengagement theories, and a discussion of other obtained results.

The second general discussion makes suggestions for future research regarding successful aging. These suggestions are in regard to instrumentation, data collection strategy, appropriate analysis, size and characteristics of the sample, and questions amenable to further research.

Discussion of the Present Study

The sample for this study was purposely tailored to produce relatively equal numbers of persons at "good" and "poor" functional levels, while allowing for the possibility of measurement of change within a six month time period. A consequence of tailoring the sample in this manner was a relatively large number of deaths during the six month time period, experienced as part of the experimental mortality.

Because the tailoring process was designed for over-representation of persons at "poor" functional levels, the sample is certainly not representative of the older population in the communities studied. Therefore, no attempt has been made to generalize the results or conclusions of this study to a larger population. Such generalization is not warranted.

Since the hypotheses of this study were tested on several subsamples, it is appropriate to summarize the characteristics of these subsamples before proceeding to discuss the results which were obtained from the subsample data. Analysis of results have been organized on the basis of time subsamples (time #1 and time #2) and age subsamples (older and younger). Although the sample of this study was formed in such a way as to allow analysis by rural and urban subsamples, the data has not been reported in this format in Chapter III and no report has been made of the character of those two subsamples. Such an analysis is conceivable as the subject of a future report based on the data of this study. It may also be important, in future research, to analyze this data after division into subsamples by sex.

Sample Characteristics at Time #1 and Time #2

In discussing the differences in character of the total sample at time #1 and time #2, we are pointing up matters which may influence differential findings for Ho1 (C, A, D), which was tested on the time #1 sample; and for Ho2 (C, A, D), Ho3 (C, A, D) and Ho4 (C, A, D), which were tested on the time #2 sample.

The basic difference between these two samples is that the sample size diminishes between time #1 and time #2. The total sample at time #1 is 280, but due to missing data, the effective sample size for hypothesis testing is 251-260 at time #1. The total sample at time #2 is 201. Loss of cases due to deletion of missing data reduces the number of cases on which the hypotheses are tested to 191-196 at time #2.

While most of the intake characteristics of the two samples which are described in Chapter II vary little between the two time samples, it may be noticed that at time #2 the sample consists of a slightly greater proportion of persons who are married, live with only one other person, own their own home, head their own household and have a PCG who is a spouse. Since the experimental mortality which was experienced between time #1 and time #2 was actual mortality to a great extent, we may conclude that persons with the above characteristics at intake into the study had an advantage in "staying ability" (see Table 2 and 3).

Certain other differences are discernible in several of the factors which were measured at both time #1 and time #2. It is not possible from this analysis to determine whether the differences observed in these factor levels at the two times may be attributable to actual changes for the persons in the time #2 sample, or to the loss of 79 persons between time #1 and time #2. By time #2, fewer persons are (1) bed disabled for 1 to 14 days, (2) are dependent in activities of daily living, and (3) are above the median of financial

ability. Hol (C, A, D) and Ho3 (C, A, D) are tested using the levels of the factors at time #1; while Ho2 (C, A, D) and Ho4 (C, A, D) are tested using the levels of the factors at time #2.

In regard to the characteristics of the criterion, content- ment, it was found that by time #2 the mean level of contentment is both higher and more variable. Time #1 contentment is involved in the testing of Hol (C, A, D) and Ho4 (C, A, D), while time #2 con- tentment is involved in the testing of Ho2 (C, A, D) and Ho3 (C, A, D). Refer to Tables 8, 9, 10, and 11 regarding the factors and criterion levels.

Characteristics of Older Sample and Younger Sample

For purposes of analysis of the hypotheses, the size of the sample is crucial. The older sample (persons 65 or older) is larger than the younger sample (persons 45 to less than 65). At time #1 the older sample contained 155 subjects, while 109 remained in that sample at time #2. Because of loss of subjects due to missing data in the data analyses, the older sample has an effective size of 140- 144 at time #1, and 104-108 at time #2. The younger sample con- tained 125 subjects at time #1 and 92 at time #2. Due to missing data in the analyses, the younger sample shrank to a size of 111-116 at time #1 and 87-88 at time #2.

Along with the age difference in the two samples, several other intake variables differentiate the two samples. The older sample has a greater proportion of females, whites, widowed persons,

persons at higher occupational levels, and persons at lower educational levels. The older sample is less likely than the younger sample to have a spouse as PCG, and more likely to have a female PCG and/or more likely to have a child or other relative as a PCG. The older sample is more likely than the younger sample to have lived in their residence 10 years or more, to have only one cohabitant, to have an "other resident" as owner or head of the household, and less likely to have a landlord. At least one of these differences, the finding for educational level, may be recognized as a historical bias for the two cohorts. Most of the other differences are accounted for by the particular life cycle or stage of development of members of the two age groups.

The younger sample compared to the older sample is, on the average, less content and exhibits a larger standard deviation for the criterion variable, contentment. However, the mean for contentment remains stable from time #1 to time #2, and the standard deviation increases from time #1 to time #2 for the younger sample. The older sample is more content and has a smaller standard deviation for the criterion of contentment than the younger sample. The mean of contentment increases from time #1 to time #2, while the standard deviation of contentment remains stable between the two time samples for the older sample. It was noted earlier that, for the total sample, between time #1 and time #2, both the mean and the standard deviation of contentment increase.

Results for the Consistency Hypotheses

We have seen that two of the four consistency hypotheses received no support, while Ho1C. and Ho4C. received support from only one of the five sets of factors. The two factors involved in significant interaction with age environment are factor B, location of PCG, and factor C, spouse survival. Both these factors are variables related to persons other than the self. The two hypotheses with significant interaction effects are the two which have in common a lower, less variable criterion measure, contentment at time #1.

Two significant findings, out of 20 sets of main effects in which it would have been possible to obtain significance, is not much better than chance. We reject Ho2C. and Ho3C. The two significant findings will be discussed further in comparison to the significant findings for the activity and disengagement theories.

Results for the Activity Hypotheses

The activity hypotheses received support for three of the four hypotheses, in five of the eight sets of tests of the hypotheses. For factor D, days of bed disability, two hypotheses (Ho1A. and Ho2A.) produced a significant main effect. For factor E, independence in activities of daily living, three of the four hypotheses (all except Ho3A.) produced a significant main effect. Notice that both the hypothesized main effects involve factors which are variables involving the self. One of the five findings was borne out in

the older sample as well as in the total sample. Two others were upheld in the older, younger, and total samples. Four of the five findings are supported by both analysis of variance and analysis of covariance.

Although one of the hypotheses, Ho3A., was rejected, the important matter is that three of the four activity hypotheses were supported with significant findings. These strongly supportive results will be compared with the results from the other two theories.

Results for the Disengagement Hypotheses

For the total sample, none of 20 sets of tests of the disengagement hypotheses is supported. For the older sample and younger sample, no supportive results are obtained for the disengagement hypotheses. It seems obvious that there is no support for any of the disengagement hypotheses.

Comparison of the Results for the Three Theories

We have seen that there is no support for disengagement theory. Opposed to this we found support for Ho1C. and Ho4C. related to consistency theory, and for Ho1A, Ho2A, and Ho4A. related to activity theory. See Figure 19 for a summary of these results, taken from Table 38 and Table 39.

Although the results support both consistency theory and activity theory, the results reported in support of the activity theory are overwhelmingly stronger. More significant findings were

Theory of Successful Aging	Hypothesis			
	Ho1 Immediate Cross-Sectional Paradigm	Ho2 Delayed Cross-Sectional Paradigm	Ho3 Chronological Lag Paradigm	Ho4 Chronological Anticipation Paradigm
Consistency Theory (4 X 5 = 20 Sets of Tests)	Factor A, Age environment X Factor C, spouse survival. ------------ Total Sample ANCOVA ANOVA Older Sample ANOVA			Factor A, age environment X Factor B, Location of PCG ------------ Total Sample ANCOVA
Activity Theory (4 X 2 = 8 Sets of Tests)	Factor E, ADL ------------ Total Sample ANCOVA ANOVA Older Sample ANOVA Younger Sample ANCOVA ANOVA	Factor E, ADL ------------ Total Sample ANCOVA ANOVA Older Sample ANCOVA ANOVA		Factor E, ADL ------------ Total Sample ANCOVA ANOVA Older Sample ANCOVA ANOVA Younger Sample ANCOVA ANOVA
	Factor D, Days of Bed Disability ------------ Total Sample ANOVA	Factor D, Days of Bed Disability ------------ Total Sample ANCOVA ANOVA		
Disengagement Theory (4 X 5 = 20 Sets of Tests, 4 X 1 = 4 One-Way Tests)				

Figure 19. Comparison of significant findings for three theories by four hypotheses.

obtained for activity theory than for consistency theory, in both absolute and relative terms. Unlike consistency theory, the results for activity theory were supported by both ANCOVA and ANOVA in four of five significant findings. The results for one of the activity hypotheses are supported by findings from the older subsample, as well as the total sample. Two more hypotheses are supported by findings from the older, younger, and total samples.

Considering all these matters, activity theory comes out the strong leader among the three theories. Although consistency theory is not rejected by these results, it is not supported as strongly as activity theory. Disengagement theory is rejected by these findings.

Discussion of the Results for the Three Theories

The variables utilized in this study were those chosen from among the pool of available variables from the demonstration project. There were no specific research objectives or criteria which were satisfied by this variable set. Later in this chapter, many suggestions will be given for alternate variables which could be utilized in future research regarding theories of successful aging. This set of variables also is not a representative set from a larger population of variables. The type of bias which may have been introduced to this study by the variable set will be discussed below.

It is noteworthy (see Figure 19) that the two variables which have lent support to the consistency hypotheses are residential location of the primary care giver, and spouse survival, both in interaction with age environment. All three of these interacting

factors represent variables having to do with persons other than the subject (self): (1) the primary care giver, (2) the spouse, and (3) the cohabitants of the subject's residence. Factors such as: (1) days of bed disability, (2) activities of daily living, and (3) financial ability, all have a strong "self component" and none of them contributed to support of the consistency hypotheses.

The activity hypotheses, on the other hand, have been supported by two of the "self component" variables: (1) activities of daily living, and (2) days of bed disability. The deficiency of the financial ability variable to measure significance when it does, in fact, exist will be discussed later in this chapter.

Based on these observations from this limited set of "self component" and "other component" variables, we put forward the following two generalizations for future testing:

1. Variables which depend mainly on characteristics of the self and which are little influenced by the actions of others will be related to successful aging through activity theory.

2. Variables which depend mainly on characteristics of others, especially significant others, and which are little influenced by the actions of the self will be related to successful aging through consistency theory.

Suggestions for conducting research about these two propositions will be presented later in this chapter.

Our attention should also be directed to another characteristic of the variables which provided support for activity theory and did not provide support for consistency theory. In addition to the specification of days of bed disability and independence in

activities of daily living as self component variables, we must also
notice that they are of such a basic nature, and such a usually
simple level as to be expected activities, regardless of the type of
age environment impinging upon the individual.

It appears quite possible that the two activity variables
utilized in this study will not differentiate between the two age
environment levels. If this is the case, we would not be able to
obtain interaction effects. This is exactly the picture presented
by the data. Limitation of activity resources in this study to
activity variables which do not differentiate between age environment
levels, may have lessened the probability of support for the con-
sistency hypotheses, while increasing the probability of support for
the activity hypotheses.

Several alternate activity resource variables could be sug-
gested which are of a less basic nature, or which lie in a middle
position on a scale of activities from simple to complex. Among
others these include: walking, climbing stairs, getting about out-
side of a building, traveling, using a telephone, writing corre-
spondence, driving a car, earning small amounts of money. While such
variables are complex, they define or facilitate a social activity.
The simpler activities of daily living, and staying out of bed for
a good part of the day do not. Rather, these simpler activities are
more readily described as pure physical activities.

We should recall that these two variables of physical activity
were selected in order to operationalize an underlying concept of

physical health. In saying that the interaction effects posited by consistency theory are more likely found in variables which represent social activity, rather than pure physical activity, we introduce the possibility that an activity resource which we shall label as "social health" is a more appropriate medium in which to detect significant consistency (interaction) effects. At the same time, we may say that physical health is a concept which may be expected to produce main effects of the activity theory type.

Along the same lines, the rather meager support for disengagement theory may be due to the dearth of psychological variables in the present data.

Recognizing that the present discussion of the relationship of the three theories to types of variables is speculative, incomplete and lacking structure, we have attempted to produce a more complete structure of the theories and variables.

Figure 20 leads us to the following statements:

1. Variables which represent physical characteristics of an individual and which may be thought of as contributing to physical health will be related to successful aging through activity theory.

2. Variables which represent social characteristics of an individual and which may be thought of as contributing to social health will be related to successful aging through consistency theory.

3. Variables which represent psychological characteristics of an individual and which may be thought of as contributing to psychological health will be related to successful aging through disengagement theory.

Many of the variables in this study have called for major assumptions to be made about the relation of the individual

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Type of Theory	Type of Health (Activity Resource)		
	Type of Activity	Type of Strength	Type of Support
Activity Theory	<u>Physical</u>	<u>Physical</u>	<u>Physical</u>
	Activities of Daily Living Days of Bed Disability	Speed Endurance Lifting Gripping Pulling Pushing Reaction time	Mechanical aid Human aid
Consistency Theory	<u>Social</u>	<u>Social</u>	<u>Social</u>
	Ambulation Traveling Telephoning Writing Driving Earning Buying Housekeeping Repairing Creating	Financial solvency Personal attractive- ness Social awareness Education	Friends and neighbors Friendly relatives Escorts Co-habitants PCG's Employers or buyers Merchants Service workers
Disengagement Theory	<u>Psychological</u>	<u>Psychological</u>	<u>Psychological</u>
	Remembering Memorizing Reasoning Computing Expressing Appropriate emoting Learning Orientating Recognizing	Intelligence Affect Verbal response speed Size of vocabulary	Spouse Significant others Listeners Advisors Confidants Clinicians Psychiatrists Teachers

Figure 20. Types of appropriate variables for type of theory by type of health.

variables to the particular theory being tested. In some cases
these assumptions may not be wholly defensible. The age environment
variable used to operationalize the consistency and disengagement
theories has called for the most far-reaching assumptions.

The first such assumption is that all age environments clas-
sified as concentrated and nondemanding are classified validly.
This may be questioned on the basis that some persons, whose age
environments are classified in this way, may be members of a two-
generation family, by living either with very elderly parents or with
adult children over age 45. Given such an anomaly, the nondemanding
classification would be just as inaccurate as the concentrated
classification.

The next assumption about the age environment variable is
that it is age environment within an individual's residence which is
of greatest importance in either the consistency or disengagement
theory. For the person old enough to be retired, who does not get
out of the house much, this may be an acceptable assumption. For the
person who is retired and still gets about outside the residence for
considerable amounts of time, the age environment of friends and
neighbors may be of more importance. For the person of 45 to 65
years of age, who is not yet retired, the more important age environ-
ment may be at the place of work.

Finally, it is questionable that living in a nondemanding
concentrated age environment is equivalent to being in a state of
disengagement, and that living in a demanding, nonconcentrated age
environment is equivalent to being in a state of engagement. Age

environment is not a psychological activity or strength. It is conceivable that persons who live in a concentrated, nondemanding age environment receive more psychological support than do persons who live in a nonconcentrated, demanding age environment. This psychological support, however, will not be perfectly coincident with disengagement or engagement of the individual, by which terms we intend to describe the polar opposites of a psychological state.

This set of assumptions regarding age environment should be kept in mind when evaluating the validity of the consistency and disengagement results obtained in this study. They are especially important, since age environment is a variable involved in every analysis performed. The use of age environment to operationalize social context in this study has lessened the probability of support for the disengagement theory and, perhaps, for the consistency theory. We have already discussed the particular choice of variables which may have worked to the benefit of the activity hypotheses.

To summarize: we suggest the operation of each of the theories of aging is correlated with one of three types of "health." Operation of activity theory is associated with physical health, which consists of physical activity, physical strength and physical support. Consistency theory operates when matters of social health are considered such as social activity, social strength, and social support. Disengagement theory is expected to be in operation when it is important to consider psychological health, through such variables as psychological activities, psychological strengths, and psychological supports.

Choice of variable type (see Figure 20) may be crucial to the success of testing each theory. The poor showing of disengagement theory may be due entirely to choice of a social variable to operationalize an essentially psychological theory.

The Additional Finding of a Main Effect for Spouse Nonsurvival

Spouse survival has provided us with one main effect in the direction of high contentment associated with nonsurvival of spouse. This effect was not anticipated by the hypotheses of the study. The finding is significant in the chronological anticipation paradigm for the total sample (see Table 39).

Although this main effect for nonsurvival of spouse was not anticipated, here are three possible explanations of the effect:

1. Nonsurvival of spouse is a condition which facilitates future increased disengagement of the widowed person, while spouse survival facilitates future continued engagement which is not self-motivated.

2. Nonsurvival of spouse is a condition which facilitates future increased activity of the widowed person, while spouse survival facilitates future continued inactivity which is not self-motivated.

3. Nonsurvival of spouse bears no relation to either future activity or disengagement. It is related to a recovery to normal levels (with a possible recovery spike) of contentment in anticipation of release from the worries and depressed contentment levels experienced during the episode of the spouse's dying.

Suggestions for research designed to compare these three alternate hypotheses will be presented later in this chapter.

It is possible that survival of spouse may operate differently for the two sexes. If females become more content in

conjunction with anticipated nonsurvival of spouse, while males show no change in contentment or become less content in conjunction with anticipated spouse nonsurvival; the preponderance of females in the sample for this study could then account for this unexpected main effect in the results.

Since both responsibility and dependency shifts from the locus of the work place to the locus of the home following retirement age; males may become increasingly dependent and females increasingly responsible, especially if the division of labor and role structure of the marriage has been of a traditional type. Thus prospective loss of a spouse for a female would mean loss of a responsibility which may lead to higher contentment, while the prospect of losing a spouse for a male would mean loss of a support which may lead to lower contentment.

While the F values are not significant, the main effect of spouse survival is in opposite directions for the older and younger sample. For the older sample, spouse survival is associated with lower mean values of contentment, while in the younger sample, spouse survival is associated with higher mean values of contentment.

Discussion of Suggestions for Future Research

Some of the general approaches to furture research which may be useful are to: (1) broaden the list of variables which are used to support the theories, (2) narrow the definition of the presently useful variables, or (3) test further researchable questions regarding the circumstances under which one or the other of

the theories will be operant. More will be said about researchable questions following some specific suggestions for future research methodology.

Suggestions for Future Instrumentation

In the present study, the variables used as factors have been reduced to dichotomous data from instruments with longer scales. This was done so that the problem of small frequency in individual cells would be reduced to a minimum. In future studies, it would be desirable to allow all scales to assume their full range. For factors which appear to be true dichotomies, such as spouse survival, and residential location of PCG, it is possible to extend the range by adding the variable of time or distance to the scale. Such a change in the instruments would overcome ceiling and floor effects of the present measurement scales and allow the use of information from cases at the extremities of the scales. Such a change may work to specify the results of future research in greater detail.

Of all the instruments used in this study, the results from one, financial ability, were least useful and most disappointing. None of the main effects or interaction effects related to this instrument were significant. This seems unusual because the types of information from which the financial ability scale is constructed have been strongly related to contentment by past research. Table 1 reported results of past research as follows: (1) employment related to contentment in nine studies, (2) income level related to content-ment in four studies, and, (3) home ownership related to contentment

in one study. Financial ability is composed of family income level and the index of economic dependence. Two of the component parts of the index of economic dependence are employment and home ownership.

We suspect the substitution of large numbers of median values for missing values of family income and index of economic dependence has lessened the variability of the financial ability instrument to the point where it is impossible to show a relationship of this instrument to contentment, if such a relationship exists. Not only is this particular measure of financial ability not useful, but the practice of substituting a measure of central tendency for sizeable amounts of data in any measurement instrument should be avoided in future research. The effects we are attempting to capture in this area of research are not strong, in any event. Therefore, we should take special care to avoid all practices which weaken the ability of measurement instruments to detect relationships.

The criterion variable, contentment, has been measured by a five item scale which was assumed to be an adequate measure of "general satisfaction." The five items which comprise this scale include only two items which seem to reflect satisfaction of a "general" nature. (See Figure B10, Appendix B.) These two items are: "Would you say that you have been happy or unhappy during these past two weeks?" and "In general, how satisfied are you with your way of life today? Are you satisfied, partly satisfied, or dissatisfied?"

The remaining three items include references to specific attributes of an individual's life. These items are obviously not

all inclusive of matters which contribute to an individual's general satisfaction. They include health, age, and arrangements for household maintenance as their subject matter. These three items lessen the face validity of the five item scale as a measure of general satisfaction.

However, it should be pointed out that the developers of the contentment scale had culled these five items from an originally much larger set. They employed item analysis to find those items which correlated best with the total score on a longer "contentment" measure. Such a procedure should have worked to extract the most generalizable items from the longer set of items.

It is important that these three scale items may be viewed as attitude items, specific to several of the factors used as independent variables in this study. Without such artifactual dependence of the criterion measure, it may be impossible to show any effects on the criterion. The item on worry about health may be directly dependent on the level of activities of daily living and days of bed disability. The item on satisfaction with household maintenance chores may be linked to factors which affect such chores, such as the location of PCG, survival of spouse, and age environment. The item on "things just keep getting worse for me as I get older" may be related to the age environment, and spouse survival variables, both of which can be expected to be well correlated with age.

It is worth raising the question of whether a different measure of general satisfaction, one which did not contain items related to the independent factors, could show any significant

effects for the theoretically grounded hypotheses. This question ought to be addressed in future research. A beginning could be made by determining the effect of the factors of this study on each of the five items considered individually. For the present, it is questionable whether the criterion measure of contentment may be considered to have face validity for the construct of "general satisfaction."

One final suggestion regarding instrumentation remains. Stronger effects may result if subjective rather than objective data is gathered. The age environment variable would become subjective instrumentation if each person were asked the extent to which all the persons who lived with them in their residence were like/unlike themselves. This similarity could be based on age or on a more global perception by each subject.

The age covariate could become data based on a self-perceived age, scaled from young to old. In that case we would expect there to be little differentiation in self-perceived age for persons chronologically older than 65. We base this expectation on the fact that the objective age covariate produced very small nonsignificant F values for persons aged 65 and older. That would indicate that once a person reaches a certain threshold of chronological age, additional years of age become meaningless.

One final candidate for subjective instrumentation in the data set of this study would be financial ability. A request for subjective judgment about level of financial ability would, perhaps, have avoided some of the problems with missing data that plagued the objective measurement of this variable.

The confidence that subjective instruments will allow stronger effects to be obtained has a basis in the reality of the situation. It is the subjective perception of a variable's value upon which the subject depends during the internal process of adjustment of contentment level. The objective measure of the same variable cannot show such strong effects as the subjective measure because it is less directly related to the outcome level of contentment. See Table 1 for findings from earlier research of the relationship of self-perceived variables and satisfaction.

Suggestions for Data Collection Strategies

In order to obtain funding for any future research which calls for additional data collection on very sizeable samples of the elderly, it will probably be necessary to conduct such research as ancillary to funded data collection for applied purposes. The fact that the elderly are not available to serve as subjects in large captive institutionalized audiences, such as schools, simply adds to the expense of gathering data in this research area. Additional communication difficulties, and a slower pace of data gathering with the elderly adds still more to interviewing costs.

Data gathering of such an expensive nature must be well funded, and the realities of the present funding picture are that adequate funding will most likely be available through research which tests the usefulness of some manner of social reform. One strategy which should be adopted for doing theoretical research within such a research setting is to remove from consideration all data gathered

from those subjects who receive the experimental treatment. Such an approach has been adopted in the present study.

One further step, which was not implemented optimally in the present study, is the formulation of research design, data gathering, and instrumentation procedures which assigns the needs of the theoretical research nearly equal priority with the needs of the practical research. This should be done through straightforward discussion and agreement with the principal investigator and with the agents of the funding agency. The strategy is one of nondetraction from the stated research goals, for which funding was obtained; while accommodating to the additional goals of the theoretical research. Accomplishment of such theoretical goals in conjunction with demonstration of social reform A may allow more insightful planning of additional social reforms, B, C, etc., at a later time, while also adding to the store of knowledge about human behavior.

Suggestions for Analysis of Future Research

For purposes of future research, it is important to consider the appropriateness of the two analysis methods which have been employed in this study, analysis of covariance and analysis of variance, as well as the appropriateness of the specific covariates drawn upon for the analysis of covariance. The F values for the covariates in this study were significant at $p < .05$ for all covariates except the age covariate for the subsample of persons who are 65 years of age or older. Thus, the covariate of age appears to be an inappropriate choice for the analysis of data from this older sample.

Age is the only covariate used in the analysis of covariance for the older sample in the paradigms for Ho1 (C, A, D) and Ho4 (C, A, D). Therefore, it appears that analysis of covariance is an inappropriate procedure for those two hypotheses within the older sample.

It may be that some other variable, such as socio-economic status, would be a more appropriate covariate than age for persons 65 and older. A test of that possibility remains to be carried out in future research.

Suggestions for Sampling in Future Research

In general, while the total sample in the present study was of an adequate size, the younger sample was too small to produce adequate cell frequencies for the analysis of variance, and nearly too small to allow detection of significant effects if they did, in fact, exist. The slightly larger older sample came closer to an adequate size.

Any increase in the scale of measurement will demand a larger sample in order to afford a fairly continuous distribution along the scale. Since the standard deviation of contentment measured at time #1 is also lower than when the measure is made at time #2, hypotheses using the later criterion (Ho2. and Ho3.) require larger samples.

The method of sampling is important not only for production of a certain sample size, but also for production of a sample of specified characteristics. In the present study, the sample was

chosen in the manner it was to produce fairly equivalent frequencies in the subclassifications of the factors. The marginal distributions in Tables 8, 9, 10, and 11 indicate that this goal was accomplished with a fair degree of success for all factors except residential location of PCG. This sample was also designed so that it would be possible to discern change in the factor levels within a six month time span. We have been fairly successful in accomplishing this goal, for the factors of days of bed disability, independence in ADL and financial ability. The criterion of contentment also evidenced change within a six month period.

Because this sample was designed to accomplish the two goals of (1) equivalent frequency of "good" and "poor" classes of activity resources and (2) observability of change within a relatively short time span, an attendant difficulty has been designed into the sample. Due to heightened frequency in "poor" categories of functioning and a heightened rate of change in the sample, as compared with a representative sample of persons 45 and older, this design also produced an experimental mortality of 28.2% within six months. This experimental mortality was largely real mortality which may be related positively to rate of change and negatively to physical functioning.

In future research, if similar samples are tailored, mortality must be expected to remain a problem to be dealt with. One suggestion is to ascertain the entry level characteristics of persons lost from the sample, so that the effects of mortality may be separated from the actual change occurring over time.

Second, mortality effects different factors and different parameter of the criterion, contentment, in the older sample than it does in the younger sample. Because of this, it appears that these two samples are from two different populations. Future research should proceed to use larger samples of each age group, so that valid analyses may be carried out on each age group separately. Of course, the mortality itself should be planned for so that samples to be used in anaysis of data from a time subsequent to mortality of the sample will maintain large enough size to be useful.

It will be important to tailor samples as above if short time-span longitudinal research is part of the research design. In longitudinal designs with a time-span of two years or longer, a representative sample drawn from the normal aged population would be acceptable. Such a sample would also allow for generalization of the results to a larger population, and for a decrease in loss of sample over time due to mortality.

Future Research Questions

Two immediate extensions of the present study, which have already been mentined, are the analysis of the data for an urban and rural subsample, and for male and female subsamples. The latter may be of special importance when the spouse survival/nonsurvival variable is involved, since the effect of this variable may differentiate on the basis of sex. However, using the present data, we can expect that the frequency in several cells of the analysis will be so small as to make the data unreportable, as is true of the age subsamples. A larger subsample is really necessary for optimal analysis.

A second immediate extension of the present study would be a test of the older sample under analysis of covariance, to assess the behavior of Hollinghead's index of socio-economic position as a covariate to replace age, in the older sample.

Main Effects for Spouse Nonsurvival. Three alternate hypotheses were suggested earlier as possible explanations of the significant main effect for spouse nonsurvival. In order to better understand how this main effect relates to activity and disengagement theories, the analyses of variance and covariance should be run on subsamples of: (1) married persons, and (2) widowed persons. In this approach, all data from persons who are divorced, separated, or were never married would not be used. It would also be efficient to discontinue use of the analyses of factor A, age environment, crossed with factor C, spouse survival, in this approach to the data. Since the subsample of widowed persons is proportionally quite small, it would certainly be important to add more cases to the total sample before attempting this work.

In the study which we have suggested of a married subsample and a widowed subsample, better support for disengagement hypotheses among the widowed than among the married would lend support to the first hypothesis (nonsurvival facilitates disengagement). Better support for activity hypotheses among the widowed than the married would lead to support of the second hypothesis (nonsurvival facilitates activity). Little difference between the support given to activity hypotheses or disengagement hypotheses between the married

subsample and the widowed subsample would give indirect support to the last hypothesis (nonsurvival unrelated to activity or disengagement).

Type of Theory Related to Type of Variable.

Earlier in this chapter it was proposed that "self component" variables will provide evidence to support activity theory, while "other component" variables will provide evidence to support consistency theory. If these propositions are to be tested, one would wish to gather additional data, adding to the data set specific self component variables and specific other component variables which are different from the present set along some additional dimension.

Since both the other component variables used in this study appear to be related to other persons who may be classified as part of the subject's social support system, it is advisable to capture additional data on variables related to other persons who may be classified as part of the subject's social responsibility system. A few examples of such variables are: (1) single children living at home vs. no single children living at home, (2) alive, never married children vs. no alive, never married children, (3) supervises other persons in paid or volunteer work vs. does not supervise others in paid or volunteer work, (4) clients, customers, or students relate to the subject vs. no clients, customers, or students relate to the subject.

Regarding the variable of age environment, additional data should be gathered on the age environment of the neighborhood, and

the age environment in the work place or volunteer place of the sub-
ject, as well as the data which has been analyzed on the age environ-
ment of the subject's cohabitants.

Because both of the self component variables used in this
study relate to minimum levels of activity (being out of bed during
the day and carrying on usual self-maintenance activity), it is
advisable to gather additional activity data which increases the
range of the activity scale, and/or differentiates it into several
types of activity, such as social interaction in general, economic
activity, educational activity, household maintenance activity,
recreational activity. The purpose of such additional data gather-
ing and analysis is to determine whether the two general proposi-
tions (self vs. other variables), which have been stated previously,
will hold up under these diverse conditions, or whether the type of
theory supported is related to the classification of physical, social,
psychological variable, as suggested in Figure 20.

Relationship of Consistency Theory, Activity Theory, and Disengagement Theory.

Finally, if one assumes that both consistency
theory with its attendant interaction effects and activity theory
and disengagement theory with attendant main effects are operant
within the same individual, it will be necessary to determine
whether they operate concurrently or in sequence. If it can be
shown that they operate in sequence to each other, it will be neces-
sary to ask questions such as: (1) Does the sequence of operation
of the three theories depend on the chronological age of the subject?

(2) Does the sequence of operation of the three theories depend on the life span stage (married, widowed) of the subject? (3) Does the sequence of operation of the two theories depend on the cultural and ecological setting (rural, urban, male, female, etc.) of the subject?

If it can be shown that the theories operate concurrently within the same individual, it will be necessary to ask another set of questions such as: (1) Is the effect of the three theories on the level of contentment multiplicative? (2) Is the effect of the three theories on the level of contentment additive? (3) Is the effect of the three theories on the level of contentment determined by whichever effect is greatest? (4) Is the effect of the three theories on the level of contentment determined by whichever theory creates the highest (or lowest) level of contentment?

Suggestions for Future Research Strategy

It is always tempting to suggest true experimental designs, in order that the obtained results of research will be relatively more definitive. However, the types of data dealt with in this study do not lend themselves to manipulation without some major breech in current research ethics. A suggestion of true experimentation brings to the mind scenes such as an individual randomly assigned to have a primary care giver housed in the same building or a different building, or an individual being randomly assigned to stay in bed 24 hours a day or out of bed for at least 12 hours each day. Such possibilities are not within the realm of propriety or simple common sense, for a noninstitutionalized sample.

Eventual use of true experiments may be possible, if the range of variables related to the theories is broadened to include variables which are more trivial, and therefore may be manipulated reasonably and ethically. Until such changes occur in the content of the researchable variables, field studies will be the most elegant tool available in this area. As long as the field study approach is followed, there is no good method to isolate the effects of measured variables from the effects of contaminating variables which occur in combination with the studied variable in a natural setting.

Summary

This study has shown no support for disengagement theory hypotheses; has shown some support for consistency theory hypotheses, which are based upon suggestions made by Gubrium; and greatest support for activity theory hypotheses. We have discussed various suggestions for future research which are intended to specify the basis of successful aging more thoroughly. These include: suggestions for instrumentation, data collection strategy, analysis, sampling, research strategy, and research questions.

The discussion has pointed up the possibility that the results obtained in this study are highly related to the types of variables chosen for measurement in the study. Thus, these results may be misleading and should be used with caution.

A major suggestion has been made that there is a relationship between the type of "health" considered to be of highest priority by an individual and the aging style adopted. It was suggested that

physical health is tied to activity theory, social health tied to consistency theory, and psychological health tied to disengagement theory. It remains for future research to lend credence to this new approach to theory.

Two additional findings should be mentioned. The covariate of age appears to be neutralized for the older sample (65 and older). This suggests a curvilinear relationship between age and contentment.

It was also found that for the total sample there is a main effect which may be represented as a relation between anticipated nonsurvival of spouse and high contentment. Since nonsurvival of spouse was predefined as a low activity resource, this was unexpected. While not significant the effect is opposite for the older and younger samples--survival of spouse is tied to high contentment in the younger sample, and survival of spouse is tied to lower contentment in the older sample.

APPENDICES

APPENDIX A

COMPARISON OF SEVERAL MEASURES OF SATISFACTION/MORALE

APPENDIX A

COMPARISON OF SEVERAL MEASURES OF SATISFACTION/MORALE

Carp (1969) has stated the generalized problems created by poor attention to comparable measurement in research on elderly samples:

> A wasteful and dangerous tendency has been noted for gerontological research to be diffuse and incoordinate and for its findings to be repetitive or contradictory. Some confusion in the gerontological literature may result from insufficient attention to the nature of criterion variables. In gerontological studies in the behavioral sciences, important criterion concepts tend to be imprecisely defined. This tendency allows for the possibility that different studies deal with different traits under the same name and with the same trait under different names. In addition, important gerontological criterion concepts tend to be global, which provides opportunity for elements to be variously included and weighed in criterion measures for different studies. This variable inclusion of elements may be particularly obscurantist when components do not all operate according to the same rules (p. 341).

The special characteristics of satisfaction indices are pointed up by Bloom (1975) as a combination of curse and blessing on the head of the researcher:

> The various quality of life terms must rank among the softest, most personal or existential concepts which researchers have ever tried to capture in operational form. Yet, there are few concepts more important, especially for the practitioner who asks questions of this general form: "Intervention (treatment) to obtain what objectives?" Any answer to this type of question presumes some benefit to the client's quality of life. Interest in accountability of the helping professions has also put great pressure on the development of concepts and measures of quality of life (p. 2).

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Several criterion measures of general satisfaction/morale
are listed in the order of their length in Table A1. Of the meas-
ures listed, there is a particularly strong relationship between the
3rd, 4th, and 9th. The LSI-A, LSI-B, and LSR were developed as
equivalent measures of life satisfaction, and all were designed to
contain five components of the variable: zest, resolution and forti-
tude, congruence between desired and achieved goals, positive self-
concept, and mood tone. The LSI-Z is a shortened form of the LSI-A.
Of the four, only the LSR is based upon raters' observations, which
were made following a depth interview of one to four hours duration.

Interjudge Reliability

Interjudge reliability of less than 1 point of disagreement
was obtained in 95% of 100 LSR judgments (Wood, Wylie, & Sheafor,
1969) and in 94% of 885 LSR judgments interjudge reliability coeffi-
cient = .78) (Havighurst, 1963). Wood, Wylie, and Sheafor also
report the interjudge reliability percentage for each component of
the LSR as: (1) zest = 83%, (2) resolution and fortitude = 100%,
and (3) the three remaining components = 97% each.

Concurrent Validity

The following concurrent test validity correlations are
reported: Wood, Wylie, and Sheafor report r = .56 between LSI-A
and LSR; and r = .57 between LSI-Z and LSR. Havighurst (1961, 1963)
reports r = .58 between LSI-A and LSR; r = .71 between LSI-B and
LSR; r = .73 between LSI-A and LSI-B; and r = .62 between combined
LSI-A/LSI-B and LSR. Adams (1969) reports r = .93 between the
LSI-A and the LSI-Z.

TABLE A1: List of Various Measures of Satisfaction/Morale.

Name of Measure	N of Items	Source
1. Satisfaction	56	Cavan, Burgess, Havighurst, and Goldhamer (1949)
2. Morale	24	Lawton (1972)
3. Life Satisfaction Index--A (LSI-A)	20	Neugarten, Havighurst, and Tobin (1961)
4. Life Satisfaction Index--Z (LSI-Z)	13	Adams (1969)
5. Life Satisfaction Index--B (LSI-B)	12	Neugarten, Havighurst, and Tobin (1961)
6. Morale (Adjustment)	7	Kutner (1956)
7. Age-Associated Morale	7	Thompson (1973)
8. Contentment	5	Blenkner, Bloom, and Weber (1964)
9. Life Satisfaction Ratings (LSR)	5	Neugarten, Navighurst, and Tobin (1961)
10. Morale	4	Cumming and Henry (1961)
11. Happiness	3	Youmans (1974)
12. Life Satisfaction (refers to happiness)	1	Spreitzer and Snyder (1974)

At the same time, Bloom (1975) has reported a set of very low intercorrelations between four measures of quality of life: r = .20 between the LSR and morale, r = -.23 between the LSR and contentment, r = .29 between morale and contentment, r = .40 between the LSR and despair (Sherwood & Nadelson, 1972), r = .62 between morale and despair, r = .11 between contentment and despair. Such low Spearman rank order correlations resulted from a pilot study utilizing an indeterminately small number of subjects.

In all of the concurrent validity data reported above, there has been no attempt to assure independence of the criterion measure, in the sense that the same interviewer probably administered each test. This type of bias contamination is especially crucial in a test like the LSR, where the judgment of the interviewer is the criterion measurement. The following are reports of a test of concurrent validity based upon independent judgment: Blenkner, Bloom, and Weber (1964) report a validity of .69 (Pearsonian r) between the contentment scale and a five-place scale of judged contentment made by noninterviewers; Lawton (1972) reports a correlation of .47 between the morale scale and a judged criterion, and a correlation of .57 between morale and the LSR rating scale used by non-interviewers. Table A2 summarizes the concurrent test correlation data reported above.

Item Analysis

Item analysis of the LSI-A was carried out by both Adams and Wood, Wylie and Shaefor. Although Wood, Wylie, and Sheafor

TABLE A2: Intercorrelations for Several Measures of Satisfaction/Morale.

	LSI-A	LSI-B	LSI-Z	LSI-A/B	LSR	Morale	Contentment	Despair
LSI-A								
LSI-B	.73							
LSI-Z	.93							
LSI-A/B								
LSR	.58 .56	.71	.57	.62				
Morale					.57 .20			
Contentment					-.23	.29		
Despair					.40	.62	.11	
Independent, Judged Criterion						.47	.69	

do not report the methods or results of their item analysis, it was on the basis of that analysis that they shortened the LSI-A to the 13-item LSI-Z. Adams was able to identify two items which should be dropped from the LSI-A, based upon: (1) the item differences in percentage of affirmative item response associated with the top and bottom thirds of the sample scores, and (2) the "biserial correlation between the mean of the affirmative response groups of each item, and the LSI-A mean score of the whole sample."

The 18-item scale which Adams developed, dropping two items on the basis of the item analysis, and scoring each item with a weight equivalent to its correlation with the first factor in his factor analysis, had a validity correlation of .97 with the LSI-A. However, his path becomes somewhat circular, as he concludes:

> Since the weighted scoring system does correlate so highly with the usual scoring method, the assignment of differential weights to the items was considered an unnecessary burden and the weighted system was thus discarded. Since, however, the weighted scheme was derived from the item correlations with the life satisfaction factor, the fact that it did correlate so highly with the usual scoring system provides us with greater confidence in the validity of the latter (p. 473).

Reliability

Only three of the tests listed reported reliabilities. Wood, Wylie, and Sheafor (1969) report the 13-item LSI-Z has a reliability of .79 (KR formula #20, coefficient alpha). Blenkner, Bloom, and Weber (1964) report the contentment scale has a reliability of .88 (KR formula #21) for an earlier 19-item version. Use of the Spearman Brown prophecy formula reveals that the reliability for the

5-item version of the contentment scale would be expected to be .65. Lawton reports a reliability (KR 21) of .81 for the 24-item morale scale.

Lawton also reports a split half r of .74 which he claims is corrected to ".79 by the Spearman Brown formula (N=300)." However, actual computation of the prophecy formula by this author indicates a corrected r of .85. He also reports three test-retest reliabilities:

1. r = .75 for three-month's time on 25 elderly Jewish apartment dwellers.

2. r = .91 for five-week's time on 14 elderly Lutheran home dwellers.

3. r = .80 for one-week's time on 25 elderly day-care center participants.

Factor Analysis Results

Lawton conducted a factor analysis of the 24-item morale scale. He found a first factor which accounted for 22.3% of the variance, plus five other factors, which taken together accounted for 30.5% of the variance, for a total of 52.8% of the variance accounted for by the six factors. The strongest factor was labeled "attitude toward own aging."

Adams also carried out a factor analysis to discover if the five components built into the LSI-A were operating independently, or whether the measure actually measures a unitary variable, life satisfaction. He limited the number of his factors to five and found that the first factor accounted for 34% of the variance, while the next four factors accounted for 8%, 7%, 5%, and 4%, respectively,

for a total of 58% of the variance accounted for by the five factors. He concluded that "These values suggest that there is but one major factor associated with the LSI-A items, presumably life satisfaction" (p. 472).

After factor rotation, Adams found only four factor clusters discernible. It appeared that there was no cluster of items extracted to represent the component of positive self-concept. This finding seems likely, in light of an earlier report by Neugarten, Havighurst, and Tobin (1961) of the intercorrelations between the components of life satisfaction. The intercorrelation of positive self-concept and the four other factors ranged from .82 to .73.

In the Adams study, six items correlated highly with the first factor, and these appeared to be the items which represent the component of "mood tone." Furthermore, of these six items, only one was an item which was removed by Wood, Wylie, and Sheafor after item analysis.

While the Adams factor analysis of the LSI-A was done using an $\underline{N}$ of 508 and a fairly limited domain of items, Schooler (1970) has performed a factor analysis on a less well defined set of items presumed to represent the domain of morale, using an $\underline{N}$ of 4,000. The Lawton morale scale, among others, was part of the group of items analyzed by Schooler. He found six factors, but does not report what percentage of the variance is accounted for by these factors. He labels his six factors: (1) fears and worries (7 Lawton morale items), (2) anomie (4 items from the Srole anomie scale),

(3) age and self-identification and observation of alertness, (4) feelings about life-long accomplishment, (5) (relatively) more sustained unhappiness and dissatisfaction (several Lawton morale items), and (6) relative financial situation.

In regard to the morale scale of Lawton, another apparent component of that scale was identified by Thompson (1973) in attempting to develop an age-associated morale scale. Six of Thompson's seven-place scale are six of the 24 Lawton morale items. All six of these items load .35 or higher on the age-associated morale factor in Thompson's analysis. Thus, at least three separate components may be discerned in the Lawton morale items: (1) age-association, (2) fears and worries, and (3) sustained unhappiness and dissatisfaction.

From the factor analysis results, one might conclude that a five-item test could be used for efficient measurement of life satisfaction or morale, with a single item representing each factor. Of course, use of a greatly shortened test will contribute to lessening the obtained reliability of the test. In relation to this suggestion for a shorter scale, we should note, with Havighurst (1961), that the Kutner seven-item scale is reported to be a unidimensional scale of Guttman scale properties. However, no reliability data is available on the Kutner scale.

APPENDIX B

CODEBOOK AND DATA COLLECTION ITEMS FOR

VARIABLES USED IN THIS STUDY

Variable Number	Variable Name	Interpretation	Data Source
205	Sex of Participant	F = 1 M = 2	Data Control Sheet - First Stage Screening (1a) Page 2, Item 4 (1b,1c,1d,1e) Page 1
217	Ethnic Group	Code for 1a Interview: Black (2) =1 White (1) =2 No Data =9 Code for 1b and 1c Interview: Black (1) =1 White (2, 3, 4, 5, or 6) =2 No Data =9 Code for 1d and 1e Interview: Black (English only) =1 White (English only) =2 White (Spanish) =3 Black (Spanish) =4 White (other language) =5 Black (other language) =6 No data =9	Data Source item found on 1a, interview forms: RACE (observe ethnic group) 1. White 2. Black Data source found on 1b - 1c interview forms: (Observe ethnic group) 1. Black 2. White - native American culture 3. White - Hispanic culture (includes Spanish or Portugese spoken habitually) 4. White - other foreign language spoken habitually 5. White - English speaking culture, not native American culture 6. Oriental Data source found on 1d - 1e interview forms: 8a. IS THERE ANY LANGUAGE OTHER THAN ENGLISH WHICH YOU SPEAK (CAN SPEAK EASILY) WITH FRIENDS AND/OR RELATIVES? 1. No - speaks English only 2. Yes (specify language(s)) _____ 8b. (Interviewer - observe, do not ask unless undecided) DO YOU THINK OF YOURSELF AS A BLACK (NEGRO) PERSON OR A WHITE PERSON? 1. Black (Negro) person 2. White person
216	Marital Status	Married =1 Divorced or separated =2 Widowed =3 Never married =4 No data =9	16. ARE YOU MARRIED, DIVORCED, WIDOWED, SEPARATED (intentionally). OR HAVE YOU NEVER MARRIED? (note: Married takes precedence over also being divorced or widowed) 1. Married (spouse may be separated for other reasons, such as hospitalization, military service, etc.) 2. Divorced or separated (intentionally) 3. Widowed 4. Never married

Figure B1. Three demographic variables: sex, ethnic group, marital status.

Variable Number	Variable Name	Interpretation	Data Source
242	Occupation Score--Self	Higher Executives =1 Business Managers, and Lesser Professionals =2 Administrative Personnel =3 Clerical, Sales, Technical =4 Skilled Manual =5 Semi-skilled =6 Unskilled =7 Housewife or student =8 Response does not mention occupation or no data =9 Occupation score is graded by what type of work the participant did, at what level the participant worked (college teacher or high school teacher). The number of people that the participant may have supervised is also considered. The Hollingshead scale was used to classify occupations. This scale is found on the following few pages.	61. WHAT KIND OF PAID WORK DID YOU DO AT THE HEIGHT OF YOUR WORKING CAREER? (This will probably be the last type of work for both retired and still employed persons) (This is not necessarily the work done for the longest time period. For instance, a woman may have been a housewife for the longest time, but taught school for 5 years. She was a teacher, or a housewife, depending on which job she feels was the height of her career.) (Probe: DID YOUR JOB HAVE A NAME? WHAT WAS THE NAME OF YOUR POSITION?) 62. WAS THIS JOB WITH GOVERNMENT, PRIVATE BUSINESS, OR WERE YOU SELF-EMPLOYED? (government includes Federal, state, county, and local, as well as public schools, and state universities, or military services) (do not assume farmers are self-employed) 1. Government 2. Business (private schools and non-profit corporations) 3. Self-employed 4. No codable answer 63. DID YOU HAVE A TITLE? WERE YOU ANY KIND OF OFFICER, OFFICIAL, OR PARTNER? (especially important for managers, self-employed, military service, and other governmental employees) (check for skilled, semi-skilled, and unskilled or clerical, if person was ever a foreman, or supervisor) (Probe: WERE YOU INVOLVED IN ADMINISTRATION? WERE YOU INVOLVED IN SUPERVISION? IF SO, HOW MANY PEOPLE DID YOU SUPERVISE (HAVE UNDER YOU)?) (For persons employed in government skip 64, 65, and 66) 64. WHAT WAS THE NAME OF THE ORGANIZATION (COMPANY NAME)? 65. WHERE WAS IT LOCATED (CITY AND STATE)? 66. HOW LONG AGO WAS THIS (HEIGHT OF WORKING CAREER)? (years, approximately)

Figure B2. Highest occupation variable.

Variable Number	Variable Name	Interpretation	Data Source
243	Educational Score—Self	Graduate degree (3 in item 72) =1 Bachelor's degree (2 in item 72, or 1 in item 71) =2 One year or more of college (1 in item 70) =3 High school graduate (1 in item 70) =4 Tenth or eleventh grade (3 in item 67) =5 Seventh, eighth or ninth grade (2 in item 67) =6 Less than 7 years of school (1 in item 67) =7 No codable answer or no data =9	67. WHAT WAS THE LAST GRADE IN SCHOOL WHICH YOU COMPLETED? (circle grade) 1. NonK'Garten 1 2 3 4 5 6 (go to bottom of page 16) 2. 7 8 9 (Go to bottom of page 16) 3. 10 11 (Go to bottom of page 16) 4. 12 (ask #68) 9. No codable answer 68. DID YOU GRADUATE FROM HIGH SCHOOL? 1. yes 2. no (skip 69, 70, 71, and 72) 8. question skipped by RI 9. No codable answer 69. DID YOU ATTEND COLLEGE? 1. yes 2. no (skip 70, 71, and 72) 8. question skipped by RI 9. No codable answer 70. WHAT WAS THE LAST YEAR OF COLLEGE (college credit granting institution) YOU COMPLETED? 1. 1 2 3 (skip 71 and 72) 2. 4 3. 5 or more 8. Question skipped by RI 9. No codable answer 71. DID YOU GRADUATE, WITH A BACHELOR'S DEGREE (OR EQUIVALENT) FROM COLLEGE? 1. yes 2. no (skip 72) 8. Question skipped by RI 9. No codable answer 72. DID YOU COMPLETE AN ADVANCED DEGREE (GRADUATE OR PROFESSIONAL DEGREE)? 1. No - not even a bachelor's degree 2. No - completed a bachelor's degree 3. Yes - completed at least 1 graduate or professional degree 8. Question skipped by RI 9. No codable answer

Figure B3. Educational attainment variable.

Variable Number	Variable Name	Interpretation	Inter-Related Variables	Data Source
211	PCG--Relationship to Participant	Spouse =1 Child =2 Sibling =3 Parent =4 Other relative =5 Friend or Neighbor =6 Employee =7 Other (include Service and Professional =8 No PCG =9 No data =0	If V# 211 = 9 V# 212 = 8 and V# 213 = 60 and V# 214 = 199 and V# 215 = 8	Items found on outpatient interview forms 15. WHO IS THE PERSON WHO GIVES YOU THE MOST DIRECT HELP WITH PERSONAL CARE AND HOUSE-HOLD TASKS? (Probe: THINGS LIKE BATHING, DRESSING, LAUNDRY, COOKING, SHOPPING, CLEANING, AND SUCH?) WHAT IS THIS PERSON'S RELATION TO YOU? 1. Spouse 2. Other relative (specify)___ 3. Friend 4. Neighbor 5. Employee 6. Other (specify) 15. (Ask only if the above named person does not live with the participant) WHAT IS THIS PERSON'S NAME, ADDRESS, AND TELEPHONE NUMBER? (If questioned add, PART OF THE RESEARCH INVOLVES INTERVIEWING THIS PERSON YOU'VE MENTIONED ALSO.) Address: Age___ Sex___ Telephone___ (verify PCG address given on page 1)

Figure B5. Variable of PCG relationship to participant.

Variable Number	Derived Variable Name	Interpretation	Rules of Formation	Raw Variables Used as Data Source
273	PCG's Sex Relative to Participant at Initial Interview	1 = PP is female and PCG is opposite sex 2 = PP is female and PCG is same sex 3 = PP is male and PCG is opposite sex 4 = PP is male and PCG is same sex 5 = PP is female and there is no PCG 6 = PP is male and there is no PCG 9 = Insufficient data to classify	Use the following code to write the value of V#273 *Value within cell is the value of V#273 Range of Var 273 = 1-6 or 9 = missing	205,215

Variable Number	Variable Name	Interpretation	Data Source	
205	Sex of Participant	F = 1 M = 2	Data Control Sheet--First Stage Screening (1a) Page 2, Item 4 (1b, 1c, 1d, 1c) Page 1	
215	PCG - Sex	F = 1 M = 2 No PCG = 8 No data = 9	Item found on inpatient interview forms. 15. BEFORE YOU CAME HERE WHO WAS THE PERSON WHO GAVE YOU THE MOST DIRECT HELP WITH PERSONAL CARE AND HOUSEHOLD TASKS? (Probe: THINGS LIKE BATHING, DRESSING, LAUNDRY, COOKING, SHOPPING, CLEANING AND SUCH?) WHAT IS THIS PERSON'S RELATION TO YOU? 1. Spouse 2. Other relative (specify) 3. Friend 4. Neighbor 5. Employee 6. Other (specify) Item found on outpatient interview forms 15. WHO IS THE PERSON WHO GIVES YOU THE MOST DIRECT HELP WITH PERSONAL CARE AND HOUSEHOLD TASKS? (Probe: THINGS LIKE BATHING, DRESSING, LAUNDRY, COOKING, SHOPPING, CLEANING, AND SUCH?) WHAT IS THIS PERSON'S RELATION TO YOU? 1. Spouse 2. Other relative (specify) 3. Friend 4. Neighbor 5. Employee 6. Other (specify) 15. (Ask only if the above named person does not live with the participant) WHAT IS THIS PERSON'S NAME, ADDRESS, AND TELEPHONE NUMBER? (If questioned add, PART OF THE RESEARCH INVOLVES INTERVIEWING THIS PERSON YOU'VE MENTIONED ALSO.) Address: Age ___ Sex ___ Telephone ___ (verify PCG address given on page 1)	

Figure B4. Variable of PCG sex in relation to participant.

Variable Number	Variable Name	Interpretation	Data Source

207A	Residence Stability	V# 207A is an ordered scale of length of time the participant has lived at their present residence (or residence to which they are going to discharge).
		
		2 = Less than a month
		3 = Less than a year
		4 = At least 1 year, but less than 5 years
		5 = At least 5 years, but less than 10 years
		6 = 10 years or more
		
		Range = 2 - 6
		    or = 9 (missing)
			Item found on outpatient interview forms:
			2. HOW LONG HAVE YOU LIVED AT YOUR PRESENT HOME?
			  2. Less than a month
			  3. Less than a year
			  4. At least 1 year, less than 5 years
			  5. At least 5 years, less than 10 years
			  6. 10 years or more
			  8. Question skipped by RI
			  9. No codable answer given

Figure B6: Length of time at residence variable.

Variable Number	Variable Name	Interpretation	Data Source
219	N of Cohabitants	N as given Does or will live alone No cohabitants = 8 No data = 9 Range = 1-7	Item found on inpatient interview forms: 9. How many other people will live with you when you leave the hospital? 10. Who will live with you when you leave the hospital? (Table relationship and sex below.) Item found on outpatient interview forms? 9. How many other people live with you? 10. Who lives with you? (Table relationship and sex below.)

Relationship to Participant	Sex M / F		Age	Employed	Full Time
1					
2					
3					
4					
5					
6					
7 Self	⊠	⊠	⊠		
8 Question skipped by RI 9 No codable answer given					

Figure B7. Number of cohabitants variable.

Variable Number	Variable Name	Interpretation	Data Source
220	Ownership of Residence	No one who lives there = 1 Self or spouse = 2 Someone else who lives there = 3 No codable answer or no data = 9 Since the concern here is with functional residence a patient who lives in a residence which he does not own is classed as "not" the home owner though he may be the legally designated owner of some other dwelling. A patient who is co-owner of his place of residence is classed as a home owner. Trailer ownership is not defined as home ownership unless the patient or his spouse own the land and pay taxes on the land on which the trailer stands.	Item found on outpatient interview forms 13. WHO OWNS YOUR HOME HERE? 1. No one who lives here--residence is rented from others by self or spouse or others who live here 2. Self or spouse own the home 3. Someone else who lives here owns the home 9. No codable answer given

Figure 88: Owner of residence variable.

Variable Number	Variable Name	Interpretation	Data Source
218	Head of Household	Self = 1 Spouse = 2 Other = 3 No data or no codable = 9 answer	12. WHO IS THE HEAD OF THE HOUSEHOLD OR FAMILY? (circle number below)

Relationship to Participant	Sex M. F	Age	Employed	Full Time
1				
2				
3				
4				
5				
6				
7 Self				
8 Question skipped by RI				
9 No codable answer given				

Figure B9. Head of household variable.

Variable Number	Derived Variable Name	Interpretation	Rules of Formation	Raw Variables Used as Data Source
440	Contentment-- Initial Score	440 = the N of "contented" responses out of a possible score of 5. If V# 440 = -99999 the data for at least one of the five responses was missing.	Recode V# 421-425, 9 = -99999. Count all 2 punches in these 5 variables and write in V #440. If any of the 5 V#'s 421-425 = -99999, then V# 440 = -99999. Range of V# 440 = 0 - 5 or = -99999	421 - 425

Variable Number	Variable Name	Interpretation	Data Source
421	Concern for Health	Any answer which indicates some worry = 1; "no" - unqualified = 2; No codable answer given = 9. If the PCG or someone else influenced the answer or answers for the participant, code that influenced item = 9 (no codable answer).	HAS YOUR HEALTH BEEN A WORRY FOR YOU DURING THE PAST TWO WEEKS? 1. No - unqualified 2. Any answer which indicates some worry 9. No codable answer
422	Satisfaction with Living Arrangements	Dissatisifed (3) = 1; Satisfied or partly satisfied (1 or 2) = 2; No codable answer = 9. Further interpretation of this variable may be found with V# 421.	Item found on outpatient interview forms. IN GENERAL, HOW SATISFIED ARE YOU WITH YOUR ARRANGE-MENTS FOR HOUSECLEANING, COOKING, LAUNDRY AND SHOPPING? ARE YOU SATISFIED, PARTLY SATISFIED OR DISSATISFIED? (Be sure to read the choices to the respondent) 1. Satisfied (include "I have to be satisfied") 2. Partly satisfied 3. Dissatisfied 9. No codable answer

Figure 810: Criterion variable: contentment.

Variable Number	Variable Name	Interpretation	Data Source
423	Happiness	Unhappy (3) or unhappy and happy (2) = 1 Happy (1) = 2 No codable answer = 9 Further interpretation of this variable may be found with V# 421.	WOULD YOU SAY THAT YOU HAVE BEEN HAPPY OR UNHAPPY DURING THESE PAST TWO WEEKS? 1. Happy 2. Both happy and unhappy 3. Unhappy 9. No codable answer given
424	Satisfaction with Way of Life	Dissatisfied (3) or partly satisfied = 1 Satisfied (1) = 2 No codable answer = 9 Further interpretation of this variable may be found with V# 421.	IN GENERAL, HOW SATISFIED ARE YOU WITH YOUR WAY OF LIFE TODAY? ARE YOU SATISFIED, PARTLY SATISFIED, OR DISSATISFIED? (Be sure to read the choices to participant) 1. Satisfied 2. Partly satisfied 3. Dissatisfied 9. No codable answer
425	Optimism	(1) Agree = 1 (2) Disagree = 2 No codable answer = 9 Further interpretation of this variable may be found with V# 421.	WOULD YOU AGREE OR DISAGREE WITH THOSE PEOPLE WHO SAY "THINGS JUST KEEP GETTING WORSE FOR ME AS I GET OLDER"? 1. Agree 2. Disagree 3. No codable answer given

Figure B10: (Cont'd.)

Derived Variable Name	Interpretation	Rules of Formation	Raw Variables Used as Data Source

Age Environment	1 = the subject lives with others, all of whom are
	  a. 45 and older
	  OR b. younger than 45, but less than 10 years younger than the subject.
	2 = the subject lives with others, at least one of whom is
	  AND a. younger than 45
	  b. 10 or more years younger than the subject.
		1. If V307 = 8, do not form Age Environment
		2. Search V320-V325 for value < 45
		3. If no such value found, Age Environment = 1
		4. If such value found (for each such case)
		  If V08 - (value < 45) < 10, Age Environment = 1
		  If V08 - (value < 45) ≥ 10, Age Environment = 2
			08, 307, 320, 321, 322, 323, 324, 325

Variable Number	Variable Name	Interpretation	Interrelated Variables	Data Source
				Data Control Sheet
08	Age of Participant at First screening Event	Age as given (in years) Age 98 or over = 98 No data = 99		
307	N of Cohabitants	One person = 1 Two persons = 2 Seven persons + = 7 Does or will live alone = 8 No codable answer or no answer = 9	If V# 307 = 8 V# 308 - 313 = 99 V# 314 - 319 = 9 V# 320 - 325 = 99 V# 326 - 331 = 9 V# 332 - 337 = 9 V# 338 - 349 = 9	Items found on inpatient interview forms: 9. How many other people will live with you when you leave the hospital? Item found on outpatient interview forms: 9. How many other people live with you?
320	Age of 1st cohabitant	Age in years as given 98 or over = 98 No data or no name on line = 99	Interrelated variables are found with V# 307	11. HOW OLD ARE THEY? (table age below)
321	Age of 2nd cohabitant	Interpretation is found with V# 320	Interrelated variables are found with V# 307	
322	Age of 3rd cohabitant	Interpretation is found with V# 320	Interrelated variables are found with V# 307	
323	Age of 4th cohabitant	Interpretation is found with V# 320	Interrelated variables are found with V# 307	
324	Age of 5th cohabitant	Interpretation is found with V# 320	Interrelated variables are found with V# 307	
325	Age of 6th cohabitant	Interpretation is found with V# 320	Interrelated variables are found with V# 307	

Relationship to Participant	Sex M / F	Age	Employed	Full Time
1				
2				
3				
4				
5				
6				
7 Self	✗	✗		

8 Question skipped by RI
9 No codable answer given

Figure B11. Factor A: age environment

Variable Number	Derived Variable Name	Interpretation	Rules of Formation	Raw Variables Used as Data Source
261	Residence Location of PCG at Time of Initial Interview	Range for V# 261 = 1-3 or = -99999 A primary caregiver (PCG) is defined as the person (either relative or friend) who gives the subject the most direct help with both personal care and household tasks: things like bathing, dressing, laundry, cooking, shopping, cleaning, etc. 1 = PCG lives with participant in house or apartment building 2 = PCG lives in a separate house or building from the partici-pant 3 = No PCG has been identified for this participant -99999 = Insufficient data available	Recode V#212 and write as V# 261 8 = 3 9 = -99999 Range for V# 261 = 1-3 or = -99999	212

Variable Number	Variable Name	Interpretation	Data Source	
212	PCG - Residence	With participant =1 Separate from participant =2 No PCG =8 No data =9	Item found on outpatient interview form 15. WHO IS THE PERSON WHO GIVES YOU THE MOST DIRECT HELP WITH PERSONAL CARE AND HOUSEHOLD TASKS? (Probe: THINGS LIKE BATHING, DRESSING, LAUNDRY, COOKING, SHOPPING, CLEANING AND SUCH?) WHAT IS THIS PERSON'S RELATION TO YOU? 1. Spouse 2. Other relative (specify) _____ 3. Friend 4. Neighbor 5. Employee 6. Other (specify) _____ 15. (Ask only if the above named person does not live with the participant) WHAT IS THIS PERSON'S NAME, ADDRESS, AND TELEPHONE NUMBER? (If questioned add, PART OF THE RESEARCH INVOLVES INTERVIEWING THIS PERSON YOU'VE MENTIONED ALSO.) Address: _____ _____ Age ____ Sex ____ Telephone _____ (verify PCG address given on page 1)	

Figure B12: Factor B: residential location of PCG.

Variable Number	Derived Variable Name	Interpretation	Rules of Formation	Raw Variables Used as Data Source
268	Spouse survival at the Initial Interview	Range of V# 268 = 1, 2 or = -99999 1 = Spouse of participant survives 2 = Participant has no surviving spouse -99999 = Insufficient data available to code	Recode V# 216 into V# 268 V# 216 = 1 ──→ V# 268 = 1 V# 216 = 2,3,4 → V# 268 = 2 V# 216 = 9 ──→ V# 268 = -99999 Range of V# 268 = 1-2 or = -99999	216

Variable Number	Variable Name	Interpretation	Data Source
216	Marital Status	Married = 1 Divorced or separated = 2 Widowed = 3 Never married = 4 No data = 9	16. ARE YOU MARRIED, DIVORCED, WIDOWED, SEPARATED (intentionally), OR HAVE YOU NEVER MARRIED? (note: Married takes precedence over also being divorced or widowed) 1. Married (spouse may be separated for other reasons, such as hospitalization, military service, etc.) 2. Divorced or separated (intentionally) 3. Widowed 4. Never married

Figure B13. Factor C: spouse survival--time #1.

Variable Number	Derived Variable Name	Interpretation	Rules of Formation	Raw Variables Used as Data Source
668	Spouse survival at the 6-month interview	Range of V#668 = 1,2 or = -99999 1 = Spouse of participant survives 2 = Participant has no surviving spouse -99999 = Insufficient data available to code	Recode V#633 into V#668 V#633 = 2 ⟶ V#668 = 1 V#633 = 1,3,4 → V#663 = 2 V#633 = 5,9 ⟶ V#663 = -99999 Range of V#668 = 1-2 OR -99999	633

Variable Number	Variable Name	Interpretation	Data Source
633	Death of Spouse	Spouse died in last six months = 1 Spouse still alive = 2 Never married, divorced, or separated = 3 Widowed more than six months ago = 4 RI unable to determine = 5 No codable answer (do not code divorced as 9) or no data = 6	9. (If spouse has died in the last six months ask:) WHEN WAS THAT? WHEN DID YOUR WIFE/HUSBAND PASS AWAY? 1. Spouse deceased in last six months (specify date) ___ 2. Spouse still alive 3. Never married 4. Widowed more than six months ago 5. RI unable to determine

Figure B14. Factor C: spouse survival--time #2.

Variable Number	Variable Name	Interpretation	Inter-related Variables	Data Source
407	Morbidity	(Ranges from 00-14) N of days spent in bed (all or most of the day) in the last 2 weeks as given No data = 19 "Most of the day" consists of more than half of the daylight hours, or more than four to five hours a day for naps. Whether or not the participant dresses every day is another criterion. Hospital days are automatically counted as "bed days."	If V# 109 = 2, V# 407 may not = 00 If V# 126 = 1, V# 407 may not = 00	Item found on outpatient interview form DURING THE PAST TWO WEEKS HOW MANY DAYS DID YOU STAY IN BED ALL OR MOST OF THE DAY? (Number of days)

Figure B15: Factor D: days of bed disability.

Variable Number	Derived Variable Name	Interpretation	Rules of Formation	Raw Variables Used As Data Source
439	ADL (Index of Independence in Activities of Daily Living - Katz) Initial Score	439 = the N of "independent" activities out of a possible score of 6. If V# 439 = -99999, the data for at least one of the six activities was missing.	Recode V# 415-420 7 = -99999 9 = -9999 Count all 1 punches in these 6 variables and write in V# 439. If any of the 6 V#'s 415-420 = -99999, then V# 439 = -99999 = -9999 Range of V# 439 = 0 - 6 or = -99999	415 - 420

Variable Number	Variable Name	Interpretation	Data Source

415	Bathing	Independent = 1
		Dependent = 2
		Refusal = 7
		No codable answer = 9
			ARE YOU MANAGING MOST OF YOUR PERSONAL CARE BY YOURSELF? LET'S THINK OF SOME SPECIFIC THINGS. FOR INSTANCE, DOES ANYONE HELP YOU TO GET IN AND OUT OF THE BATHTUB OR SHOWER? (in the past two weeks)
			(Probe: HOW DO YOU BATHE? IN A SHOWER? TUB? OR SPONGE BATH? DOES ANYONE HELP YOU BATHE?) (If yes - DO YOU GET HELP WITH ONLY A SINGLE PART OR MORE THAN THAT? DOES ANYONE GO WITH YOU TO YOUR BATH? DOES ANYONE BRING YOU YOUR BATH WATER?)
			
			1. Independent
			  a. bathes self completely, in shower, tub, or sponge bath.
			  b. gets assistance, support or supervision in bathing a single part (such as back or disabled extremity), or
			2. Dependent
			  a. gets assistance, support or supervision in bathing more than one part of the body, or
			  b. gets assistance, support or supervision getting in and out of the tub, or to the bath
			  c. has bath water brought to them
			  d. does not bathe self
			7. Refusal
			9. No codable answer
			
			Circle the most dependent level of functioning during the past two weeks. We want to find out what the respondent has actually done in the past two weeks, not what he/she is capable of doing.

Figure B16: Factor E: Independence of activities of daily living.

Variable Number	Variable Name	Interpretation	Data Source
416	Dressing	Independent = 1 Dependent = 2 Refusal = 7 No codable answer = 9	HOW DO YOU MANAGE YOUR DRESSING? (in past two weeks?) (Probe: DOES ANYONE HELP YOU GET YOUR CLOTHING OUT OF CLOSETS AND DRAWERS? DOES ANYONE HELP YOU GET DRESSED? DO YOU GET DRESSED EVERY DAY?) 1. Independent a. gets clothes from closets and drawers and b. puts on braces every day (if necessary), and c. puts on clothes, outer garments, stockings and shoes or slippers, and manages all clothing fasteners (except tieing shoes, or zipping back zippers which is not necessary for an "independent" code) 2. Dependent a. receives assistance or supervision in getting clothing out of closets and drawers or b. receives assistance or supervision in getting dressed or c. does not change attire (i.e., remains partly undressed e.g., shoes off, in bathrobe over pajamas) 7. Refusal 9. No codable answer For further information about the data source, see V# 415.
417	Toileting	Independent = 1 Dependent = 2 Refusal = 7 No codable answer = 9	HOW ABOUT TOILETING? (in past two weeks?) (Probe: HOW DO YOU GET TO THE BATHROOM? DOES ANYONE HELP YOU WITH YOUR TOILETING--HELP YOU WITH GETTING ON THE SEAT, WITH ARRANGING YOUR CLOTHING, WITH CLEANING YOURSELF (PRIVATE PARTS). DO YOU EMPTY YOUR OWN BEDPAN (COMMODE)? 1. Independent a. gets to toilet room, and b. gets on and off toilet, and c. arranges clothes; cleans organs of excretion, or d. may manage own bedpan or commode at night only and empties it e. note: it is acceptable for P to use mechanical supports such as cane, crutches, walkers, wheelchairs, etc. 2. Dependent a. used bedpan or commode during daytime, or uses either at night, without emptying it, or b. receives assistance or supervision in getting to toilet room, or c. receives assistance or supervision in getting on and off toilet seat, or d. receives assistance or supervision in arranging clothes, or cleaning organs of excretion 7. Refusal 9. No codable answer For further information about the data source, see V# 415.

Figure B16: (Cont'd.)

Variable Number	Variable Name	Interpretation	Data Source

418	Transferring	Independent = 1
		Dependent = 2
		Refusal = 7
		No codable answer = 9
			CAN YOU GET IN AND OUT OF BED BY YOURSELF (AND/OR IN AND OUT OF CHAIRS)? (in past two weeks) (Probe: HOW DO YOU GET OUT OF BED? HOW DO YOU GET OUT OF CHAIRS?)
			
			1. Independent
			  a. moves in and out of bed and chairs independently
			  b. note: may or may not be using mechanical supports such as canes, crutches, walkers, wheelchairs, etc.
			2. Dependent
			  a. assistance in moving in and out of bed and/or chair or
			  b. does not move from bed or chair
			7. Refusal
			9. No codable answer
			
			For further information about the data source, see V# 415.

419	Eating	Independent = 1
		Dependent = 2
		Refusal = 7
		No codable answer = 9
			DO YOU RECEIVE ANY HELP IN EATING? (in past two weeks)
			
			1. Independent
			  a. gets food from plate (or its equivalent) into mouth
			  b. note: not necessary that usual implements be used by P
			  c. note: acceptable to code as 1, independent, if the participant receives assistance in preparation of food, such as precutting of meat and buttering of bread.
			2. Dependent
			  a. assistance given by other in act of feeding or
			  b. does not eat at all--reliant on intravenous feeding
			7. Refusal
			9. No codable answer
			
			For further information about the data source, see V# 415.

Figure 816: (Cont'd.)

Variable Name	Variable Name	Interpretation	Data Source

420	Continence	Independent = 1
		Dependent = 2
		Refusal = 7
		No codable answer = 9
			DO CERTAIN FOODS SEEM TO GIVE YOU PROBLEMS WITH ELIMINATION? (in past two weeks) DO YOU HAVE ACCIDENTS WITH DIARRHEA? DO YOU LOSE CONTROL OF YOUR BOWELS OR BLADDER: DO YOU HAVE ACCIDENTS?
			
			1. Independent
			   a. urination and defecation entirely self-controlled, either by internal control or external management such as enemas, suppositories, colostomy, bedpan, urinal, etc.
			
			2. Dependent
			   a. partial or total incontinence in urination or defecation or both or
			   b. partial or total assistance or supervision of control by enemas, catheters, or use of urinals and/or bedpans, or colostomy
			
			7. Refusal
			9. No codable answer
			
			For further information about the data source, see V# 415.

Figure B16: (Cont'd.)

Variable Number	Variable Name	Interpretation	Data Source
644	Family Income	Less than $3,000 (1) = 1 $3,000 to $4,999 (2) = 2 $5,000 to $6,999 (3) = 3 $7,000 to $9,999 (4) = 4 $10,000 to $14,999 (5) = 5 More than $14,999 (6) = 6 No Data = 9	73. HOW MANY OF THESE PEOPLE ARE RELATED TO YOU BY BLOOD, MARRIAGE OR ADOPTION? (Specify number) NOW I'D LIKE TO READ (SHOW) YOU A TABLE OF LEVELS OF INCOME AND HAVE YOU TELL ME THE LEVEL THAT COMES CLOSEST TO THE COMBINED TOTAL INCOME FOR ALL THOSE PERSONS WE WERE JUST TALKING ABOUT--THE ONES WHO LIVE WITH YOU AND ARE ALSO RELATED TO YOU. (THESE ARE ONLY BROAD RANGES OF INCOME. WE DON'T NEED THE SPECIFIC AMOUNT OF YOUR INCOME.) PLEASE THINK OF THE TOTAL INCOME FOR THE PAST 12 MONTHS BEFORE ANY TAXES OR OTHER DEDUCTIONS WERE TAKEN OUT. (THINK ABOUT ALL THE POSSIBLE SOURCES OF INCOME I'VE JUST MENTIONED.)

SD/9

Per Year	Per Month	Per Week
1. Less than $3,000	Less than $250	Less than $60
2. $3,000 to $4,999	$250 to $416	$60 to $99
3. $5,000 to $6,999	$417 to $583	$100 to $139
4. $7,000 to $9,999	$584 to $833	$140 to $199
5. $10,000 to $14,999	$834 to $1,249	$200 to $299
6. More than $14,999	More than $1,249	More than $299

Figure B17: Factor F: Financial ability--annual family income component.

Variable Number	Derived Variable Name	Interpretation	Rules of Formation	Raw Variables Used as Data Source
259	IED (Index of Economic Dependence Initial Score)	1 = Employed, owns home and not on agency support (public or private). 2 = Owns home, not employed, not on agency support (public or private). 2 = Employed, does not own home, not on agency support (public or private) 3 = Does not own home, not employed, not on agency support (public or private) 3 = Not employed, owns home, on agency (public or private or both) support. 4 = Not employed, does not own home, on agency (public or private or both) support. 5 = Other combinations (non-scale). -99999 = Insufficient data available to create score 1 = Most Independent 4 = Most Dependent	Recode V#220 into V#220A V#220 = 1 or 3 = V#220A = 1 } Time #1 Use the following code to write the value of V#259	220, 235, 241 239, 241 } Time #1 220, 235, 239, 643 } Time #2

Home Ownership V# 220A

V#241		Not Home Owner (1)						Home Owner (2)					
		Not Employed (2)			Employed (1)			Not Employed (2)			Employed (1)		
V#235 Public Welfare	Private Welfare V#239	No (2)	Yes (1)	Miss. (9)	No (2)	Yes (1)	Miss. (9)	No (2)	Yes (1)	Miss. (9)	No (2)	Yes (1)	Miss. (9)
No (2)		3*	4	Miss.	2	5	Miss.	2	3	Miss.	1	5	Miss.
Yes (1)		4	4	4	5	5	5	3	3	3	5	5	5
Miss. (9)		Miss.	4	Miss.	Miss.	5	Miss.	Miss.	3	Miss.	Miss.	5	Miss.

If V#241 or 220 = 9, Treat V259 as missing.

*Value within cell is the value for V# 259.

Figure B18. Factor F: Financial ability--Index of economic dependence component.
{ Employment at Time #1 measurement = 241)
(Employment at Time #2 measurement = 643)

Variable Number	Variable Name	Interpretation	Data Source

220	Ownership of Residence	No one who lives there = 1
		Self or spouse = 2
		Someone else who lives there = 3
		No codable answer or no data = 9
		
		Since the concern here is with functional residence a patient who lives in a residence which he does not own is classed as "not" the home owner though he may be the legally designated owner of some other dwelling. A patient who is co-owner of his place of residence is classed as a home owner. Trailer ownership is not defined as home ownership unless the patient or his spouse own the land and pay taxes on the land on which the trailer stands.
			Item found on outpatient interview forms
			
			13. WHO OWNS YOUR HOME HERE?
			
			  1. No one who lives here--residence is rented from others by self or spouse or others who live here
			  2. Self or spouse own the home
			  3. Someone else who lives here owns the home
			  9. No codable answer given

235	Source of Income-- Public Assistance	Yes = 1 No = 2 No codable answer = 9	51. LET ME READ YOU A LIST OF SOURCES OF INCOME. FROM WHICH OF THESE DID YOU (OR YOUR SPOUSE) RECEIVE YOUR INCOME IN THE LAST SIX MONTHS? (Circle as many codes as apply.) (09) 3. DURING THE LAST SIX MONTHS DID YOU (OR YOUR SPOUSE) RECEIVE ANY INCOME FROM PUBLIC ASSISTANCE? (Aid to the Aged, Aid for the Blind, Aid for the Disabled, Welfare payments of any kind, including SSI)
239	Source of Income Gifts ($25 or more)	Yes = 1 No = 2 No codable answer = 9	(07) 7. DURING THE LAST SIX MONTHS DID YOU (OR YOUR SPOUSE) RECEIVE ANY INCOME FROM GIFTS FROM CHILDREN, RELATIVES, FRIENDS, OR PRIVATE SOCIAL AGENCIES?

241	Employment	Yes = 1
		No = 2
		Question not asked (1d)
		  or no data = 8
		No codable answer = 9
			59. WERE YOU EMPLOYED FOR MONEY OR PROFIT FROM YOUR WORK JUST BEFORE YOU ENTERED THE HOSPITAL? (even 1 hour/month)
			
			  1. Yes
			  2. no
			  8. Question skipped by RI
			  9. No codable answer

643	Employment	Yes (1) = 1
		No (2,3,4,5) = 2
		No Data or
		No codable answer = 9
			6. ARE YOU EMPLOYED FOR MONEY OR PROFIT FROM YOUR WORK? (even 1 hour/month) (if "no") DID YOU RETIRE FROM YOUR JOB (BECOME UNEMPLOYED) DURING THE LAST SIX MONTHS? (if participant is getting sick leave pay, they are still employed)
			
			  1. Yes--still employed (even 1 hour/month, or on sick leave)
			  2. No--retired more than six months ago
			  3. No--retired or stopped working for pay, but began to work again
			  4. Never held a job for pay
			  5. No--retired or stopped working for pay during the last six months

Figure B18. (Cont'd).

APPENDIX C

DATA RESULTS NOT REPORTED IN THIS STUDY

TABLE C1: Data Results Not Reported for Total Sample--(Ho3C,A,D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score	1	57.437	33.061**			
Covariate=Age	1	20.105	11.573**			
A=Age Environment	1	.154	.089	1	3.033	1.375
B=Residential Location of Primary Care Giver	1	.699	.402	1	1.591	.721
A X B Interaction	1	.002	.001	1	.008	.004
Residual	183	1.737		192	2.205	
Total	188	2.198		195	2.194	

Covariate=Prior Score
Covariate=Age
A=Age Environment
C=Spouse Survival
A X C Interaction
Residual
Total

Covariate=Prior Score
Covariate=Age
A=Age Environment
D=Days of Bed Disability
A X D Interaction
Residual
Total

Covariate=Prior Score
Covariate=Age
A=Age Environment
E=Independence in Activ-
    ities of Daily Living
A X E Interaction
Residual
Total

Covariate=Prior Score
Covariate=Age
A=Age Environment
F=Financial Ability
A X F Interaction
Residual
Total

**p < .01

*p < .05

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TABLE C2: Data Results Not Reported for Older Sample--(HolC,A,D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Age	1	.408	.262			
A=Age Environment	1	5.288	3.399	1	4.789	3.084
B=Residential Location of Primary Care Giver	1	.080	.051	1	.042	.027
A X B Interaction	1	.737	.474	1	.568	.366
Residual	139	1.556		140	1.553	
Total	143	1.559		143	1.559	
Covariate=Age	1	.408	.279			
A=Age Environment	1	.999	.683			
C=Spouse Survival	1	4.558	3.116			
A X C Interaction	1	9.233	6.313*			
Residual	139	1.463				
Total	143	1.559				
Covariate=Age	1	.408	.265			
A=Age Environment	1	5.532	3.600			
D=Days of Bed Disability	1	1.523	.991			
A X D Interaction	1	1.978	1.287			
Residual	139	1.537				
Total	143	1.559				
Covariate=Age	1	.408	.269			
A=Age Environment	1	3.959	2.613			
E=Independence in Activities of Daily Living	1	6.384	4.213*			
A X E Interaction	1	.093	.062			
Residual	139	1.515				
Total	143	1.559				
Covariate=Age	1	.234	.153			
A=Age Environment	1	3.097	2.023			
F=Financial Ability	1	.039	.025			
A X F Interaction	1	2.425	1.584			
Residual	135	1.531				
Total	139	1.531				

**p < .01

*p < .05

TABLE C3: Data Results Not Reported for Older Sample--(Ho2C,A,D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score	1	20.358	14.018**			
Covariate=Age	1	.016	.011			
A=Age Environment	1	.626	.431	1	.000	.000
B=Residential Location of Primary Care Giver	1	.673	.463	1	2.222	1.347
A X B Interaction	1	.762	.525	1	1.438	.872
Residual	99	1.452		104	1.650	
Total	104	1.601		107	1.638	
Covariate=Prior Score	1	20.358	13.984**			
Covariate=Age	1	.016	.011			
A=Age Environment	1	1.267	.870	1	.304	.183
C=Spouse Survival	1	.710	.487	1	1.291	.778
A X C Interaction	1	.369	.253	1	1.318	.794
Residual	99	1.456		104	1.660	
Total	104	1.601		107	1.638	
Covariate=Prior Score	1	20.358	14.604**			
Covariate=Age	1	.016	.011			
A=Age Environment	1	.400	.287	1	.022	.014
D=Days of Bed Disability	1	7.163	5.139*	1	9.545	5.995*
A X D Interaction	1	.038	.028	1	.090	.056
Residual	99	1.394		104	1.592	
Total	104	1.601		107	1.638	

Covariate=Prior Score
Covariage=Age
A=Age Environment
E=Independence in Activ-
    ities of Daily Living
A X E Interaction
Residual
Total

Covariate=Prior Score
Covariate=Age
A=Age Environment
F=Financial Ability
A X F Interaction
Residual
Total

**p < .01

*p < .05

TABLE C4:   Data Results Not Reported for Older Sample--(Ho3C,A,D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score	1	20.358	14.195**			
Covariate=Age	1	.016	.011			
A=Age Environment	1	.684	.477	1	.009	.005
B=Residential Location of Primary Care Giver	1	.178	.124	1	1.086	.659
A X B Interaction	1	3.043	2.122	1	2.860	1.737
Residual	99	1.434		104	1.647	
Total	104	1.601		107	1.638	
Covariate=Prior Score	1	20.358	14.135**			
Covariate=Age	1	.016	.011			
A=Age Environment	1	1.904	1.322	1	1.285	.802
C=Spouse Survival	1	1.758	1.220	1	5.053	3.153
A X C Interaction	1	.861	.598	1	3.502	2.185
Residual	99	1.440		104	1.602	
Total	104	1.601		107	1.638	
Covariate=Prior Score						
Covariate=Age						
A=Age Environment						
D=Days of Bed Disability						
A X D Interaction						
Residual						
Total						
Covariate=Prior Score						
Covariate=Age						
A=Age Environment						
E=Independence in Activities of Daily Living						
A X E Interaction						
Residual						
Total						
Covariate=Prior Score						
Covariate=Age						
A=Age Environment						
F=Financial Ability						
A X F Interaction						
Residual						
Total						

**$p < .01$

*$p < .05$

TABLE C5:   Data Results Not Reported for Older Sample--(Ho4C,A,D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Age	1	1.615	.977			
A-Age Environment	1	3.198	1.936	1	2.561	1.545
B=Residential Location of Primary Care Giver	1	.404	.245	1	.294	.177
A X B Interaction	1	2.976	1.801	1	3.163	1.909
Residual	100	1.652		101	1.657	
Total	104	1.668		104	1.668	
Covariate=Age	1	1.615	1.016			
A=Age Environment	1	.239	.151	1	.074	.047
C=Spouse Survival	1	3.326	2.092	1	4.937	3.131
A X C Interaction	1	6.286	3.953*	1	6.660	4.224*
Residual	100	1.590		101	1.577	
Total	104	1.668		104	1.668	
Covariate=Age	1	1.615	.959			
A=Age Environment	1	3.272	1.942	1	2.615	1.547
D=Days of Bed Disability	1	.168	.100	1	.089	.052
A X D Interaction	1	.016	.009	1	.034	.020
Residual	100	1.684		101	1.690	
Total	104	1.668		104	1.668	

Covariate=Age
A=Age Environment
E=Independence in Activ-
    ities of Daily Living
A X E Interaction
Residual
Total

Covariate=Age
A=Age Environment
F=Financial Ability
A X F Interaction
Residual
Total

**p < .01

*p < .05

TABLE C6: Data Results Not Reported for Younger Sample--(HolC,A,D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Age	1	14.861	7.478**			
A=Age Environment	1	.006	.003	1	1.463	.701
B=Residential Location of Primary Care Giver	1	.367	.185	1	.666	.319
A X B Interaction	1	.027	.014	1	.054	.026
Residual	111	1.987		112	2.087	
Total	115	2.051		115	2.051	
Covariate=Age	1	14.861	7.678**			
A=Age Environment	1	.068	.035	1	.658	.326
C=Spouse Survival	1	2.625	1.356	1	2.889	1.429
A X C Interaction	1	3.502	1.809	1	5.178	2.561
Residual	111	1.935		112	2.022	
Total	115	2.051		115	2.051	
Covariate=Age						
A=Age Environment						
D=Days of Bed Disability						
A X D Interaction						
Residual						
Total						
Covariate=Age						
A=Age Environment						
E=Independence in Activities of Daily Living						
A X E Interaction						
Residual						
Total						
Covariate=Age	1	14.111	7.243**			
A=Age Environment	1	.561	.288	1	.088	.043
F=Financial Ability	1	8.192	4.205*	1	7.982	3.890
A X F Interaction	1	.002	.001	1	.034	.017
Residual	106	1.948		107	2.052	
Total	110	2.080		110	2.080	

**p < .01

*p < .05

TABLE C7: Data Results Not Reported for Younger Sample--(Ho2C,A,D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score	1	37.930	18.098**			
Covariate=Age	1	1.101	.526			
A=Age Environment	1	.311	.148	1	.129	.051
B=Residential Location of Primary Care Giver	1	1.222	.583	1	2.084	.829
A X B Interaction	1	2.490	1.188	1	8.277	3.294
Residual	78	2.096		84	2.513	
Total	83	2.573		87	2.547	
Covariate=Prior Score	1	37.930	18.100**			
Covariate=Age	1	1.101	.526			
A=Age Environment	1	.427	.204	1	.175	.068
C=Spouse Survival	1	.838	.400	1	1.418	.550
A X C Interaction	1	2.888	1.378	1	3.494	1.355
Residual	78	2.096		84	2.578	
Total	83	2.573		87	2.547	
Covariate=Prior Score	1	37.930	19.184**			
Covariate=Age	1	1.101	.557			
A=Age Environment	1	.486	.246	1	.322	.141
D=Days of Bed Disability	1	12.960	6.555*	1	29.792	13.076**
A X D Interaction	1	.000	.000	1	.257	.113
Residual	78	1.977		84	2.278	
Total	83	2.573		87	2.547	
Covariate=Prior Score	1	37.930	18.704**			
Covariate=Age	1	1.101	.543			
A=Age Environment	1	.222	.110	1	.148	.064
E=Independence in Activities of Daily Living	1	8.810	4.344**	1	26.148	11.264**
A X E Interaction	1	.191	.094	1	.297	.128
Residual	78	2.028		84	2.321	
Total	83	2.573		87	2.547	
Covariate=Prior Score	1	37.930	17.709**			
Covariate=Age	1	1.101	.514			
A=Age Environment	1	.304	.142			
F=Financial Ability	1	.000	.000			
A X F Interaction	1	.114	.053			
Residual	78	2.142				
Total	83	2.573				

**$p < .01$

*$p < .05$

TABLE C8: Data Results Not Reported for Younger Sample--(Ho3C,A,D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Prior Score	1	37.930	17.970**			
Covariate=Age	1	1.101	.522			
A=Age Environment	1	.417	.198	1	.168	.064
B=Residential Location of Primary Care Giver	1	.594	.281	1	.724	.277
A X B Interaction	1	1.950	.924	1	.772	.295
Residual	78	2.111		84	2.618	
Total	83	2.573		87	2.547	
Covariate=Prior Score	1	37.930	18.057**			
Covariate=Age	1	1.101	.524			
A=Age Environment	1	.401	.191	1	.174	.067
C=Spouse Survival	1	.671	.319	1	.438	.168
A X C Interaction	1	2.662	1.267	1	2.114	.811
Residual	78	2.101		84	2.606	
Total	83	2.573		87	2.547	
Covariate=Prior Score						
Covariate=Age						
A=Age Environment						
D=Days of Bed Disability						
A X D Interaction						
Residual						
Total						
Covariate=Prior Score	1	37.930	17.999**			
Covariate=Age	1	1.101	.523			
A=Age Environment	1	.697	.331			
E=Independence in Activities of Daily Living	1	1.644	.780			
A X E Interaction	1	1.167	.554			
Residual	78	2.107				
Total	83	2.573				
Covariate=Prior Score	1	38.168	17.745**			
Covariate=Age	1	1.267	.589			
A=Age Environment	1	.344	.160	1	.458	.173
F=Financial Ability	1	.017	.008	1	1.912	.724
A X F Interaction	1	1.067	.496	1	.181	.068
Residual	77	2.151		83	2.643	
Total	82	2.604		86	2.577	

**p < .01

*p < .05

TABLE C9:   Data Results Not Reported for Younger Sample--(Ho4C,A,D).

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
Covariate=Age	1	13.603	6.940**			
A=Age Environment	1	.055	.028	1	.926	.441
B=Residential Location of Primary Care Giver	1	1.682	.858	1	1.216	.579
A X B Interaction	1	4.684	2.390	1	4.416	2.103
Residual	82	1.960		83	2.100	
Total	86	2.101		86	2.101	
Covariate=Age	1	13.603	6.762*			
A=Age Environment	1	.009	.005	1	.780	.364
C=Spouse Survival	1	.165	.082	1	.011	.005
A X C Interaction	1	1.954	.971	1	1.928	.899
Residual	82	2.012		83	2.145	
Total	86	2.101		86	2.101	
Covariate=Age	1	13.603	7.060**			
A-Age Environment	1	.008	.004	1	.475	.234
D=Days of Bed Disability	1	4.522	2.347	1	7.767	3.823
A X D Interaction	1	4.569	2.371	1	3.565	1.755
Residual	82	1.927		83	2.031	
Total	86	2.101		86	2.101	

Covariate=Age
A=Age Environment
E=Independence in Activ-
  ities of Daily Living
A X E Interaction
Residual
Total

Covariate=Age
A=Age Environment
F=Financial Ability
A X F Interaction
Residual
Total

**$p < .01$

*$p < .05$

Table C10: Data Results Not Reported--One-Way Analyses--Older Sample.

Source of Variation	Analysis of Covariance			Analysis of Variance		
	Degrees of Freedom	Mean Square	F Value	Degrees of Freedom	Mean Square	F Value
(Ho1D)						
Covariate = Age	1	.408	.265			
Factor A = Age Environment	1	5.501	3.573			
Residual	141	1.540				
Total	143	1.559				
(Ho2D and Ho3D)						
Covariate = Prior Score						
Covariate = Age						
Factor A = Age Environment						
Residual						
Total						
(Ho4D)						
Covariate = Age						
Factor A = Age Environment						
Residual						
Total						

**p < .01
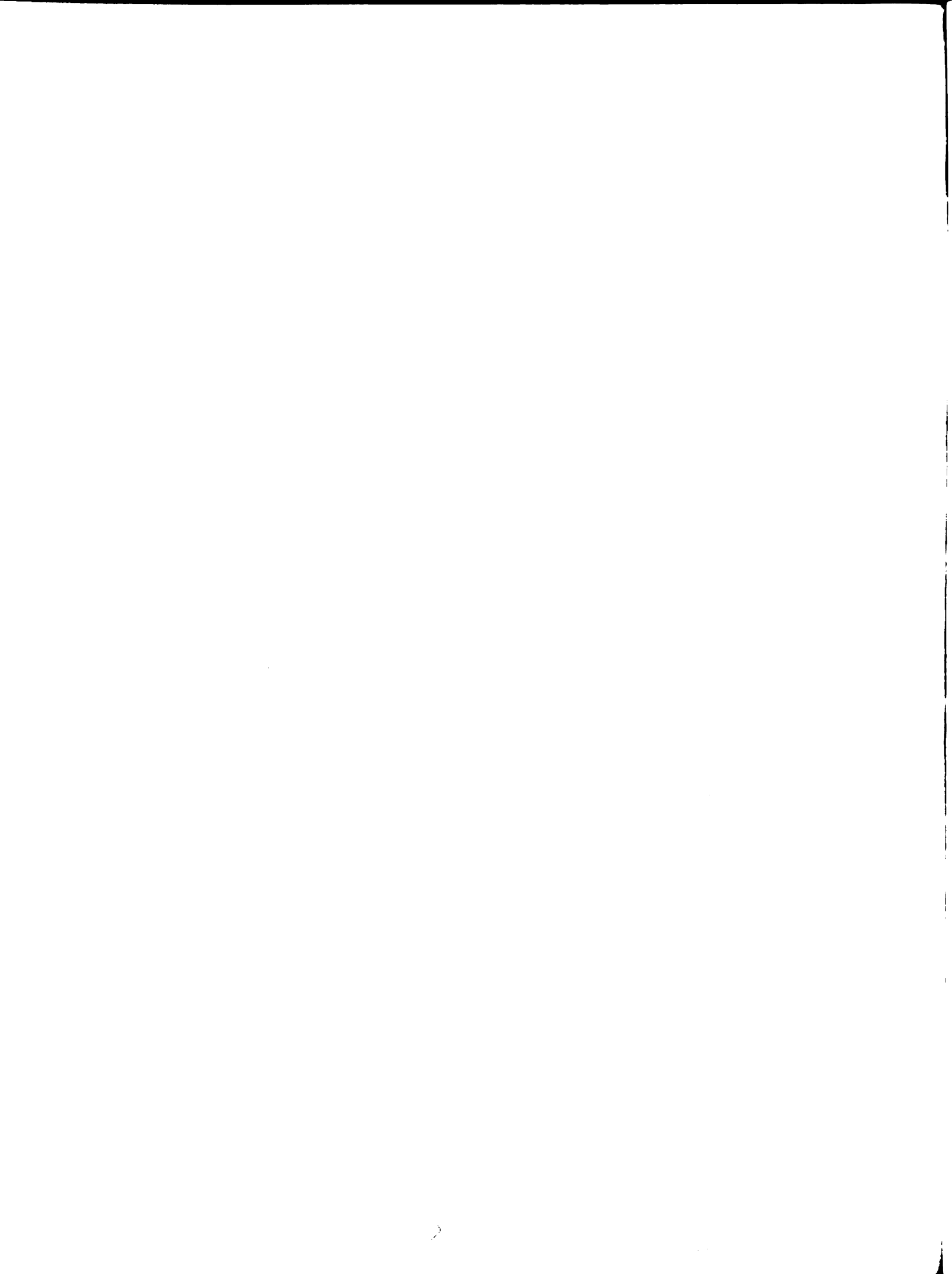*p < .05

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