MUSSMAN, Milton Courtland, 1926-
MIDDLESCENCE: CRITICAL PERIOD OR
PERIODS IN ADULTHOOD?
The Ohio State University, Ph.D., 1968
Psychology, clinical

University Microfilms, Inc., Ann Arbor, Michigan
MIDDLESCENCE: CRITICAL PERIOD OR PERIODS IN ADULTHOOD?

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

BY

Milton Courtland Mussman, B.S., M.A.

* * * * * *

The Ohio State University
1968

Approved by

John E. Henricks,
Adviser
Department of Psychology
ACKNOWLEDGMENTS

The author is indebted to his adviser Dr. John E. Horrocks for his kind support and guidance, not only during the present study, but also throughout the graduate training period. Dr. Horrocks' judgements in the elusive enterprise of integrating the theoretical with empirical and experimental observation have been highly prized. Greatly valued encouragement and suggestions were offered during the study by the members of the reading committee, Dr. George G. Thompson and Dr. Philip M. Clark.

Appreciation is expressed to friends whose criticisms of early forms of the questionnaire were most helpful. Mr. Boltz and the staff at the Data Processing Center in Haggarty Hall at The Ohio State University made the statistical breakdown and analysis of the data of the study an exciting experience rather than a laborious task.

Important clerical help was given by members of the author's family and by the typist of this manuscript, Mrs. Helen Eubanks. The clerical staff in the main office of the Psychology Department contributed to this survey by their orderly and patient handling of the many questionnaire returns over a period of weeks. Gratitude is expressed to Mrs. Irma Taylor for her friendly help and counsel over the years in her capacity as secretary in the developmental psychology office.

The deepest debt of all is owed the author's wife Camilla and daughters Leslie and Cindy who sacrificed many of the pleasures of a normal family life during the graduate years culminating in this study.
VITA

August 25, 1926 ...................... Born—Chicago Illinois

1944-1946 ......................... Soldier, Army of the United States

1951 ......................... B.S., The Ohio State University
Columbus, Ohio

1951-1952 ....................... Teacher, Leetonia Exempted Village Schools
Leetonia, Ohio

1952-1957 ....................... Teacher, Columbus Board of Education
Columbus, Ohio

1957 ......................... M.A., The Ohio State University
Columbus, Ohio

1957-1961 ................ Visiting Teacher, Columbus Board of Education
Columbus, Ohio

1961-1962 ................ Itinerant Counselor, Columbus Board of Education
Columbus, Ohio

1962-1963 ................ Psychology Intern, Columbus Board of Education
Columbus, Ohio

1963-1966 ................ School Psychologist, Columbus Board of Education
Columbus, Ohio

1966-1968 ................ Consultant, Department of Special Education
Columbus Board of Education
Columbus, Ohio

PUBLICATIONS

Teachers' evaluations of psychological reports. Journal of School
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ACKNOWLEDGMENTS</th>
<th>ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>VITA</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF ILLUSTRATIONS</td>
<td>vii</td>
</tr>
<tr>
<td>CHAPTER</td>
<td>1</td>
</tr>
<tr>
<td>I. INTRODUCTION AND REVIEW OF THE LITERATURE</td>
<td>25</td>
</tr>
<tr>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>Developmental Stress Theories</td>
<td></td>
</tr>
<tr>
<td>Attitude Intensity as a Measure of Adjustment</td>
<td></td>
</tr>
<tr>
<td>Hypothesis</td>
<td></td>
</tr>
<tr>
<td>Importance of Present Study</td>
<td></td>
</tr>
<tr>
<td>Review of the Literature</td>
<td></td>
</tr>
<tr>
<td>Background</td>
<td></td>
</tr>
<tr>
<td>Inner Indices of Adjustment</td>
<td></td>
</tr>
<tr>
<td>Outer Indices of Adjustment</td>
<td></td>
</tr>
<tr>
<td>Summary</td>
<td></td>
</tr>
<tr>
<td>II. PROCEDURES</td>
<td>35</td>
</tr>
<tr>
<td>Design</td>
<td></td>
</tr>
<tr>
<td>Description of the Questionnaire</td>
<td></td>
</tr>
<tr>
<td>Development of the Questionnaire</td>
<td></td>
</tr>
<tr>
<td>The Semantic Differential as a Measuring Instrument</td>
<td></td>
</tr>
<tr>
<td>Treatment of the Data</td>
<td></td>
</tr>
<tr>
<td>III. FINDINGS AND DISCUSSION</td>
<td></td>
</tr>
<tr>
<td>Questionnaire Return</td>
<td></td>
</tr>
<tr>
<td>Hypothesis</td>
<td></td>
</tr>
<tr>
<td>Technical Considerations</td>
<td></td>
</tr>
<tr>
<td>Discussion</td>
<td></td>
</tr>
<tr>
<td>Generalized Variations</td>
<td></td>
</tr>
<tr>
<td>Specific Concept Variations</td>
<td></td>
</tr>
<tr>
<td>General Observations</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER

IV. SUMMARY AND IMPLICATIONS FOR RESEARCH ................. 62

Summary
Comparison with Research
Comparison with Theory
Implications for Future Research

APPENDIXES .............................................................. 71

BIBLIOGRAPHY ............................................................. 75
LIST OF TABLES

Table ........................... Page

1. Questionnaire Return by Population Groups .......................... 35
2. Mean Attitude Intensity Scores by Age for Questionnaire
   Respondents ......................................................... 37
LIST OF ILLUSTRATIONS

Figure .................................................. Page

1. Mean Attitude Intensity Scores by Age for All Items by Major Groups of Questionnaire Respondents ............. 44

2. Mean Attitude Intensity Scores by Age for All Items by Minor Groups of Questionnaire Respondents ............. 46

3. Mean Attitude Intensity Scores by Age for the Concept Children by Minor Groups of Questionnaire Respondents ..... 48

4. Mean Attitude Intensity Scores by Age for the Concept Marriage by Minor Groups of Questionnaire Respondents ..... 50

5. Mean Attitude Intensity Scores by Age for the Concept My Future by Minor Groups of Questionnaire Respondents ... 52

6. Mean Attitude Intensity Scores by Age for the Concept My Friends by Minor Groups of Questionnaire Respondents ... 53

7. Mean Attitude Intensity Scores by Age for the Concept My Parents by Minor Groups of Questionnaire Respondents ... 55

8. Mean Attitude Intensity Scores by Age for the Concept My Daily Tasks by Minor Groups of Questionnaire Respondents 57

9. Mean Attitude Intensity Scores by Age for the Concept Myself by Minor Groups of Questionnaire Respondents .... 58
CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

Introduction

Many references may be found in recent popular literature that discuss a supposedly universal stress period within the middle-age stage of human development. Russell Baker (1965), in a New York Times column facetiously discussed the adolescent's difficulty in dealing with parents in the throes of "middlescence." Other writers have also likened a phase of middle-age to a second adolescence (Beauvoir, 1953; Bergler, 1957; Ellis, 1962; Hornick, 1967; Lindbergh, 1955; Time, 1966). An article in Business Week (1965) discussed a supposed lowering of efficiency in business executives in their early 50's. Barbara Fried (1967) has attempted a survey of the topic in a recent book.

There is very little objective evidence that supports such discussions. Most of the available data is based on clinical and anecdotal material and is not directly relevant to the general population. The research documented in this paper derives data from groups in the normal population, thus making a contribution to our knowledge of the timing of developmental stresses in adulthood.

Developmental Stress Theories

It would be easy to dismiss the topic as unworthy of scientific interest if it were not for the theoretical propositions of many
important psychologists. These psychologists seem to lean toward either a stage-crisis line of reasoning or cast their thinking into a growth- decline frame of reference.

Stage-crisis theories. Erikson (1959, 1963) has expanded the Freudian psycho-sexual theory into a psycho-sexual-social framework which enables him to relate the traditional psychoanalytic views of development to the entire life cycle. He postulates three stages in normal adulthood, each containing a nuclear conflict which comes toward the end of each stage. In young adulthood the elements of the conflict revolve about intimacy or isolation, while in maturity the choices are focused on being able to be a generative individual or stagnating in self-concerns. The final conflict is felt to come in maturity where degrees of personal integrity are achieved or disgust and despair become prevalent. The critical conflicts are viewed as having psycho-sexual and psycho-social components. Erikson speaks of the outcomes of the periods in terms of favorable or unfavorable ratios; a favorable ratio describes a resolution that contains more positive than negative solutions to the conflicts of a life stage. Erikson writes (1959):

I shall present human growth from the point of view of the conflicts, inner and outer, which the healthy personality weathers, emerging and re-emerging with an increased sense of inner unity, with an increase of good judgement, and an increase in the capacity to do well, according to the standards of those who are significant to him [p. 51].

Peck (1956), believing that Erikson's last stage is the crisis of the years past 30, has divided that stage into a middle-age period and an old-age period, listing tasks for each period. He feels that the conflict between valuing wisdom and valuing physical powers is especially important and obvious somewhere between the late 30's and
the late 40's and is the major etiological element in what is commonly known as middle-age depression.

Havighurst (1952, 1953, 1956) also views human development as a series of stages, but focuses mainly on social role change. Early maturity is described as containing many new roles to learn such as becoming accustomed to the first job, the first pregnancy, the role of marital partner, etc. Middle-age requires the individual to learn to set adolescent children free, to reach the peak in one's work career, and to adjust to physiological changes. Retirement marks the tasks of later maturity and involves more learning. Havighurst (1953) also ascribes to the thinking of other crisis theorists:

The path of learning is not one long slow uphill climb with something to learn every new day, but consists of steep places, where the learning effort is severe, interspersed with plateaus where one can speed along almost without effort [p. 1].

Birren, a highly respected student of the aging process, writes of developmental tasks at each age (1964): "Throughout the life span, the capacity of the individual to adapt will be challenged by situations that may be novel to him but that are characteristic of an age level [p. 4]." Successful resolution of the situations are seen by Birren as leading to personality strength.

**Growth-decline theories.** Another group of theorists view human development over the life span as a curvilinear function of age. The curve of expansion, engagement, etc. is seen as rising up to a point in maturity, then falling after a period of stability and subsequent readjustment.

A group of scientists, working initially under Havighurst's leadership at the University of Chicago, have studied a sample of adults from 40 to 90 years in Kansas City. They have emerged from
the study with the theory that people both voluntarily and involuntarily invest themselves meaningfully in life activities up to a point, then just as voluntarily and with an assist from social pressures disengage from significant interactions (Cumming & Henry, 1961; Cumming, 1964). Cumming (1964) writes:

There may be a critical point beyond which further involvement with others automatically brings a sense of "there is not time for all that I must do" which, in turn, leads to evaluations of what has been done compared to what was hoped for, and then to allocations and priorities for the future [p. 7].

Other adjustments are seen to follow, such as the need to shift away from achievement in general to the selection of the most meaningful achievement.

We would, therefore, expect the relinquishing of achievement to be a crisis, and, indeed, general knowledge and some research tell us that in middle life competent men with a record of achievement may feel sudden painful doubts about the value of what they have done [p. 7].

The process of disengagement is seen to vary in timing over the age span according to variables such as sex, marital status, socio-economic status, etc., but still is felt to be a general trend.

Buhler (1935) and her associate Frenkel-Brunswik (1936) have used biographical material in their study of the life span. While noting that the lives of the German people they studied seemed to follow a pattern of expansion and subsequent constriction, they observed a transition period which seemed to contain much adjustive learning. A time of unrest, discontent, and negation occurred in their subjects at an average age of about 48 years (Frenkel-Brunswik, 1936).

Kuhlen (Pressey & Kuhlen, 1957; Kuhlen, 1959) has combined the expansion-constriction formulation and the stage theories while adding
a dynamic note by citing evidence to show that increasing anxiety may be the basis of the constriction often noted in group trends over the later years. In writing about the crisis hypothesis directly, he states: "The basic consideration in such hypothesis is the degree to which the total circumstances surrounding a particular phase of life offer opportunities for gratification of needs or pose threats, conflicts and frustrations 1959, [p. 867]." Later, in a summary paragraph, Kuhlen states:

In general then, it would be expected that there will be, for certain groups, not an over-all curvilinear relation of adjustment to age, but rather a cyclic sort of relationship, with various factors having the effect of making certain periods of life especially satisfying, concentrating symptoms of maladjustment at certain ages, heightening motivation in an already existing direction, or producing a reorientation of motives [p. 868].

Kutner (1962), discussing the one-variable approach of the disengagement theory, points out that such theories attempt to follow the biological curves of growth and decline; research is cited to show that social and psychological aging may be best represented by viewing such development in terms of a reintegration or redifferentiation framework. Thus the aging individual learns new roles, new self-perceptions, new attitudes as he ages. He specifically refers to Havighurst and others who have not found changes in social competence with age but have only found changes in the nature of roles. Kutner defines social aging as:

...a process of re-differentiation and re-integration of social roles and functions, occurring as the individual ages chronologically, and is brought about by role and status changes imposed upon him either by society, or by misfortune, or deliberately self accepted [p. 8].

Dynamics. According to Kuhlen (1959), changes in motivational patterns over the age span is best understood by thinking of human
needs in heirarchial terms. Maslow's (1943) listing of human needs postulates that certain motives are prepotent over others. When the motive for safety is satisfied, for example, motives involving social belonging become strong. An individual who feels safe and who is a member of a group next feels a need to gain esteem. When all the more prepotent needs are met, goals relative to self-expression or self-actualization become desirable. In a recent seminar, Horrocks (1967) suggested that a tri-level theory of motivational change with age is useful; the individual moves through the life span becoming first concerned with physical hungers, then is driven by hedonistic social needs, and later grows into more concern with altruistic social motives. Applying the heirarchial concept to development during adulthood, we see that a young adult may be concerned with safety and belonging needs; his motives tend to be hedonistically oriented. As he matures, his goals trend toward self-actualization and altruistic concern for others.

Whatever the direction and nature of motives at an age, lack of satisfaction produces frustration, a construct useful in comparing personality dynamics across ages. Lawson (1965) has discussed the evolution of the construct from a quasi-scientific postulation to the relatively sophisticated position given it in modern learning theory. Thus frustration is seen as resulting in aggression, regression, fixation, readaptation, heightened emotional arousal, and as productive of conflict. It is clear that lack of motive satisfaction brings about adjusitive behavior of various sorts designed to relieve the state of frustration-produced discomfort (Horrocks, 1962). If physical, social, or economic conditions of an age reduce satisfactions
for an individual, heightened frustration states may exist that lead
to adaptive behavior designed to discover alternate means of motive
satisfaction.

Conflict as a psychological construct underlying adjustment also
has a long philosophical and experimental history. Freudian views on
psychic conflict between the impulse life (id), social values (super-
ego), and adaptive apparatuses (ego) are well known. Lewin (1948)
has categorized conflict in terms of pleasant or unpleasant stimuli,
suggesting that an individual may experience approach-approach,
approach-avoidance, or avoidance-avoidance goal-conflict.

The effect of conflict in animals has been studied experiment-
ally by comparative psychologists. Masserman (1950), for example,
arranged a situation so that cats were exposed to an approach-
avoidance situation with food; whenever the cats ate their accustomed
meal of breaded salmon, a shock or air blast was administered. After
from two to seven repetitions of the experimental conditions, the
animals reacted with the same neurotic type of behavior observed in
humans presumed to be in conflict. "In short, the animals displayed
the same stereotypes of anxiety, phobias, hypersensitivity, regression
and psychosomatic dysfunctions observed in human patients [p. 4d]."

Conflict, then, like frustration, taxes the adaptive capacity
of the individual. Although the nature of the choices will differ
with age, conflict is useful in conceptualizing adjustment across the
ages of human development. For example, Pearson (1958) suggests that
oedipal conflicts are reactivated in parents of adolescents. Zinberg
(1963) predicts that conflicts will be generated by a change in any of
the Freudian personality elements (ego-id-superego) and notes that a
change in impulse life, values, and adaptive capacity does indeed occur in aging. Havighurst's developmental task theory quite explicitly predicts role conflict at certain periods of life.

Threat and loss leading to heightened anxiety are also frequently mentioned as factors contributing to age-related stress. It is of interest to note that threat has been clearly demonstrated to be a major factor in crisis events such as bereavement, illness, and disaster (Caplan, 1964; Lazarus, 1964). Kutner (1962) discusses the effects of enforced role shifts during aging and attempts to bring together crisis and life-stage-crisis theories:

Of pertinence to us is the fact that these shifts reflect a variety of possible readjustments to life through seeking out of new mechanisms of functioning during the later years. There is likewise considerable evidence that life crisis such as retirement and widowhood precipitate the individual into a period of role definition which is probably anxiety-producing and stressful [p. 8].

Threats that arise from aging per se are seen as the first wrinkle, graying hair, the 40th birthday, and the suddenly grown child. In the American culture, a high value is placed on youth; loss of youth or the threat of loss of youth is often viewed as loss of status. Birren (1964), writes:

A woman who has always taken great satisfaction in her physical attractiveness to men may be disconcerted at the sight of middle-age wrinkles and require readjustment of her attitudes .... Men have analogous problems of physique and physical prowess [p. 240].

Frustration, conflict, and threat are seen by many psychologists as stressful, leading to personality disequilibrium. Theoretically it may be predicted that stress periods in human development result in a measurable increase in a wide range of negative personality indicators. Consider, however, the operation of automatic defense mechanisms that function to reduce frustration, conflict, and threat. Hall & Lindsey
Under the pressure of excessive anxiety, the ego is sometimes forced to take extreme measures to relieve the pressure. These measures are called defense mechanisms. The principal defenses are repression, projection, reaction formation, fixation, and regression. All defense mechanisms have two characteristics in common: 1) they deny, falsify, or distort reality, and 2) they operate unconsciously so that the person is not aware of what is taking place [p. 42].

It is probable that individuals in the midst of a life crisis period do not experience the heightened stresses of the age in a straightforward manner as predicted by theories of frustration, conflict and threat. Sources of anger, anxiety, and confusion may be successfully denied or distorted to the degree that only vague unrest or a feeling of general dissatisfaction remains. Euhlen (1959) feels that such may be the case. In discussing the hypothesis that maladjustments increase during the constriction phase in aging, he states:

The foregoing hypothesized trend may not be evident in all types of symptoms of adjustment. During the course of life people tend to seek out a niche that "fits" their abilities, interests, and personalities (thus is non-threatening) and tend also to erect defenses against anxiety, with the result that, although general happiness may be rated lower, manifest symptoms of anxiety may total about the same, age for age, over a long period of adult years, but with different types of problems generating the anxiety at different years [p. 866-867].

As will be shown later, investigators have had more success in demonstrating adjustment/age relationships using general, rather than specific, measures of adjustment as dependent variables.

**Attitude Intensity as a Measure of Adjustment**

It is generally accepted that an attitude is an evaluative, feeling-type reaction directed towards social objects (Newcomb, Turner, & Converse, 1965; Osgood, Suci, & Tannenbaum, 1957; Shaw & Wright, 1967). Attitudes are seen as acting in the service of mo-
atives, as "generalized states of readiness for motivated behavior [Newcomb et al., 1965, p. 43]." Katz (1960) lists four functions attitudes perform in the service of motives: a) adjustment, b) ego-defense, c) value-expression, and d) knowledge accrual.

Newcomb et al. discuss attitudes in terms of their positive or negative direction and in terms of the intensity of feeling involved. A score on an attitude continuum scale that deviates from the middle point indicates the direction of the attitude; the distance from the middle is a fair representation of the intensity of the attitude. Two dimensions of the object of an attitude are discussed as being important in determining the organization and stability of the attitude. Objects may vary in inclusiveness, subsuming less general objects; they will also vary in degree of centrality or frequency of occurrence to individual consciousness. Newcomb et al. write: "It is true almost by definition, that the attitudes important in understanding the psychological organization of any given individual over long periods of time are those whose objects are, for him, relatively inclusive and relatively central [p. 66]."

Since attitudes act in the service of motives, it would be expected that a motivational disequilibrium involving central social objects would lead to an attitudinal disequilibrium involving those objects. Such was found to be the case by Osgood et al. (1957) in their review of studies exploring the usefulness of the semantic differential which measures the positive or negative direction of an attitude from the neutral, middle position to highly intense, extreme positions. In summary they write: "Psychologically, far judgements mean lack of conflict, judgements nearer the center position mean in-
creasing response conflict, and judgements on the center position mean maximum conflict ... [p. 229]."

If age groups can be shown to differ in attitude intensity on a semantic differential scale, we may thus infer that the groups differed in the amount of motivational disequilibrium present.

It is already known that attitudes become more intense with age. While one theory states that this increase is a result of increased anxiety (Kuhlen, 1959), another theory (Newcomb et al., 1965) explains the increase by reasoning that time alone, providing opportunity for integration and repeated reinforcement, is the cause.

Using the information that variation in attitude intensity has motivational implications and that attitude intensity normally increases with age, we may make predictions on the outcomes of administering a semantic differential scale to different age groups over the adult life span.

Hypothesis

It is proposed that there are one or more critical periods in human adulthood where the adjutivse effort is stressful due to an increase in frustration, conflict, and/or threat, and that such periods are marked by a relative decrease in attitude intensity. Group variations should exist. Unmarried women will feel stresses unique in nature and timing; married men will feel conflicts and frustrations that are different and may reach a crescendo more tied to career than to family. Level of education, with implied differences in intelligence, habit, and values, should produce differences in the perception and experience of stress.
It is specifically hypothesized that the results of an attitude questionnaire administered to a large group of adults ranging in age from 20 to 65 years will show age-related periods of lessened intensity indicative of motivational disequilibrium and that the timing of such periods will vary when groupings are made according to level of education, sex, and marital status.

**Importance of Present Study**

The importance of locating developmental periods of stress in human maturity cannot be overemphasized. At the theoretical level, evidence for or against stage-crisis theories is sorely needed (Thompson, 1962). While the evidence is rapidly accumulating at earlier age levels, little effort is being expended in the field of adult development. The reason for this lag may be simply that it is easier to study children grouped capitably in school or oldsters conveniently located in a retirement center. A major factor may also be that middle-maturity is a relatively recent phenomenon. Pressey (Pressey & Euhlen, 1957) points out that the increase of 20 years in the life expectancy during the last half century has created in the United States a middle-aged population of significant proportion that has been unknown in history until now.

At the applied level, the accumulation of definitive evidence supporting the universality of one or more critical phases in adult development would be of great help in guiding society's therapeutic forces to focus more accurately on relieving human distress and in preparing populations to cope positively with the crisis so as to emerge with a strengthened citizenry.

Definitive evidence against stress periods would render valuable
service in dispelling misconceptions. Since a "middle-aged" period is already being promulgated in the popular literature, wide acceptance of this proposition, even though untrue, could create expectation of a crisis and hence the very crisis itself! As Kuhlen states (Pressey & Kuhlen, 1957):

"Often-times, too, examination of developmental trends in anxieties and fears and overall tensions may yield negative findings, an important first step in dispelling popular misconceptions of "ages of crisis." It is commonplace that people are more likely to experience problems if they expect them to occur." [p. 364]

Review of the Literature

Background

This review will be somewhat broad because of the lack of information bearing directly upon the hypothesis. What follows will be an attempt to report those studies dealing with change in the two main dimensions of adjustment, i.e., inner or psychic factors and outer or social factors (Birren, 1964; Henry, 1956; Havighurst, 1956). These divisions may of course be artificial as implied by Birren (1964): "the nervous system is organized to a significant extent as a result of interactions with the environment." [p. 2] However Phillips (1961) points out that habit systems could keep roles intact while the individual is experiencing inner changes.

Cautions in interpretation of the studies are provided from several sources. Clinical studies of inner changes with age are based on a highly select population of individuals in trouble and may or may not represent the inner states of their counterparts in the general population (Birren, 1964). Industrial studies of the competence of older workers may be quite unreliable indicators of occupational com-
petence due to selectivity factors in employment, the over-learning of a job thereby masking adaptive decrements, and the sensitivity of employers in making job assignments for older workers (Chown & Alastair, 1965). A current controversy exists over the validity of studies that use younger interviewers to gather data on older subjects. Neugarten (1964), in commenting on the lack of age change found in studies using the interview method, attributes the failure to the age bias of younger interviewers. Donahue (1965) feels that since youth has such a pervasively negative attitude towards aging, such bias must influence the younger interviewer who codes information gained from older people.

The crosssectional approach in studying age related changes is subject to many criticisms. Most of the recent studies reporting change carefully point out the possibility that an age change may reflect cultural conditions during that age group's formative years as well as being influenced by current situations. Critics of the masking effect of crosssectional methods are answered somewhat in a study by Schaie (1959) who showed that grouping by population variables and use of various statistical techniques eliminated the masking effect to a degree.

It is not the intention of this review to demonstrate the personality trends of aging. The tendency of some older people to be more rigid, to lack self confidence, and to have less ego energy available to adapt to change is shown in the literature; however such evidence does not have a direct bearing on the critical periods hypothesis. The recurrent finding that the quality of social competence is unrelated to age in the middle years is also of interest but not of pertinence.
It will be informative to note those studies that show variation in personality qualities over a limited age range. Unless the ages studied provide a wide enough range for a baseline to be established however, the research is of limited value in determining the significant increments or decrements that could demonstrate the presence or absence of a period of adaptive disequilibrium.

Of interest to this last point, Neugarten (1964) summarizes a group of studies based on a Kansas City sample of adults aged 40 to 90. She characterizes adults in the 40's as bold and risk-taking, possessing energy congruent with opportunity. Sixty year olds are seen in less positive terms. What would be the characterization if 20 and 30 year olds were part of the sample studied? It is quite possible that such a dichotomous description of the ages would not be appropriate!

Tuckerman and Lorge (1953) set the stage for this review by establishing that children of 10 years, adolescents, young adults, middle-aged adults, and even mature adults view old age negatively. After a course in the problems of aging, students not only did not decrease, but increased their negative attitudes!

Another study (Lehner & Silver, 1948) suggested that the age of 25 years is the idealized age in the American culture. Subjects were asked to draw a person and label the age of the person drawn. Subjects under 25 tended to record ages older while subjects over 25 labeled their drawings with younger ages.

These two studies demonstrate that aging itself is evaluated negatively in the American culture.
Inner Indices of Adjustment

Variation using miscellaneous populations. Of intriguing interest is a graph presented by Pressey & Kuhlen (1957, p. 149) derived from government statistics which shows the first admission rates to State Mental Hospitals in the United States during 1950. A variation is shown during the years from 37 to 52 in both the rates of admission and in the category of personality breakdown. Thus at age 37 (the median age for the 35-39 age group reported) a peak rate of 90 admissions per 100,000 in the population was reached; the rate drops to about 85 at age 42, rises back to 90 at age 47, drops to 80 at age 52, then begins a positively accelerating rise into old age. This change period is the only directional variation in rate shown and could be the result of motivational disequilibrium at one or more ages within the 37 to 52 age range. Age 37 is also the median age on the graph where schizophrenia stops its growth as a significant portion of the total admission category breakdown, giving way to the rise of involutional psychosis which in turn wanes at age 57. The term involutional psychosis is the clinical designation for the depression characteristic of breakdowns in middle age. While it is impossible to draw firm conclusions from this data, the graph is certainly suggestive of an age-related variation in inner adjustment by at least a clinical population.

Retrospective evaluations have, of course, tenuous claim to validity. In spite of this, three independent studies measuring oldster's impressions as to the happiest periods in their lives have been performed with concurring results. Oldsters are reported to feel that the thirties are the most happy periods of their lives and that the early 50's the least happy until old age is reached (Cavan, Burgess, Havighurst, & Goldhamer, 1949; Morgan, 1937; Landis, 1942). Meltzer
(1965) makes a distinction between perceptions of past happiness for self and perceptions of most happy periods for others, feeling that the latter are the most reliable. The years under 20 were judged to be the most happy periods for others by a large group of questionnaire respondents from an industrial population.

A "V" shaped curve is found in the results of a comprehensive study of mixed-population age trends in several measures of rigidity (Schaie, 1958). The significant dip in an otherwise smoothly increasing score occurred at the median age of 43 for the measure of perceptual rigidity. When it is remembered that personality rigidity has been shown to be a correlate of neurotic functioning (Pervin, 1960) it is not difficult to see the implication for the crisis hypothesis.

A feeling of responsibility for the welfare and guidance of others is an index of adjustment. Schaie (1959) found that social responsibility as a test variable rose in his 20 to 70 year sample until the mid fifties and then began to decline.

The high point in "annoyability" scores for a sample of individuals from 10 to 90 years was found to be at age 50 in a study by Cason (1930). The measure used attempted to get at the subjective feelings of individuals rather than overt behavior.

The ego in personality theory is roughly equated with cognitive ability according to modern ego-psychology theory. One study (Bilash & Zubek, 1960) factored measures of cognitive ability and analyzed their variation in over 600 subjects from 16 to 89 years. They found that, while some ego-abilities declined gradually, others
(comprehension, verbal fluency, numerical and spatial relations) held up well until the mid forties when a decline began.

Of interest in the light of the foregoing decrease in cognitive abilities is Meltzer's finding (1965) that, while his group of industrial subjects showed more favorable attitudes and increased satisfaction with age, the mid-forties seemed to be a point where attitudes toward working conditions became markedly more positive.

Peck (1964) used a number of measures of personality functioning in his study of subjects from 40 through the 60's. He found that only his measure of adjustment correlated with age, indicating a period of low adjustment in the early 50's compared with the rating of these subjects in their 40's and 60's. Peck writes: "The trend in these data looks like the somewhat vaguely identified syndrome known to some psychologists and psychiatrists as 'middle-age depression' (p. 26)." It should be noted that these data reported by Peck were derived from the general, not a clinical population thus supporting inferences made by many writers using only clinical data to base their conclusions on.

Variation by sex. One study has reported sex differences in inner characteristics of adjustment. Lehner & Gunderson (1953) asked a group covering a wide age range to draw a person. The finding that males tended to draw smaller figures after age 30, while females began a reduction in size after 40 led the investigators to suggest that these ages represent a peak in projected self-evaluations.

Two studies of interest used only male subjects. Bendig (1960) used the Guilford-Zimmerman Temperament Survey, finding that General Activity scores showed a sharp drop at age 55 (median of group), while
Personal Relations scores dipped at 45 years, rising again slightly at age 55. Bortner (1963) found that his male subjects showed an age variation in a measure of inner impulsivity, leading him to comment that these results suggest less expression of impulses for the 45 year old grouping.

**Variation by marital status.** Evidence that marital status is a significant independent variable comes from an empirical study by Lansing & Kish (1957) which noted that the family life cycle contains various changes in learning tasks presented to the married couple as a function of the age of the marriage. Having an employed wife, buying a new car, owning a home, owing money, etc., were all related to the age of the marriage. The implication was made that the marriage age may well be an important independent variable in the study of aging.

A study by Willoughby (1938) is intriguing when viewed within the context of the previously reported finding that males in their mid-forties tend to have lower impulsivity and Personal Relations scores. Using an inventory of neuroticism administered by interview to 1400 subjects of average to high socio-economic status, he found that the age of 45 years seemed to be the best adjusted years of life regardless of sex. The age of 55 was, by contrast, the most maladjusted. For spinsters and bachelors the best and worst years of adjustment seemed to come a few years later than for married men and women. Both Willoughby's study and the results of a study by Phillips & Greene (1939) using the Bernreuter Personality Inventory demonstrate that spinsters have increasing feelings of maladjustment until about age 30, followed by a decrease in maladjustment; married women show no such change in adjustment indicators at that age.
Kuhlen (1959, p. 870) refers to an earlier unpublished study by him done in 1948 where older subjects were interviewed and asked to chart their life-happiness periods in retrospect much in the same manner as the three studies reviewed herein. Married men and women gave the median age of 27 as the happiest periods in their lives, while spinsters reported that the median age of 42 was remembered as happiest. This fourth report of retrospective evaluations contains results within the age ranges reported by the previous three studies.

Support for the proposition that husbands and wives may be differentially affected in both the timing and the nature of periods of heightened stress is given in a study by Tharp (1963) who found that the male role in marriage tended to become more restricted with advancing age.

Kuhlen (1951) studied the susceptibility to stress in various age and marital groups among service personnel embarking for combat areas during WW II. He found that, while symptoms of "nervousness" increased linearly with age, married men demonstrated higher degrees of nervousness, and that married men with children showed the most marked reaction to the stress of all.

Variation by level of education. Indik, Seashore & Slesinger (1964) varied both age, sex, and educational level in analyzing over 8000 questionnaires measuring degree of strain felt in the areas of job, money, and bodily complaints. The subjects were industrial employees, and ranged in age from 18 to 65 years. His results show that age, sex, and education do indeed affect the kind and degree of "strain" felt. While no consistent pattern emerged that would account for all of the data, it seemed that the higher level of education
grouping felt less economic and psychosomatic strain in the middle years. The less educated population group showed an increase in economic strain in the 20 to 39 year group when compared to younger and older members of that population group.

Peck (1964) found that socio-economic groupings made a great difference in adjustment scores from adults in a Kansas City sample. While both high and low socio-economic groups showed a decrease in adjustment during the 50's as compared with the 40's and 60's, the higher socio-economic groups were better adjusted throughout the years.

**Outer Indices of Adjustment**

*Variation using miscellaneous populations.* Two studies (Edwards & Wine, 1963; Havighurst, 1957) demonstrate that little age variation in social competence and friendliness have been found in the general populations. Havighurst's study utilized an interviewer-rating scale procedure and found that there were role changes, but no noticeable decrease in the quality of role performance for his 40 to 70 year old sample. The Edwards & Wine study, using test scores as the dependent variable, found that while scores representing social relations and friendliness declined in their 22 to 76 years age range sample of hospitalized men, this decline was not shown when the effects of a decline in non-verbal intelligence scores were taken into account.

However, when measures of other forms of competence are viewed, age changes are observed. Lehman's studies (Lehman, 1953, 1962) show a clear tendency for the 30's to be the period of maximum productivity in creative work in most fields. He points out, of course, that there are many individual and group exceptions such as in the field of athletics (earlier peak) and leadership (later peak). A study of the
rated performance of general engineering personnel (Oberg, 1960) supports Lehman's generalizations in that creativity was found to begin to decline at age 40, although performance improved until 55 or 60 years.

These creativity studies are especially pertinent when viewed in terms of personality dynamics. Studies with children have shown that creativity flourishes under a minimum of stress (Getzels & Jackson, 1962; Torrence, 1962). The proposition could be made that the 40's are stressful leading to a decline in creativity.

Two sources report a drop in productivity and effectiveness at age 40. Greenberg (1961) reports that the United States Bureau of Labor statistics for the years 1956-1960 suggest that there was some slight fall-off in production for factory workers at that age. Kirchner, McElwain, and Dunnette, (1960) found a significant trend for sales effectiveness in one firm to increase with age up until age 40 and then start to decrease. While a great many individual variations existed, the years from 30 to 40 were seen as the golden years of selling.

**Variation by sex.** A graph presented in Kuhlen's article (1959) was drawn from Census data for 1956, demonstrating that marked sex differences in suicide rate exist at all ages. Since suicide has been viewed by many writers (Kuhlen, 1959; Jones & Kaplan, 1945; Weiss, 1954) as a form of adjustment to personal and cultural stress, it is of interest to note that males by far exceed females in the suicide statistics. It is of greater interest to note that the span of years from 37 to 47 shows a positively accelerating curve for both sexes, while the period from 47 to 62 records a negative acceleration for
females and an increasingly positive acceleration for males. While it is difficult to interpret these results in terms of the present crisis hypothesis, it clearly indicates that either the stresses are greater with advancing age for men or that men simply favor suicide as a form of adjustment!

**Variation by marital status and education.** Three studies seem to indicate that the transition-in-role involved when children leave home is not necessarily stressful, at least for upper socio-economic groups. Deutscher (1959), using the data from the University of Chicago studies of a Kansas City sample, reports that middle-aged parents tended to define the post-parental situation favorably, particularly those parents who were involved in many non-parental roles. Sussman (1960) found that role changes in post-parental families were reported in over half of his sample in the roles of parent, spouse, user of leisure time, and church member, while the other seven roles measured did not change significantly. These role changes were more significant in the higher socio-economic groups. Foskett (1955) found that while both his high and low education groups showed a rise in social participation up to the middle years (35 to 54), only the low education group showed a decrease after the middle years.

**Summary**

It should be noted that no attempt was made to report those studies that reported a linear relationship between the dependent variable and age. The fact that there do exist studies showing discontinuity is offered as support for the present research.

These studies demonstrate that measures of molar aspects of the personality and of social behavior have been found to vary during the
adult years. Since few studies have been found as yet that systematically study the age variation by population groups, it is difficult to compare the results of the studies. It is not difficult, however, to see that some disequilibrium in personality development may indeed exist in the middle years within the normal population.

The studies reporting discontinuity as a function of the population group used are offered as evidence that differences may be found when level of education, sex, and marital status are varied as in the present study.
CHAPTER II

PROCEDURES

Design

An attitude scale (see Appendix B) was mailed on December 24, 1967 to each of 3000 individuals selected so as to be representative of the college trained and the non-college trained employees of the Columbus, Ohio Public School System. Using the current Staff Directory of the school system, names were selected for the mailing list so as to represent the staff parameters as accurately as possible. The approximately 4400 teachers were represented by a sample of 2000 names, while the nearly 1300 non-instructional staff was represented by a list of 1000 custodial, clerical, and lunchroom employees.

In order to provide sufficient numbers for sub-group analysis, an equal balance between men and women in the mailing list was felt to be desirable. The first 1000 male teachers listed in the alphabetically arranged directory were selected to be representative of the approximately 1100 men employed in this category. The nearly 3300 female teachers in the system were represented by every third name in the listing until an equal 1000 names were obtained. The sample of 2000 teachers used as the high education group in this study was thus composed of 1000 men and 1000 women.

An equal division of men and women non-instructional employees was made in the following manner. The names of the first 500 male
custodial employees was used to represent the more than 700 included in that category. All of the 219 lunchroom employees and 281 of the over 300 members of the clerical staff made up the female sample. In this manner, 500 men and 500 women employees were selected to make up the mailing list representing the low education group for the present study.

It should be observed that the sample selection procedures as described above tended to eliminate names at the end of the alphabet. If certain ethnic groups were represented in the staff of the school system, such a selection procedure would have resulted in a biased sample. Since careful scrutiny of the list revealed no such unusual frequency of names commonly associated with ethnic groups, the danger of the presence of ethnic bias in the sample was felt to be minimal.

Attached to the questionnaire was a letter of introduction (see Appendix A) containing a brief description of the importance of the research, a comment emphasizing the anonymity of the respondent, an offer to provide the respondent with the results of the study, and remarks relative to the authenticity of the investigation. A stamped addressed envelope was also enclosed for the convenience of the respondent.

For the purpose of questionnaire return, a mail drop was established in the Department of Psychology at The Ohio State University. This was done not only to emphasize the anonymity of the respondent, but also to establish the non-commercial aspect of the study. Several weeks after the mailing, the returned questionnaires were collected, scored and analyzed.

Description of the Questionnaire

The form of the questionnaire used in this study is that of the
semantic differential as developed by Osgood et al. (1957). In such an attitude measuring instrument, respondents are asked to judge one or more "concepts" by rating the concepts along a continuum ranging from one extreme position to its opposite extreme position. Bi-polar adjectives such as hot-cold, good-bad, and strong-weak are chosen as labels for the extreme positions of the continua on the basis of logical appropriateness to the concept and according to whether the labels reflect the judgmental dimension sought (evaluative, potency, activity, etc.). By carefully studying the responses of various groups, the authors have determined that seven steps are most effective when asking normal populations to make continuum ratings. Thus a respondent may demonstrate his reaction to a concept by marking a space showing that he feels extremely, quite, or slightly favorable (or unfavorable) towards the object listed or may indicate neutrality by making a mark in the middle position.

Development of the Questionnaire

The hypothesis of this study predicts that age variations in group attitude intensity will be found when the attitude objects used are of central importance to the individuals in the group. A convenient way of labeling the entire topic area is to subsume the object of central importance under the rubric life-in-general. We may thus choose concepts from the population of attitude objects common to life-in-general in adulthood with special attention to those concepts mentioned in the literature as at least theoretically sensitive to age changes. This superordinate label also makes it possible to discuss the age changes in total questionnaire group mean scores as representing changes in attitude intensity with respect to life-in-general.
Since frustration is posited as an underlying cause of low attitude intensity, it will also be possible to discuss results in terms of relative group dissatisfaction with life-in-general.

Osgood's procedure in developing a semantic differential instrument does not include the use of judges, item analysis, or comprehensive pretesting. The investigator is expected to take great care in selecting unambiguous concepts representative of the population of concepts to be rated and to choose appropriately descriptive adjective pairs. In defense of this procedure, Osgood et al. cite evidence to show that the steps of the item scale continuum do have enough relative equality to permit the comparison of scores at least by ranking methods.

In the present study, concepts of social objects were chosen on the basis of relevance to the topic area, lack of ambiguity, and relative commonality to all adulthood. From an original list of about twenty-five objects drawn from the literature as being pertinent to the topic, seven were finally selected as most appropriate in terms of the above criteria, i.e. children, marriage, my parents, my future, my friends, my daily tasks, and myself. Three pairs of appropriate bipolar evaluative adjectives were selected for each concept using the results of the thesaurus study reported in Osgood et al. (1957). In this way, each pair of adjectives chosen were expected to tap a somewhat different dimension of the evaluative, attitudinal meaning of the concept and result in a more valid rating.

The items were arranged in the questionnaire so as to avoid the effect of response set in the final scoring. The three repetitions of the concept name on the scale were separated; the position of favorable and unfavorable adjectives was alternated in each successive item.
Several extensive revisions of the questionnaire were made on the basis of two trial administrations using twenty-five of the writer's friends as subjects. Each of the respondents in the two trial administrations were asked to comment extensively relative to the clarity of the concepts and the appropriateness of the adjectives. The final form of the questionnaire, containing seven concepts with three adjective pairs per concept was evolved to form the final twenty-one item scale.

The standard instructions-to-respondents format as suggested by Osgood et al. did not survive the pre-testing as described above. Many of the pre-test respondents voiced objection to the length and unnecessary detail of the original instructions page. Finally, when the writer's ten and twelve year-old daughters successfully completed the questionnaires without even reading the instructions, it was decided to use a much abbreviated set of instructions and place the set at the top of the questionnaire itself.

The letter of introduction was also revised several times as a result of critical comments. The final form and content of the introduction was significantly sharpened over the original.

The Semantic Differential as a Measuring Instrument

Reliability. Osgood et al. (1957) spend a dozen or so pages (pp. 126-140) discussing the reliability of the differential type scale. Using immediate test-retest data with 100 subjects and a 40 item instrument, the authors conclude that the scores of the second testing were significantly predictable from the first testing, and that an item score deviation by an individual respondent would vary no more than 2 scale units at the 95 per cent level of confidence. In another
study, this reliability was shown to hold for neurotic as well as for normal subjects.

A third study was discussed which used an N of 112 and a test-retest interval of 30 minutes. The 100 item scale contained 10 concepts and 10 bi-polar adjectives, of which three adjective pairs tapped the evaluative (attitudinal) dimension. As expected, the mean evaluative factor score of the 3 evaluative items was found to be much more reliable than found for one item alone. The average respondent was found to vary no more than 1 scale unit at the 95 per cent confidence level.

A fourth study was reported which has pertinence to the present research. Eight groups of a college sophomore population, averaging 25 in each group (N's ranged from 21 to 29), were asked to rate 16 heterogeneous concepts using 9 scales, 3 of which represented the evaluative factor. The mean of the 3 evaluative scales for the 8 groups was taken as the "true" attitude of the sophomore population towards the concepts. Group mean deviations from the "true" mean for each concept were interpreted as a measure of the reliability of the scales. Osgood et al. concluded the discussion by stating:

Cultural meanings of concepts prove to be very stable . . . , a shift of only about four-tenths of a scale unit is significant at the 5 per cent level. This degree of stability holds despite the small sizes of the groups, only about 25 in each [pp. 139-140].

The test-retest time intervals used by the investigators were only a matter of minutes in most of the studies described above. The results of one investigation, in which the stability in meaning of the concepts was obviously different (my mood today, and paper clip), showed a predicted effect of greater item change with time for the less stable concept. This effect, together with the tendency for the
test-retest deviations to asymptote with time, led Osgood et al. to infer that changes in concept meaning over time were responsible for the increased deviation, and not decreased reliability of the differential type scale.

The present instrument will be assumed to have a reliability of at least four-tenths of a scale unit for group means, although it is obvious that the reliability will increase somewhat when the N of an age group is substantially larger than the 25 used in the study described above, or when the entire 21 item scale scores are averaged for an age group.

Validity. Although Osgood et al. (1957) cite studies which show a high correlation between evaluative factor scores on a differential scale with clinical judgements, voting behavior, etc., they place reliance on the face validity of the method:

Throughout our work with the semantic differential we have found no reason to question the validity of the instrument on the basis of its correspondence with the results to be expected from common sense [p. 141].

The semantic differential procedure has been used often enough to establish its validity at least in terms of correlations with other attitude scales (Shaw & Wright, 1967). In fact Kerlinger (1964) discusses the method, its validity, and its value in a chapter on the semantic differential suggesting that its value has only just begun to be appreciated.

Shaw & Wright report the results of one study (Nickels & Shaw, 1964) which suggests a lowered correlation between a semantic differential instrument and a Thurstone scale when the attitude object was of high salience (centrality) for the subjects. This finding is somewhat disturbing in view of the decision to use the differential form
in the current study. However it must be recognized that such a finding is exceedingly difficult to interpret, not only because it needs replication, but also because the validity of the Thurstone scales in measuring salient-object attitudes can also be questioned in terms of the effect of ego defensive influences on responses to directly worded items.

Sensitivity. Two applications of the semantic differential method in measuring attitude variation as a function of age have been found. Kogan & Wallach (1961) used the method to determine the difference in attitudes between a young and an old group of subjects toward objects common in every-day life. He found significant age differences in the concepts retirement, Negro, old age, my mother, the ideal person, future, and life. Sex-specific age differences were found for the concepts foreigner, imagination, death, love and myself. Schwartz and Kleemier (1965) used the differential to measure the influence of illness and age on personality using only the concept myself rated on twenty bi-polar adjectives. He found no age differences, but he did find that illness exerted a significant influence on the scores.

It is not possible to make any comparison between these two studies and the present research because only two age groups were used in each and because the statistical treatment has been different. It is of interest, however, to note that the differential has been used in developmental studies using adults and that the technique is sensitive to changes whether many or only one concept is used.

Treatment of the Data

The returned questionnaires were scored in a manner recommended by Osgood et al. (1957) by numbering the positions on the scale from
1 to 7, with the most favorable position assigned the score of 1 and the most unfavorable position the 7 score. An item score of 2, therefore, represents a quite favorable attitude towards the social object listed, while a score of 5 stands for a slightly unfavorable feeling towards the object. A 4 score suggests conflict or indecision in regard to the concept because all adults have experienced all concepts and cannot fail to have developed attitudes towards the concept.

Attitude intensity of a group of respondents can be represented by the mean of item scores. Thus when an age group mean intensity score of 2.5 is compared with an age group mean of 1.5, the inference may be tentatively drawn that the second group has in general more intensely favorable attitudes toward the concept(s) listed in the questionnaire. If the score rankings of the individuals from the one age group is significantly higher than the rankings of individuals from the second age group, the inference as to a real age group difference in mean intensity score is further supported.

In the present study, the item scores, along with the respondent's age, level of education (high or low), sex, and marital status (married or not married) were coded on special IBM sheets to prepare the data for card punching. The sheets were given to the Data Processing Center in Haggerty Hall on the Ohio State University Campus for processing and statistical analysis.

The age groupings of the returned questionnaires were made up of 8 five year intervals and 1 ten year interval, covering the age span from 20 to 70 years. The age group means for each of the concepts and for the total of all concepts were computed for the total number of returned questionnaires, then by level of education, and later by sex
and marital status within each level of education for a total of 11 population groups.

In order to determine whether the variations in age group means as predicted by the hypothesis were significant, the Mann-Whitney U test with adjustment for tied ranks (Siegel, 1956) was applied by computer between each successive age group for each of the population groups.

The hypothesis under consideration specifically predicts that one or more significant decreases in attitude intensity will occur from one age interval to the next. The null hypothesis used in the significance test was of course the reverse, i.e. that no significant decreases will occur. For example, if a decrease from age group 1 to age group 2 occurred but was not appropriately significant, the null hypothesis could not be rejected and no support would be found for the hypothesis of this research. A one-tailed test, using the commonly accepted .05 level of significance was used.

Tables were prepared in order to summarize the data for each population group. Each table shows (a) mean scores by concept and across all concepts for the 9 age groups, (b) the number of respondents represented in each age group, and (c) notations of significance in relative ranking when the individual scores of two age groups were combined. Graphs were drawn in order to illustrate the interaction of age, population group, and concept.
CHAPTER III

FINDINGS AND DISCUSSION

Questionnaire Return

Of the 3000 questionnaires mailed, 1137 returns were received. Of those returned, 74 were voided because of insufficient data, leaving a total of 1063 responses available for analysis. Table 1 summarizes the breakdown of returns by population groups.

<table>
<thead>
<tr>
<th>Population</th>
<th>No. Sent</th>
<th>No. Valid Returns</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Teachers</td>
<td>2000</td>
<td>818</td>
<td>40.9</td>
</tr>
<tr>
<td>Male Teachers</td>
<td>1000</td>
<td>426</td>
<td>42.6</td>
</tr>
<tr>
<td>Female Teachers</td>
<td>1000</td>
<td>392</td>
<td>39.2</td>
</tr>
<tr>
<td>All Non-Teachers</td>
<td>1000</td>
<td>245</td>
<td>24.5</td>
</tr>
<tr>
<td>Male Non-Teachers</td>
<td>500</td>
<td>58</td>
<td>11.6</td>
</tr>
<tr>
<td>Female Non-Teachers</td>
<td>500</td>
<td>187</td>
<td>37.4</td>
</tr>
<tr>
<td>All Questionnaires</td>
<td>3000</td>
<td>1063</td>
<td>34.5</td>
</tr>
</tbody>
</table>

Questionnaire respondents are always a select population different from a target population. Since at least 6 of every 10 members of the mailing sample are not represented in the statistics, some doubt may be cast on the statistics of this study as representative of even the sample. The possibility that members of the sample responded for different reasons at different ages cannot be overlooked as a biasing influence. Despite the fact that the statistics summarized herein are not clearly representative of the target populations, it should be
recognized that they are probably less biased than the clinical data used as a basis for much of the current speculation. Because the information contained in the respondent's scores may be as representative or even more representative of the normal population than any data currently available, it will be of value to speculate on the results, keeping in mind always the possibility that even these statistics may bear little resemblance to normal developmental phenomenon.

Four of the eleven population groups originally planned for analysis were dropped because of the small number of respondents found within the groups. Age changes in mean intensity scores were analyzed for: a) all questionnaires returned (1063), b) all teachers (818), c) male married teachers (351), d) female married teachers (260), e) female unmarried teachers (131), f) all non-teachers (245), and g) female married non-teachers (150).

The mean intensity scores by age for the population groups are presented in Table 2 for each of the concepts as well as for the total questionnaire. The results of the Mann-Whitney U test of significance applied by computer between each successive pairing of age groups are recorded to the .10 level of significance by placement of a letter after the appropriate score in the table. The letter indicates that the mean score represents a significantly higher ranking of individual scores when compared with the preceding age group individual scores.

Hypothesis

The hypothesis of this study specifically predicted that a general age related lessening in attitude intensity would occur as a result of the procedures and that such variation would be influenced by the nature of the population group. Table 2 shows that such was
### TABLE 2
MEAN ATTITUDE INTENSITY SCORES BY AGE FOR QUESTIONNAIRE RESPONDENTS

<table>
<thead>
<tr>
<th>Concept</th>
<th>Age in Years</th>
<th>All Respondents</th>
<th>All Teacher Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20-24</td>
<td>25-29</td>
</tr>
<tr>
<td></td>
<td>Children</td>
<td>173</td>
<td>187</td>
</tr>
<tr>
<td></td>
<td>Marriage</td>
<td>1.79</td>
<td>2.02b</td>
</tr>
<tr>
<td></td>
<td>My Future</td>
<td>1.73</td>
<td>1.79</td>
</tr>
<tr>
<td></td>
<td>My Friends</td>
<td>2.12</td>
<td>2.14</td>
</tr>
<tr>
<td></td>
<td>My Parents</td>
<td>1.58</td>
<td>1.66c</td>
</tr>
<tr>
<td></td>
<td>My Daily Tasks</td>
<td>2.29</td>
<td>2.22</td>
</tr>
<tr>
<td></td>
<td>Myself</td>
<td>2.38</td>
<td>2.46</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.00</td>
<td>2.06</td>
</tr>
<tr>
<td></td>
<td>Children</td>
<td>2.54</td>
<td>2.16</td>
</tr>
<tr>
<td></td>
<td>Marriage</td>
<td>1.79</td>
<td>1.98</td>
</tr>
<tr>
<td></td>
<td>My Future</td>
<td>1.75</td>
<td>1.78</td>
</tr>
<tr>
<td></td>
<td>My Friends</td>
<td>2.14</td>
<td>2.12</td>
</tr>
<tr>
<td></td>
<td>My Parents</td>
<td>1.35</td>
<td>1.61b</td>
</tr>
<tr>
<td></td>
<td>My Daily Tasks</td>
<td>2.29</td>
<td>2.18</td>
</tr>
<tr>
<td></td>
<td>Myself</td>
<td>2.39</td>
<td>2.41</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.01</td>
<td>2.05</td>
</tr>
</tbody>
</table>

* p < .10
  * p < .05
  * p < .01
### TABLE 2—Continued

<table>
<thead>
<tr>
<th>Concept</th>
<th>Age in Years</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>20-24</td>
<td>25-29</td>
<td>30-34</td>
<td>35-39</td>
<td>40-44</td>
<td>45-49</td>
<td>50-54</td>
<td>55-59</td>
</tr>
<tr>
<td>All Non-Teacher Respondents</td>
<td></td>
<td>N</td>
<td>8</td>
<td>11</td>
<td>11</td>
<td>23</td>
<td>47</td>
<td>47</td>
<td>48</td>
</tr>
<tr>
<td>Children</td>
<td>2.25</td>
<td>2.21</td>
<td>2.09</td>
<td>2.07</td>
<td>2.21</td>
<td>1.96</td>
<td>2.08</td>
<td>2.23</td>
<td>1.67</td>
</tr>
<tr>
<td>Marriage</td>
<td>1.79</td>
<td>2.70</td>
<td>1.85</td>
<td>2.38</td>
<td>2.05</td>
<td>2.19</td>
<td>2.15</td>
<td>2.26</td>
<td>2.36</td>
</tr>
<tr>
<td>My Future</td>
<td>1.38</td>
<td>2.05</td>
<td>1.52</td>
<td>2.49c</td>
<td>2.30</td>
<td>2.23</td>
<td>2.25</td>
<td>2.38</td>
<td>2.64</td>
</tr>
<tr>
<td>My Friends</td>
<td>1.79</td>
<td>2.52</td>
<td>2.09</td>
<td>2.14</td>
<td>2.00</td>
<td>2.06</td>
<td>2.25</td>
<td>1.98</td>
<td>1.85</td>
</tr>
<tr>
<td>My Parents</td>
<td>1.96</td>
<td>2.59</td>
<td>2.00</td>
<td>1.67</td>
<td>1.62</td>
<td>1.58</td>
<td>1.61</td>
<td>1.59</td>
<td>1.92</td>
</tr>
<tr>
<td>My Daily Tasks</td>
<td>2.38</td>
<td>2.94</td>
<td>2.12</td>
<td>2.59</td>
<td>2.28</td>
<td>2.13</td>
<td>2.01</td>
<td>2.18</td>
<td>1.97</td>
</tr>
<tr>
<td>Myself</td>
<td>2.21</td>
<td>3.30</td>
<td>2.06</td>
<td>2.90</td>
<td>2.67</td>
<td>2.50</td>
<td>2.41</td>
<td>2.74a</td>
<td>2.72</td>
</tr>
<tr>
<td>Total</td>
<td>1.96</td>
<td>2.58a</td>
<td>1.96</td>
<td>2.32</td>
<td>2.16</td>
<td>2.06</td>
<td>2.10</td>
<td>2.20</td>
<td>2.16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Male Married Teacher Respondents</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>23</td>
<td>76</td>
<td>68</td>
<td>62</td>
<td>47</td>
<td>27</td>
<td>20</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Children</td>
<td>2.49</td>
<td>2.14</td>
<td>2.02</td>
<td>2.04</td>
<td>1.96</td>
<td>2.14</td>
<td>2.35</td>
<td>2.12</td>
<td>1.98</td>
</tr>
<tr>
<td>Marriage</td>
<td>1.49</td>
<td>1.67</td>
<td>1.64</td>
<td>2.01</td>
<td>1.91</td>
<td>1.73</td>
<td>2.07a</td>
<td>1.50</td>
<td>1.57</td>
</tr>
<tr>
<td>My Future</td>
<td>1.71</td>
<td>1.70</td>
<td>1.82</td>
<td>1.83</td>
<td>1.92</td>
<td>2.15</td>
<td>1.77</td>
<td>1.93</td>
<td>2.48</td>
</tr>
<tr>
<td>My Friends</td>
<td>2.28</td>
<td>2.06</td>
<td>2.08</td>
<td>2.01</td>
<td>2.09</td>
<td>2.19</td>
<td>1.90</td>
<td>2.48a</td>
<td>2.02</td>
</tr>
<tr>
<td>My Parents</td>
<td>1.45</td>
<td>1.63</td>
<td>1.64</td>
<td>1.62</td>
<td>1.65</td>
<td>1.54</td>
<td>1.78a</td>
<td>1.64</td>
<td>1.57</td>
</tr>
<tr>
<td>My Daily Tasks</td>
<td>2.12</td>
<td>1.94</td>
<td>2.03</td>
<td>1.96</td>
<td>2.10</td>
<td>2.07</td>
<td>1.90</td>
<td>2.02</td>
<td>1.95</td>
</tr>
<tr>
<td>Myself</td>
<td>2.25</td>
<td>2.16</td>
<td>2.11</td>
<td>2.17</td>
<td>2.27</td>
<td>2.25</td>
<td>1.98</td>
<td>2.12</td>
<td>2.74b</td>
</tr>
<tr>
<td>Total</td>
<td>1.97</td>
<td>1.90</td>
<td>1.92</td>
<td>1.95</td>
<td>1.98</td>
<td>2.01</td>
<td>1.96</td>
<td>1.97</td>
<td>2.04</td>
</tr>
</tbody>
</table>

\(a \ p < .10\)
\(b \ p < .05\)
\(c \ p < .01\)
<table>
<thead>
<tr>
<th>Concept</th>
<th>Age in Years</th>
<th>20-24</th>
<th>25-29</th>
<th>30-34</th>
<th>35-39</th>
<th>40-44</th>
<th>45-49</th>
<th>50-54</th>
<th>55-59</th>
<th>60-70</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female Married Teacher Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>65</td>
<td>59</td>
<td>24</td>
<td>19</td>
<td>22</td>
<td>18</td>
<td>18</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>Children.........</td>
<td></td>
<td>2.16</td>
<td>2.08</td>
<td>2.36</td>
<td>1.89</td>
<td>1.85</td>
<td>2.30</td>
<td>2.11</td>
<td>1.67</td>
<td>2.15a</td>
</tr>
<tr>
<td>Marriage.........</td>
<td></td>
<td>1.36</td>
<td>1.67b</td>
<td>1.75</td>
<td>1.81</td>
<td>2.71b</td>
<td>1.72</td>
<td>1.94</td>
<td>1.78</td>
<td>1.74</td>
</tr>
<tr>
<td>My Future........</td>
<td></td>
<td>1.52</td>
<td>1.77</td>
<td>1.65</td>
<td>1.77</td>
<td>2.08</td>
<td>1.74</td>
<td>1.81</td>
<td>1.80</td>
<td>1.78</td>
</tr>
<tr>
<td>My Friends......</td>
<td></td>
<td>1.96</td>
<td>2.16</td>
<td>2.01</td>
<td>1.77</td>
<td>2.15</td>
<td>2.04</td>
<td>1.72</td>
<td>1.60</td>
<td>1.69</td>
</tr>
<tr>
<td>My Parents......</td>
<td></td>
<td>1.26</td>
<td>1.67b</td>
<td>1.47</td>
<td>1.04</td>
<td>1.92</td>
<td>1.80</td>
<td>1.41</td>
<td>1.35</td>
<td>1.26</td>
</tr>
<tr>
<td>My Daily Tasks</td>
<td></td>
<td>2.21</td>
<td>2.49</td>
<td>2.17</td>
<td>2.12</td>
<td>2.02</td>
<td>1.74</td>
<td>1.80</td>
<td>1.73</td>
<td>1.76</td>
</tr>
<tr>
<td>Myself...........</td>
<td></td>
<td>2.02</td>
<td>2.42b</td>
<td>2.03</td>
<td>2.32</td>
<td>2.61</td>
<td>2.06</td>
<td>2.07</td>
<td>2.08</td>
<td>1.94</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1.79</td>
<td>2.04b</td>
<td>1.92</td>
<td>1.90</td>
<td>2.20a</td>
<td>1.91</td>
<td>1.84</td>
<td>1.75</td>
<td>1.76</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Concept</th>
<th>Age in Years</th>
<th>20-24</th>
<th>25-29</th>
<th>30-34</th>
<th>35-39</th>
<th>40-44</th>
<th>45-49</th>
<th>50-54</th>
<th>55-59</th>
<th>60-70</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female Married Non-Teacher Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>6</td>
<td>5</td>
<td>8</td>
<td>15</td>
<td>34</td>
<td>37</td>
<td>27</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Children.........</td>
<td></td>
<td>2.17</td>
<td>1.93</td>
<td>2.13</td>
<td>1.82</td>
<td>2.16a</td>
<td>1.90</td>
<td>2.35</td>
<td>2.53</td>
<td>1.67</td>
</tr>
<tr>
<td>Marriage.........</td>
<td></td>
<td>2.06</td>
<td>1.07</td>
<td>1.88</td>
<td>2.16</td>
<td>2.04</td>
<td>1.97</td>
<td>2.21a</td>
<td>2.02</td>
<td>1.44</td>
</tr>
<tr>
<td>My Future........</td>
<td></td>
<td>1.44</td>
<td>1.20</td>
<td>1.63</td>
<td>2.60b</td>
<td>2.11</td>
<td>2.06</td>
<td>2.21</td>
<td>2.11</td>
<td>2.33</td>
</tr>
<tr>
<td>My Friends......</td>
<td></td>
<td>1.83</td>
<td>1.93</td>
<td>2.13</td>
<td>1.96</td>
<td>1.91</td>
<td>1.89</td>
<td>2.23a</td>
<td>1.64</td>
<td>1.78</td>
</tr>
<tr>
<td>My Parents......</td>
<td></td>
<td>2.00</td>
<td>2.47</td>
<td>2.04</td>
<td>1.67</td>
<td>1.60</td>
<td>1.32</td>
<td>1.81c</td>
<td>1.40</td>
<td>1.78</td>
</tr>
<tr>
<td>My Daily Tasks</td>
<td></td>
<td>2.50</td>
<td>2.40</td>
<td>2.08</td>
<td>2.58</td>
<td>2.23</td>
<td>2.14</td>
<td>1.96</td>
<td>2.16</td>
<td>2.56</td>
</tr>
<tr>
<td>Myself...........</td>
<td></td>
<td>2.22</td>
<td>2.00</td>
<td>2.21</td>
<td>2.67</td>
<td>2.45</td>
<td>2.41</td>
<td>2.47</td>
<td>2.47</td>
<td>3.22</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2.03</td>
<td>1.86</td>
<td>2.01</td>
<td>2.21</td>
<td>2.07</td>
<td>1.96</td>
<td>2.18a</td>
<td>2.05</td>
<td>2.11</td>
</tr>
</tbody>
</table>

a p < .10
b p < .05
c p < .01
TABLE 2—Continued

<table>
<thead>
<tr>
<th>Concept</th>
<th>Age in Years</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20-24</td>
<td>25-29</td>
<td>30-34</td>
<td>35-39</td>
<td>40-44</td>
<td>45-49</td>
<td>50-54</td>
<td>55-59</td>
</tr>
<tr>
<td>Female Unmarried Teacher Respondents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>46</td>
<td>21</td>
<td>12</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Children.........</td>
<td>2.15</td>
<td>2.06</td>
<td>2.36a</td>
<td>1.60</td>
<td>2.17</td>
<td>2.72</td>
<td>1.89</td>
<td>2.25</td>
</tr>
<tr>
<td>Marriage.........</td>
<td>2.11</td>
<td>3.06c</td>
<td>2.97</td>
<td>3.13</td>
<td>2.56</td>
<td>3.22</td>
<td>2.80</td>
<td>2.67</td>
</tr>
<tr>
<td>My Future.......</td>
<td>2.09</td>
<td>2.13</td>
<td>1.67</td>
<td>2.00</td>
<td>2.28</td>
<td>2.67</td>
<td>2.11</td>
<td>2.12</td>
</tr>
<tr>
<td>My Friends......</td>
<td>2.14</td>
<td>2.11</td>
<td>1.52</td>
<td>1.87</td>
<td>2.14</td>
<td>2.56</td>
<td>1.86</td>
<td>1.71</td>
</tr>
<tr>
<td>My Parents....</td>
<td>1.42</td>
<td>1.63</td>
<td>1.39</td>
<td>1.93</td>
<td>1.33</td>
<td>1.44</td>
<td>1.38</td>
<td>1.29</td>
</tr>
<tr>
<td>My Daily Tasks</td>
<td>2.42</td>
<td>2.22</td>
<td>2.06</td>
<td>2.33</td>
<td>1.89</td>
<td>2.56</td>
<td>1.91</td>
<td>2.21</td>
</tr>
<tr>
<td>Myself..........</td>
<td>2.88</td>
<td>3.11</td>
<td>2.53</td>
<td>3.00</td>
<td>2.67</td>
<td>3.11</td>
<td>2.41</td>
<td>2.29</td>
</tr>
<tr>
<td>Total</td>
<td>2.22</td>
<td>2.33</td>
<td>2.08</td>
<td>2.27</td>
<td>2.19</td>
<td>2.61</td>
<td>2.06</td>
<td>2.08</td>
</tr>
</tbody>
</table>

a p < .10
b p < .05
c p < .01
indeed a result of the investigation.

While nearly significant lessening of intensity from one age group to another occurred, and while general trends over a number of age groups were registered, only those differences in rankings that reached the .05 level of significance may be appropriately discussed in relation to the hypothesis. Table 2 reveals that one population group, Female Married Teachers, recorded a significant (.03) drop in generalized attitude intensity using the questionnaire item totals in the 25-29 year age group. There is thus only about 1 chance in 33 that such a decrease among the individual members of that age group could have occurred by chance. Considering that a large number of respondents were involved in this category at these two ages, it is apparent that such decrease in intensity is not only significant, but also that the decrease may reflect a true decrease in the actual population of female married teachers.

The null hypothesis predicting that there would be no significant decrease in attitude intensity in a population group must accordingly be rejected. While the hypothesis may not properly be accepted on this basis, empirical support for a belief in the existence of periods of heightened psychological stress in a normal population has been found.

Technical Considerations

The review of the literature demonstrated the current lack of specific information as to the timing, conditions, and even the existence of periods of motivational disequilibrium in the normal population. For this reason, the hypothesis of this study was necessarily quite general in its prediction. While the probability approach to data analysis was taken in the attempt to be as objective as possible, it
would be misleading to place exclusive reliance on such analysis. It may be observed, for example, that 30 comparisons between paired independent age group scores were made in the present study. It is obvious that, as the number of comparisons increase, the probability of obtaining an unusual distribution of scores by chance alone is increased. It is possible that the significance levels reached by the Mann-Whitney U test and the changes in the mean scores recorded beyond the four-tenths scale unit estimate of the instrument reliability established earlier occurred by chance alone with no developmental influence being involved.

While it is possible that the age changes recorded herein did occur strictly by chance, it is also just as possible that the age changes were influenced by the developmental variables posited by theorists. Only replications of this study can shed light on the true sources of the age variation.

The discussion that follows thus makes use of the probability data of the significance test and the instrument reliability estimate. The recording of significantly higher rankings of individual scores within one age group in comparison to the rankings of the preceding age group will be considered as potentially indicative of the existence of developmental variables. An age change in mean scores beyond the four-tenths reliability estimate will be noted also as a sign of potential importance. It will be also possible to speculate on the trends observed across two or more age groups as suggesting developmental tendencies.

Discussion

The rationale behind this investigation assumes that lessening
intensity across ages is indicative of the existence of increased psychic conflict, frustration, and threat. The following commentary will be found to implicitly equate decreased intensity with increased psychic stress.

The graphic presentations of the data of Figures 2 through 9 will be seen to contain only a partial representation of the returns for female unmarried teachers and female married non-teachers. The number of respondents found at some ages for these groups was felt to be too small to present as a basis for discussion with any degree of confidence.

**Generalized Variations**

The general trend for the scores of the 1063 respondents to register a decrease in intensity over the 10 year period from the early 30's to a low point in the early 40's is shown in Figure 1. This trend is suggestive of the existence of a period of decreased satisfaction from life-in-general in all the population groups, although the discussion to follow will make clear that this may be an artifact of the averaging process.

Inspection of Figure 1 reveals that there are several differences in score trends for teaching and non-teaching employees of the school system. Teachers' attitudes seem to be generally more intense and trend increasingly more intense past the early 40's into the 60's. On the basis of the assumption that low intensity reflects higher degree of dissatisfaction, it could be inferred that teachers experience less stress generally and increasingly less stress past middle age than do non-teaching employees of the school system. Since the population divisions were made on a work role basis, it is impossible to
Fig. 1.—Mean attitude intensity scores by age for all items by major groups of questionnaire respondents.
speculate on alternate factors causing this difference in score patterns. Education level, social status, intelligence, and even a wide range of personality factors are undoubtedly varied to some degree between the two groups.

The previously demonstrated tendency for attitudes to become more extreme with age is shown, although such tendency only becomes noticeable in the late 50's for certain populations as will be seen in Figure 2.

Figure 2 presents the total questionnaire scores by population group. It is apparent that female unmarried teachers tend to join their married sisters in experiencing increased stress in the late 20's, although the statistical significance rating such change is only at the .12 level for this group.

It is interesting to observe that female married teachers register increased stress again in the early 40's. While this change is only rated at the .09 level of significance for the small numbers of teachers involved, the fact that clinical theory postulates a universal climacteric for women in the middle years lends importance to this finding. Neugarten's speculation (1964) on the results of one of the studies in her book is of significance in determining the nature and chronology of a climacteric. She writes: "...inward orientation and decreased cathexis for outer world events seem to precede, rather than follow measurable changes in extent of social interaction [p. 194]."

It may be that a psychic stress period in the early 40's exists as a prelude to behavioral changes in the late 40's!

Female married non-teachers also recorded a generalized decrease in intensity in the middle years at a near significance level (.10).
Figure 2.—Mean attitude intensity scores by age for all items by minor groups of questionnaire respondents.
The major point of interest here is in the timing of the inferred stress period. While their married teaching associates show a drop in the early 40's, the non-teachers indicate that the early 50's are stressful. As will be seen in assessing the contribution the concept scores make to the over-all score, the objects of dissatisfaction for the 2 groups may not be the same.

Male married teachers show little variation in generalized intensity scores throughout the age span. As will be shown, this result is an artifact of the averaging process which masks intensity decreases in attitudes toward specific concepts. The results of the last two age groups for male married teachers should be considered with caution, however, for only 14 respondents were recorded in each of the two groups. It was decided to include these groups in the discussion for their value in extending trends from previous age groups.

Figure 2 also suggests that married women teachers tend to become more extreme in generalized attitude intensity, while their male counterparts become less intense past the late 40's. This finding will be discussed in the light of theory and research which indicates that aging is more stressful for men.

Specific Concept Variations

Attitudes toward children. Examination of Figure 3 reveals several interesting tendencies. All populations recorded for the decade of the 20's record a trend for attitudes toward children to improve from the early post adolescent period of the early 20's to the beginning adulthood period of the later 20's. Since no non-teacher groups were studied at these ages, generalization beyond the teacher group cannot be made.
Fig. 3.—Mean attitude intensity scores by age for the concept Children by minor groups of questionnaire respondents.
Further analysis of the data of Figure 3 suggests an unusual phenomenon. While the scores for the entire questionnaire (all concepts) as shown in Figure 2 record stress periods in the late 20's and early 40's for the female teacher groups, the scores representing attitudes toward children show an increase in favorableness for these ages! It is almost as though female teachers value children as representing substitute goal objects during periods of dissatisfaction in other facets of their lives! In this respect it is interesting to note that male married teachers record a three age-group trend from the early 50's on to view children more favorably, which is again the reverse of the generalized trend shown in Figure 2! Such a reversal in attitudes toward children is not found in the female married non-teacher group.

Attitudes toward marriage. An interesting bowed effect may be observed in the averaged scores of all respondents in Figure 4. The fact that the change from the early 20's to the early 40's is beyond the four-tenths of a unit established as the reliability of the instrument, and that a 50 year trend is involved, lends credence to the validity of this effect. The respondents in their early and late years seem to view marriage more favorably than those in their middle years.

The drop in scores representing increased stress periods for female married teachers, female unmarried teachers, and female married non-teachers follow the pattern of generalized scores in Figure 2 quite closely, however reaching statistical significance for only the two former groups. The fact that several mean changes occurred far past the four-tenths of a unit reliability limit is also suggestive of the existence of developmental rather than chance variables influencing the score. It is reasonable to assume that ambivalent attitudes to-
Fig. 4.—Mean attitude intensity scores by age for the concept Marriage by minor groups of questionnaire respondents.
wards marriage make a substantial contribution to the generalized intensity score decrease in all three groups.

Male married teachers scored at a low intensity level in attitudes toward marriage in the early 50's. While this drop only reached the .10 level of significance, it is of interest to note that this drop was joined by a like drop in attitudes toward children.

Attitudes toward my future. There is a definite trend observable in Figure 5 for the scores representing the average of all respondents to decrease over the adult age span. This decrease is quite in line with all theory which takes cognizance of the individual's tendency to equate favorableness with the amount of personal life time available. The future appears bright for the young, and limited for the old. The fact that the statistical comparison between ages 30-34 and 35-39 reaches at least the .07 level of significance lends credance to this observation.

The tendency for male married men to end a 10 year trend of decreasing intensity in affect towards their personal future in the early 50's only to resume the trend in the late 50's is intriguing and will be referred to later.

Attitudes toward my friends. The trend for the average scores of all groups to show increasingly favorable feelings with age toward their friends is apparent in Figure 6. This gradual increase in intensity scores across 3 age groups from the early 50's on is highly pertinent to the theory of disengagement mentioned earlier. According to the theory and the studies associated with the theory, there is a gradual reduction in social contacts with advancing age. The trend shown in Figure 6 suggests, that although the number of friends may
Fig. 5.—Mean attitude intensity scores by age for the concept My Future by minor groups of questionnaire respondents.
Fig. 6.—Mean attitude intensity scores by age for the concept My Friends by minor groups of questionnaire respondents.
decrease, those friends are more highly valued than earlier!

Again the trends and age changes in attitudes toward friends for the female groups are consonant with the generalized pattern shown earlier. The tendency for male married men in their early 50's to end a 10 year decline in intensity in attitudes toward friends may be noted and compared with the like finding for attitudes toward their personal future as described above. The puzzling six-tenths of a unit drop in intensity for the 14 male married teachers at ages 55-59 is difficult to understand, especially since it is the only concept that shows such marked effect for this group at this age.

Attitude toward my parents. There appears to be a highly significant (.007) period of universally ambivalent feelings toward the respondent's own parents in the late 20's as shown in Figure 7. Inferences as to the underlying dynamics behind this dramatic change may be drawn in terms of a struggle for independence in family roles and in terms of conflicts predicted between generational family modes of behavior, but such inferences would be quite tenuous. If adolescence is a period of identity crisis involving a striving for independence from parents, it would be expected that late adolescence would contain some overtones of this inner ambivalence directed at parents. Such does not seem to be the case in the high intensity scores recorded for the early 20's of all teacher groups. Further research extending the age span into early and middle adolescence would add valuable information to this area of inquiry.

Parents are seen in confusing terms for the female married non-teachers and the male married teachers in their early 50's. This change is of interest in the light of psychoanalytic theory which
Fig. 7.—Mean attitude intensity scores by age for the concept My Parents by minor groups of questionnaire respondents.
suggests that a resurgence of intergenerational conflict occurs in the middle years, especially for men who are at their maximum in social power. The reverse effect for female married teachers may be observed.

**Attitudes toward my daily tasks.** The scores of all respondents representing attitudes toward daily tasks or work activities are seen to increase across the adult age span as shown in Figure 8. The graph shows a marked lack of correspondence with the population variations demonstrated in other graphs and suggests that attitudes toward this concept are minimally influenced by developmental and population group membership. These results are in conflict with clinical and popular literature which predict that individuals experience job dissatisfaction in the middle years.

**Attitudes toward myself.** It will be seen by review of previous graphs, that only attitudes toward marriage show such a marked variation between population groups and across ages as is shown in attitudes toward the self in Figure 9. This marked variation suggests that self attitudes are sensitive to age influences and population group membership as predicted by personality theories emphasizing the importance of self constructs. It could be argued within the context of self theory that the variations in attitude intensity recorded in this data are the most valuable results of this study and more indicative of over-all personality adjustment than even the generalized intensity scores representing attitudes toward life-in-general as recorded in Figure 2!

An impressive drop in self concept intensity was recorded for the average of all 1063 respondents over the 10 year span from the early 30's to the early 40's. The fact that the drop from the early to the
Fig. 8. — Mean attitude intensity scores by age for the concept *My Daily Tasks* by minor groups of questionnaire respondents.
Fig. 9. -- Mean attitude intensity scores by age for the concept *Myself* by minor groups of questionnaire respondents.
late 30's for such a large number of respondents is rated by significance test at the .1003 level and that the change in mean score from the early 30's to the late 40's is past the four-tenths of a unit reliability deviation of the instrument expected by chance, lends support to an inference that developmental variables influenced the change in intensity. The lowest point reached on the graph by the averaged group scores is in the early 40's. If the postulates of self theories are valid, this low point in self evaluation may be evidence of a period of disequilibrium predicted for the common population by popular and clinical theorists!

Variation in scores by population group may be observed to parallel previous findings for female teachers. Thus the late 20's and the early 40's appear to be again a point of uncertainty. Female married non-teachers show no such variation, however, suggesting that the period of the early 50's previously shown to be conflictful does not involve a change in attitudes toward that most central of all social objects, the self.

The change in attitude intensity toward the self is marked in male married teachers beginning in the early 50's. The 15 year trend of lowering self evaluation is broken sharply at this age and rises to its highest point for all ages. It drops sharply in the late 50's and significantly (.04) so in the 60's. It may be reviewed at this point that such a pattern was shown in attitudes involving a personal future, and that a nearly reverse pattern was shown for the concepts children and marriage. It seems as though married men teachers in their early 50's deprecate the value of their family and invest value in themselves only to turn around and value their family more than themselves
in the late 50's and 60's!

General Observations

It has been shown that the generalized intensity scores for the population groups as shown in Figure 2 tend to mask the varying contributions made by the concept scores in several cases. While marriage and my parents are seen to make a major contribution to the low intensity scores of the late 20's and early 40's for female married teachers and non-teachers, self devaluation only contributes to the intensity change for the teacher group. The masking effect is particularly misleading when analyzing the data for male married teachers as was discussed in the preceding paragraph. The conclusion that the attitude and goal object structure of periods of motivational disequilibrium is different according to age and group membership cannot be avoided!

No mention has been made of the almost universal low intensity period shown on the graph at ages 35-39 for female married non-teachers. It is unfortunate that so few younger members of this population group responded to the questionnaire mailing. Inspection of Table 2 shows that only 8 individuals fell in the age bracket immediately preceding the 35-39 age group, which makes the mean score for that preceding age group unreliable. If more individuals had been recorded for that age, it would have been possible to have speculated on the direction and degree of change recorded for the 35-39 age group.

Since the main interest of this paper has been in periods of lowered intensity, little attempt has been made to discuss the significance of the periods of relative high intensity shown. It may be that this data will prove useful when age-related periods of "satisfaction" or "happiness" are a topic of interest. Little attempt was made to
discuss the absolute differences in intensity scores between populations. It would have been interesting for example, to speculate on the reasons behind the generally lower intensity scores for female unmarried teachers!
CHAPTER IV

SUMMARY AND IMPLICATIONS FOR RESEARCH

Summary

A pattern of adult age changes in inferred psychic stress levels was obtained for various population groups among the large number of employees of the Columbus, Ohio Public School System responding to an attitude intensity questionnaire. The hypothesis claiming the existence of one or more age related periods of increased psychological stress in a normal population was supported for female married teachers in the late 20's at the .03 (one tailed) level of significance.

The possibility that the respondent population was not at all representative of the sample population, and that the changes in age group scores could have occurred entirely by chance was acknowledged. The alternate possibility that developmental variables did influence the scores of a respondent population somewhat representative of the target population was discussed and used as a basis for speculating on the age changes recorded.

By noting near significance levels in changes between successive pairs of age groupings, by observing trends across several age groups, and by considering the reliability estimate of the instrument, inferences were drawn about the existence of additional periods of "middle-science" in various population groups.

Observation of the pattern of changes for all 1063 respondents
led to the suggestion that the early 40's may be a period of generalized dissatisfaction with life-in-general, although the line representing the teacher group was seen to indicate that this period existed only in that high education group. Socio-economic-education status was seen also to influence the general level of scores throughout the age span, leading to speculation that higher status correlated with higher levels of satisfaction.

It was suggested that female unmarried teachers experienced increased stress in the late 20's along with female married teachers as indicated above. The early 40's were seen as years of ambivalence for female married teachers, while the early 50's appeared to register unrest in female married non-teachers. Evidence was presented to suggest that male married teachers experienced motivational disequilibrium regarding their families in the early 50's.

In the teacher groups there appeared to be a tendency for attitudes toward children to improve during periods of dissatisfaction in other areas. Self attitudes were seen to be sensitive to age and population group changes, giving support to self theories of personality structure and reinforcing the suggestion that the early 40's were stressful for the teacher groups.

Attitude intensity and hence level of psychic stress felt was thus seen to vary with the age, occupation, and sex of the respondents. Intensity was also seen to vary with the nature of the attitude object used. Variation by marital status could not be determined to any great degree because of the low number of respondents found in the unmarried population categories.
Comparison with Research

It will be recalled that the graph presented in Figure 1 showed a trend for all 1063 respondents to register increased ambivalence from the early 30's to a low point in the early 40's. The graph presented in Pressey & Kuhlen (1957, p. 149) shows that first admission rates to State Mental Hospitals varied considerably in nature of complaint and per cent of population during the 40's, a finding that does not seem totally unrelated to the present data. Of interest is the finding by Shaie (1958) which showed that the age 40-45 seemed to record the highest degree of personality-perceptual rigidity for the adult ages studied. The mid forties were found to be the age at which the ego qualities of comprehension, verbal fluency, and numerical and spatial relations began to decline in the study by Bilash & Zubek (1960).

The creativity studies mentioned earlier suggest that this ability begins to decline in the general population during the early 40's. This finding is of interest when compared with the findings of the present study showing that at least female married teachers experienced increased stress in the early 40's. As high stress has been found to correlate with low creativity, it is possible that a source of low creativity in the early 40's has been shown for female married teachers!

The current observation of low intensity periods in the early 50's for several populations compares with the studies mentioned earlier which show that social responsibility and adjustment decreases (Schaie, 1959; Peck, 1964) and annoyability increases (Cason, 1930) at these ages.

Socio-economic variation was shown in several studies. Indik et al. (1964) sampled an industrial population and found that the higher
level of education groupings felt less economic and psychosomatic strain in the middle years, while Peck (1964) discovered that higher socio-economic groupings were better adjusted throughout the ages 40-60 years. The results of the present study show a consistent tendency for the higher socio-economic respondents to record greater attitude intensity during the middle years and inferentially to experience less stress. The results of this study are thus in direct agreement with these two studies.

According to the present data, a middle-teen period exists for all women teachers in the late 20's. While previous data exist supporting this finding for unmarried women teachers (Phillips & Greene, 1939) and for average to higher socio-economic status unmarried women (Willoughby, 1938), their data showed little or no indication of increased tension for married women in the late 20's. In fact, if one attributes any validity at all to oldster's retrospections, the studies mentioned earlier suggest that the late 20's are the happiest for married women! Assuming the information contained in the present and reported studies is valid, it is possible to speculate on the nature of periods of high stress. It could be that increased attitude ambivalence registers both exhilarating and debilitating stresses!

A married woman just becoming engaged with the new challenges of building her family, could be enjoying the stressful situation and adapting rapidly, while her unmarried sister could be feeling stress, but of a more disabling nature. In fact, support for such a hypothesis could be found in the less intense attitudes of the unmarried female teachers shown in Figure 2!

The tentative finding that married women teachers experience a
second middle-Selection period in the early 40's also finds no parallel in the research literature. In fact Willoughby's study (1938), using an inventory of neuroticism, found that the 40's were the best and the 50's the worst years for married women of average to high socio-economic status! The finding that the female married non-teacher category in the present study, which was made up of school clerks and lunchroom employees, showed increased stress in the early 50's is of interest in comparison with Willoughby's results. It is quite possible that female married teachers in urban areas differ from female married non-teachers more in personality factors than in factors more commonly associated with socio-economic status!

Although the evidence for the existence of a middle-Selection period in the male married teacher population depends on acceptance of a difference in response to family and self attitude object constellations in the early 50's as definitive, it is this finding that shows the most support in the available research. As shown before, Willoughby found that the 50's were the most maladjusted years for men and that the mid forties the best adjusted. If low impulsivity could be viewed as a positive personality trait, then Bortner's results (1963) showing that the mid forties were less impulsive years could also be offered as support for the present findings.

The observation of sex differences in degree of conflict and frustration felt in the later years finds a parallel in Tharp's study (1963) where the male role in marriage was found to become more restricted. Under such conditions it would be expected that males would become more ambivalent in their attitudes past the middle years, and of course such was one of the findings of this study. The increased
suicide rate for males in the later years was mentioned earlier as suggestive of such a sex difference in the degree of stress experienced.

The fact that it is necessary to generalize widely when comparing the results of studies in the area of adult personality development is felt to be a function not only of the lack of studies available, but also a function of the wide variety of research instruments used, target populations involved, and age groups considered. The fact that the differential form of instrument has been shown to be remarkably sensitive and that a large number of respondents have been involved enhances the credibility of the present research. It must also be mentioned that no other investigation has attempted to vary population groups in such a systematic fashion as has been done herein.

Finally it should be emphasized that the outcomes of this study give support to Osgood's claims as to the usefulness and sensitivity of the semantic differential. The finding reported in Osgood et al. (1957) that high intensity indicates low stress and low intensity suggests high stress is also supported by the logical consistency of many of the results of this study as shown in the discussion.

Comparison with Theory

The data of this study may be found to support both the one variable approach of the rise-fall theories of personality development and the stage-crisis theories of reintegration or rapid learning. While respondents did seem to show a critical period in development only in the early 50's that would fit nicely with Frenkel-Brunswik's finding of age 48 years as the average age of discontent for a German population of both sexes, women demonstrated several periods of heightened stress
This study thus supports the approach of Kuhlen (1959) and Kutner (1962) who, as quoted earlier in this paper, predict both curvilinear and cyclical changes in stress with age, depending on the population group studied.

A finding of particular significance may be noted with respect to Kuhlen's hypothesis (1959) that much of the negative effect of aging can be attributed to a generalized increase in anxiety with age. Osgood et al. (1957) report the results of several studies which suggest that high IQ interacts with anxiety to produce high intensity scores. It would have been impossible to explain the findings for the supposedly high IQ teacher group of this study if high intensity were equated with anxiety which is also a common resultant of high degrees of frustration, conflict and threat! An interpretation of lessened stress would have had to have been made for male teachers facing retirement; female married teachers would be inferred to experience high stress in the 50's and 60's. Such a result would be in exact opposition to several studies reported in Neugarten (1964). Attitudes toward the future would be seen to improve with advancing age, which is patently improbable. It must be assumed that anxiety was not a factor present to influence the group trends. Only subtle and pervasive degrees of frustration, conflict and threat are indicated as influencing the intensity scores as predicted earlier.

Implications for Future Research

One of the most important outcomes of this study is the demonstration that the differential form of attitude study shows promise as a method for developmental investigations. The fact that a relatively
substantial percentage of returns was registered for a questionnaire method involving no follow up procedures, attests to the form's acceptability by respondents. Future researchers should bear the advantages of the semantic differential in mind when planning studies.

This research requires replication, since the statistical support for the findings is suspect. A further study, while retaining teachers as the target population, could vary the time of the year involved to see the effect on scores. The addition of a larger number of low socio-economic-educational subjects would provide meaningful comparisons between population groups.

It would be of great interest to administer this scale to adolescents and geriatric populations thus extending the age range of the present findings. Other populations could be studied to determine the various influences of a wide range of group memberships on score patterns.

Studies should be made to validate the meaning of the variation in intensity scores across ages. It may be that the high intensity scores registered by teachers in their later years are strongly affected by a general dependence on certain ego-defense mechanisms not found in a lower socio-economic-education grouping. In such a case, the inference of less subjective stress for the higher group would be wrong.

A questionnaire could be developed using a different combination of concepts common to all adulthood. Time, death, sickness, money, and love, are among the many concepts that the literature suggests as having developmental dimensions.

The possibility of clinical use of this questionnaire should not
be overlooked. The coded data may be easily turned into a standard-
ization table to enable a clinician to compare a patient's scores with
scores from a normal population. Information derived therefrom could
be of assistance in determining areas of concern.

The question is raised in the literature as to whether crosssec-
tional methods in studying adult personality development reflect
current cultural and biological conditions or whether they are contami-
nated heavily by conditions existing during the formative years. For
example, what effect does being reared during the years of World War II
have on the scores of the female respondents scoring at a low intensity
in the late 20's as shown in this study? Such questions could be
answered only by an appropriately designed longitudinal study.
APPENDIXES
APPENDIX A

MAY WE HAVE THREE MINUTES OF YOUR TIME in the interest of advancing our scientific knowledge of human growth and development?

We know very little about attitude development during adulthood. One of the reasons for this is that active adults cannot be located easily. While we can learn from children in schools and from older adults in retirement centers, we can learn about the middle years only through home contacts.

Because of this lack of facts, employers, clinics, and agencies must plan with adults on the basis of guesswork. This not only leads to much wasted time and money, but may also result in planning that is harmful to those of us in the middle years!

If you will spend the three minutes necessary to complete this questionnaire, you will make a valuable contribution to our understanding of attitude development during normal adulthood.

You will notice that no identifying information is asked for. Your questionnaire is one of many and could in no way be traced to you.

If you are interested in the results of the ADULT SURVEY, please send us a self-addressed stamped envelope. A summary will be sent to you in the Spring.

Please complete the questionnaire now. A postponement may lead to the questionnaire getting lost among your other papers.

Thank you for your cooperation!

ADULT SURVEY
Developmental Psychology
Room 309, Arps Hall
1945 North High Street
The Ohio State University
Columbus, Ohio 43210
APPENDIX B

DIRECTIONS: You are to indicate your attitude towards the item listed at the start of each line. In each case, look at the middle or neutral position first, then make a mark (X) which represents your first feeling toward the item in terms of direction (either way or neutral) and strength (slightly, quite, very). Mark each item.

1. CHILDREN:  
   very (x) ( ) ( ) ( ) ( ) ( ) ( ) cruel
   slightly ( ) ( ) ( ) ( ) ( ) ( ) ( )

2. MARRIAGE:  
   sad ( ) ( ) ( ) ( ) ( ) ( ) ( )
   bright ( ) ( ) ( ) ( ) ( ) ( ) ( )
   happy ( ) ( ) ( ) ( ) ( ) ( ) ( )

3. MY FUTURE:  
   ( ) ( ) ( ) ( ) ( ) ( ) ( )
   hopeful ( ) ( ) ( ) ( ) ( ) ( ) ( )
   ( ) ( ) ( ) ( ) ( ) ( ) ( )

4. MY FRIENDS:  
   dishonest ( ) ( ) ( ) ( ) ( ) ( ) ( )
   ( ) ( ) ( ) ( ) ( ) ( ) ( )
   honest ( ) ( ) ( ) ( ) ( ) ( ) ( )

5. MY PARENTS:  
   kind ( ) ( ) ( ) ( ) ( ) ( ) ( )
   cruel ( ) ( ) ( ) ( ) ( ) ( ) ( )

6. MY DAILY TASKS:  
   unpleasant ( ) ( ) ( ) ( ) ( ) ( ) ( )
   ( ) ( ) ( ) ( ) ( ) ( ) ( )
   pleasant ( ) ( ) ( ) ( ) ( ) ( ) ( )

7. MYSELF:  
   successful ( ) ( ) ( ) ( ) ( ) ( ) ( )
   unsuccessful ( ) ( ) ( ) ( ) ( ) ( ) ( )

8. MARRIAGE:  
   bad ( ) ( ) ( ) ( ) ( ) ( ) ( )
   good ( ) ( ) ( ) ( ) ( ) ( ) ( )

9. MY FRIENDS:  
   valuable ( ) ( ) ( ) ( ) ( ) ( ) ( )
   worthless ( ) ( ) ( ) ( ) ( ) ( ) ( )

10. MY DAILY TASKS:  
   bad ( ) ( ) ( ) ( ) ( ) ( ) ( )
   good ( ) ( ) ( ) ( ) ( ) ( ) ( )

11. CHILDREN:  
   grateful ( ) ( ) ( ) ( ) ( ) ( ) ( )
   ungrateful ( ) ( ) ( ) ( ) ( ) ( ) ( )

12. MY FUTURE:  
   hopeless ( ) ( ) ( ) ( ) ( ) ( ) ( )
   hopeful ( ) ( ) ( ) ( ) ( ) ( ) ( )

13. MY PARENTS:  
   valuable ( ) ( ) ( ) ( ) ( ) ( ) ( )
   worthless ( ) ( ) ( ) ( ) ( ) ( ) ( )
<table>
<thead>
<tr>
<th></th>
<th>MYSELF:</th>
<th>SLIGHTLY</th>
<th>SLIGHTLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.</td>
<td>MYSELF:</td>
<td>very unhappy ( )</td>
<td>quite neutral ( )</td>
</tr>
<tr>
<td>15.</td>
<td>CHILDREN:</td>
<td>pleasant ( )</td>
<td>( )</td>
</tr>
<tr>
<td>16.</td>
<td>MARRIAGE:</td>
<td>dull ( )</td>
<td>( )</td>
</tr>
<tr>
<td>17.</td>
<td>MY FUTURE:</td>
<td>important ( )</td>
<td>( )</td>
</tr>
<tr>
<td>18.</td>
<td>MY FRIENDS:</td>
<td>selfish ( )</td>
<td>( )</td>
</tr>
<tr>
<td>19.</td>
<td>MY PARENTS:</td>
<td>good ( )</td>
<td>( )</td>
</tr>
<tr>
<td>20.</td>
<td>MY DAILY TASKS:</td>
<td>worthless ( )</td>
<td>( )</td>
</tr>
<tr>
<td>21.</td>
<td>MYSELF:</td>
<td>complete ( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

Please mark the spaces below so we can analyse attitude development by groups:

AGE AT LAST BIRTHDAY: _____ SEX: ( ) male ( ) female OCCUPATION: _____

Please indicate your marital status:
( ) SINGLE ( ) MARRIED ( ) WIDOWED ( ) DIVORCED OR SEPARATED
BIBLIOGRAPHY


Donahue, W. *Relationship of age of perceivers to their social perceptions.* Gerontologist, 1965, 5, 241-245.


Hardyck, C. *Sex differences in personality changes with age.* J. Geront., 1964, 19, 78-82.


Havighurst, R. J. *Adult education and adult needs.* Chicago: Center for the Study of Liberal Education for Adults, 1956.


Horrocks, J. E. Assessment of behavior. Columbus, Ohio: Merrill, 1964.


Likert, R. A technique for the measurement of attitudes. Arch. Psychol., 1932, (140), 1-55.


Schaeie, K. W. Rigidity-flexibility and intelligence: a cross-sectional study of the adult life span from 20 to 70 years. Psychol. Monogr., 1948, 72, (9).


