NOTICE

The quality of this microform is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this microform is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30.

AVIS

La qualité de cette microforme dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, tests publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de cette microforme est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30.

THE UNIVERSITY OF ALBERTA

ATTRIBUTIONS, STEREOTYPES, AND THE ACHIEVEMENT OF THE ELDERLY

BY

JUDITH M. JOHNSON

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF SCIENCE

IN

FAMILY STUDIES

FACULTY OF HOME ECONOMICS

EDMONTON, ALBERTA

SPRING, 1988

ISBN 0-315-42822-8

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR: Judith M. Johnson

TITLE OF THESIS: Attributions, Stereotypes, and the Achievement of the Elderly

DEGREE: Master of Science

YEAR THIS DEGREE GRANTED: 1988

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

Judith M. Johnson
(Student's signature)

11515 73 Avenue
Edmonton AB T6G 0E2
(Student's permanent address)

Date: April 21, 1988,

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled Attributions, Stereotypes, and the Achievement of the Elderly submitted by Judith M. Johnson in partial fulfillment of the requirements for the degree of Master of Science in Family Studies.

Nancy L. Hurlbert
(Supervisor)

Brenda J. Rule

Nora L. Keating

Date: December 16, 1987

ABSTRACT

The purpose of this study was to investigate how negative age based stereotypes influence the achievement attributions of elderly individuals. Attributions made about the achievement of another person are an indirect and accurate way of studying stereotyped attitudes, and are also hypothesized to affect the behavior of the attributor.

Weiner's attributional model of achievement motivation was used to analyze the influence of age group and outcome treatments on nine different achievement attributions. Elderly individuals (n = 93) and a comparison group of university students (n = 85) read a story about a hypothetical person of their own gender and age group who succeeded or failed to pass university admission tests. Next, they ranked nine achievement attributions on a five-point scale according to how likely each attribution was as a reason for the hypothetical person's achievement.

This study was a secondary analysis. The data indicated that the elderly group, in comparison to the young group, showed more of a self-serving pattern in achievement attribution. They did not show evidence of stereotyped attitudes in attribution to ability, attitute toward tests and effort. Attribution to age showed a non-self-serving pattern, or some evidence of stereotyping.

This finding was mediated by the fact that age was not viewed as a very important reason for achievement.

The results of this study agree with Lachman and McArthur (1986), but not with Banziger and Drevenstedt (1982). A possible reason for these equivocal results would be the select nature of the elderly sample in this study. The results imply that certain elderly individuals can ignore ageism, and that family life education programs for the elderly might mediate the effects of stereotyped societal attitudes for those elderly individuals who are affected by such stereotypes.

ACKNOWLEDGEMENTS

I would like to thank the members of my thesis committee for their careful reading of this thesis, particularly Dr. Nancy Hurlbut who was always supportive and helpful. Thank you also to Karen Argento and Wayne Watson for cheerful assistance, and my family for sharing me with my computer.

I would also like to acknowledge the Alberta Senior Citizens Secretariat, for funding the larger study (Hurlbut, 1988) which formed the basis for this thesis.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

PAGE

CHAPTER ONE

Introduction

The age group of persons over 65 years of age, referred to herein as elderly adults or simply "the elderly" (Nuessel, 1982), includes a large number of individuals. It has been predicted that the proportion of elderly adults in Alberta will increase rapidly in the near future. In 1986, 8.1% of the population of Alberta was elderly adults. In the year 2006, the proportion of elderly adults in the population has been predicted to be 10.4% (Alberta Senior Citizens Secretariat, 1986).

The predicted increase in numbers of elderly adults makes research aimed at improving their functioning in life important. This is particularly true since some elderly adults have been shown to have less rewarding lives than they could have due to (for example), "lowered self-esteem and diminished feelings of control" (Rodin & Langer, 1980, p. 12). These diminished feelings of control are particularly salient in terms of the sense of cognitive control the elderly feel over their environment. As Woodruff (1983) said, "we simply must know more about optimal skills in old age and how to optimize cognitive capacity in the elderly" (p. 141).

Understanding how to optimize cognitive capacity in elderly adults includes understanding how negative age based stereotypes decrease their ability to live as successfully as possible. (Rodin & Langer, 1980; Woodruff, 1983). Stereotypes can be defined as "the most frequent combination of traits assigned by one group to another" (Cox, 1984, p. 15). Negative stereotypes about the intellectual abilities of elderly adults have been shown to exist (Willis & Baltes, 1980).

A first step in understanding how stereotyping may affect achievement behavior of elderly adults is by studying what stereotypes they perceive. One method of studying stereotypes is through studying attributions (Frieze, 1984; Blank, 1984b). Attributions are the reasons or explanations people give for their behavior, or for the behavior of others (Antaki, 1981). Attributions are influenced by stereotypes (Deaux, 1976; Weiner, 1980a), and can be used as indicators of stereotyped attitudes. Attribution studies of age stereotyping are considered more meaningful and realistic than earlier survey and questionnaire methods of measuring stereotypes, since these earlier methods exaggerated the prevalence of negative stereotyping (Botwinick, 1984). The purpose of this study is to investigate whether negative age based stereotypes are evident in the achievement attributions of elderly adults.

The problem of stereotypes of the elderly is that they often include negative traits. Stereotypic perceptions of elderly people do not allow their individual characteristics to be seen, and can become biases or prejudices (Troll, 1982). Frequently, stereotypes establish norms for a group based on the "least desirable traits possessed by some members of the group" (Cox, 1984, p. 16). At their worst, stereotypes of the elderly could be called ageism or "the process of systematically stereotyping and discriminating against people because they are old" (Butler, 1975, p. 894).

Ageism can function as does racism or sexism. It can set the elderly apart from others, and maintain their subordinate status in society (Levin & Levin, 1980). This occurs when elderly adults behave in ways that agree with ageist stereotypes, which actually represent cultural expectations of their age group (Rodin & Langer, 1980). For example, elderly adults may feel they are too old to learn, and may avoid intellectual activities because of this.

Theoretically, attributions influence the behavior of the attributor (Antaki, 1981), and therefore if attributions are changed, behavior will change (Weiner, 1979). For example, "self-serving" achievement attributions, or attributions which take credit for success but not for failure (Zuckerman, 1979) positively influence

the achievement behavior of the attributor. On the other hand, non-self-serving or stereotyped attributions can negatively affect behavior, which in the case of the elderly may prevent them from living as successful lives as possible. A number of studies have shown elderly adults to have a non-self-serving style of achievement attributions which is indicative of stereotyped attitudes (Lachman & McArthur, 1986). It is the assumption of this study that the presence of stereotyped attitudes in the elderly causes them to lead less productive lives than necessary.

Stereotypes of the elderly are reinforced by everyday factors such as television, newspapers, and personal contacts, as well as long held beliefs inherent in society (Achenbaum, 1985). Schaie (1983) argues that current stereotypes of the intellectual ability of the elderly are old beliefs based on outdated research. This early research used methods biased against the elderly (e.g., cross-sectional IQ studies) and showed that intellectual aging meant progressive decline. Current research shows that intellectual aging is "differential rather than normative and dynamic rather than static" (Willis & Baltes, 1980, p. 260).

Research findings, therefore, are undergoing a shift. Societal attitudes, or stereotypes, toward the elderly should ideally reflect this shift, particularly the attitudes the elderly have about their own age group.

Attributional research with elderly adults can reveal, in an indirect but accurate way, how they perceive the intellectual abilities of their age group. Such research can be used to understand the achievement behavior of elderly people by revealing whether their attributions reflect traditional negative stereotypes or not. In this study, attribution theory is used as a theoretical framework to do this.

Attribution theorists are concerned with three different aspects of perceived causality: (a) whether it is internal or external, (b) its relation to antecedent information, and (c) how it is linked with overt behavior (Weiner, 1976). The assumption that attributions can be used to predict overt behavior is common to all attribution theories (Antaki, 1981; Heider, 1958; Jones, Kanouse, Kelley, Nisbett, Valins, & Weiner, 1972; Kelley, 1978; Kelley & Michela, 1980).

Weiner's (1976) attributional model of achievement motivation is used in this study as a theoretical framework since it deals specifically with the consequences of achievement attributions. Although attribution theorists have applied Weiner's model to young adults and children, there has been little application to the elderly (Banziger & Drevenstedt, 1982; Lachman & Jelalian, 1984; Reno, 1979). Weiner's model has been used to study how to maximize the achievement of young people (i.e., by changing attributions,

behavior can be changed) and can be used for the same purpose with elderly people (Frieze, 1984). This study is a step toward maximizing the potential of the elderly as it contributes to understanding stereotyping and the achievement of elderly adults.

As previously stated, the purpose of this study is to investigate whether negative stereotypes are evident in the achievement attributions of the elderly. This purpose is achieved through the use of person perception, or an "observer paradigm" (Lachman & Jelalian, 1984). This means the elderly participants (or observers) make attributions about another elderly person's achievement, not about their own achievement. The other elderly person in this research is a fictional person in a story, who succeeds or fails at an achievement-related task.

In order to recognize stereotyped attributions in the elderly, their attributions are compared to those of a control group of young adults about the achievement of a young adult. The reason young adults are used, is that there are few negative stereotypes about young people's intellectual ability, and they should therefore not be influenced by negative stereotypes about the intellectual ability of their age group. A difference between the attributions of the two age groups would be evidence of negative stereotypes in the achievement attributions of the elderly. The problem investigated in the study is: how do

the achievement attributions of young and elderly adults differ after they read about the achievement of someone else in their own age group?

CHAPTER TWO

Theoretical Orientation

In recent years, attribution theory, or the study of causal attributions, has become one of the most active and expanding areas of social psychology. Attribution theory is not one unified, coherent theory, but numerous partial theories, models, frameworks and hypotheses (Frieze & Bar-Tal, 1979). Combined, the research on attribution forms a set of general principles, not a systematized set of assumptions (Kelley, 1973).

Existing attribution theories have been separated into two types: attribution theories and attributional theories (Antaki, 1981; Kelley, 1978; Kelley & Michela, 1980). Antaki (1981) says early attribution theorists such as Heider (1946), Jones and Davis (1965) and Kelley (1973) considered "how people worked out the causes of someone's behavior" (p. 5). These theories he calls attribution theories, and explains that they describe the process of attribution formation, or what happens before attributions are made.

The term attributional theory is used to refer to theories about how attributions affect the attributor's behavior (Antaki, 1981; Kelley, 1978). Kelley and Michela

(1980) make the distinction that attributional research is concerned with consequences of attributions, whereas attribution research deals with the relationship between attributions and their antecedents.

The principles Heider (1958) outlined are still used by current attribution researchers (Harvey & Weary, 1981). Attribution theory began in the 1950's with the study of person perception, or the study of what people thought about one another. Fritz Heider, known as the father of attribution theory (Frieze & Bar-Tal, 1979), led the way with his general theory of social perception. Three fundamental assumptions guided Heider's "naive" psychology of attribution. First, how a person perceives and describes his social world explains his behavior. Second, Heider assumed people desire to predict and control their environment. Third, there are some basic similarities between object and person perception. That is, people look for enduring or dispositional properties in others to explain particular behaviors (Frieze & Bar-Tal, 1979).

Early partial attribution theories (Jones & Davis, 1965; Kelley, 1967) were attempts to formalize Heider's principles (Antaki, 1981) and were limited in application. Later attribution research was based on Heider's ideas, but was expanded to be applied in a variety of areas. Some of the areas in which attribution theory has been applied include actor-observer differences in attributed causality,

self-esteem processes in attributions, lay epistomology, misattribution of arousal, and attribution in achievement situations.

The work of Bernard Weiner and associates has been important in "establishing a literature concerning the inference of causality as well as other perceptions and behavior in achievement situations" (Harvey & Weary, 1981, p. 23). Originally, Weiner developed his theory to add a cognitive dimension to the theories of achievement motivation of McClelland, Atkinson, Clark and Lowell (1953) and Atkinson (1964). As a result, Weiner's partial theory shows the influence of motivation theory as well as Heider's writings.

Weiner (1972) presents his model as an attributional analysis of an individual's achievement-related behavior. He says that an individual's causal perception of achievement success or failure (as indicated by causal attributions) can be very important in understanding that individual's actual achievement behavior. According to Weiner (1974), causal perceptions of success and failure mediate between antecedent conditions and achievement-related behavior. Table one shows that antecedent factors, such as negative stereotypes, influence the explanations a person gives for others' success and failure. These explanations, in turn, influence their own motivation to achieve. For example, an elderly man might say someone

else failed because he was old. Such an explanation for another person's failure (or other-attribution) can be an indicator of why the person making the explanation underachieves. In this case, underachievement could be due to stereotyped attitudes about the achievement of elderly adults.

This sequence of events is crucial to the problem being addressed by the proposed study. That is, theoretically, it is concerned with the interaction between particular antecedents (e.g., stereotypes), types of attributions (e.g., ability, luck), and achievement behavior of the elderly. The only aspect studied here is achievement attribution. The assumption is that attributions are indicators of stereotypes and predict level of achievement.

As table one shows, Weiner's model explains the relationship between the antecedents and the causal attributions a person makes. The methodology he uses in order to analyze this relationship has been used frequently in diverse ways, such as to study motivation in the classroom situation (Weiner, 1979); judgements of help-giving (Weiner, 1980b); moral judgements (Weiner & Peter, 1973); attribution and affect (Weiner, 1977); and stereotyping (Locke-Connor & Walsh, 1980; Reno, 1979). The methodology in this study further exemplifies his theory.

Table 1

The Current Attributional Model of Achievement Motivation

Antecedents ---→	Types of Attributions (Causes of Success and Failure) ---→	Behavioral Consequences
Specific Information	Ability	Persistence
Individual differences	Effort	Time to problem
Stereotypes	Task ease/ difficulty	solution
	Luck	Better/worse performance
	Attitude	
	Gender	
	Others' ability	
	Age	
	Others' attitudes	

Adapted from Weiner, 1974, p. 48.

In Weiner's research, subjects typically read a story describing a person (called the "stimulus person") who experiences an outcome of success or failure at a task. After reading the story, the subjects attribute the person's outcome (success or failure) to various causes. Weiner uses Heider's (1958) four causes for success and failure: ability, effort, task difficulty and luck for attribution choices. Weiner (1980a) explains that there are more perceived causes of success and failure than Heider's four, such as mood, fatigue, and illness, but in our culture, "it has been clearly documented that ability, effort, task difficulty, and luck are the dominant causes perceived" (Weiner, 1980a, p. 328). Because of this, they are important for identification of stereotyped attitudes.

Weiner (1979) hypothesizes that the four commonly perceived causes can be placed in two causal dimensions: stability (stable or unstable) and locus of causality (internal or external). Stable causes are perceived as fixed or unchanging and unstable causes are perceived as variable (Weiner, 1979). Internal causes are perceived as located within the individual or controlled by the individual. External causes are perceived as outside the individual or beyond the control of the individual (Rotter, 1966, 1975). Internal causes could also be described as personal; external causes as impersonal (Green, 1984).

In the causality dimension, ability and effort are classified as internal determinants of action. Task difficulty and luck are classified as external determinants of success and failure. In the dimension of stability, Weiner says that one's perception of ability is relatively invariant (stable) over time. Similarly, task difficulty is conceptualized as an unchanging (stable) factor. Effort and luck on the other hand are assumed to be variable (unstable) factors. Weiner combines the two dimensions to say that ability is an internal-stable factor, effort an internal-unstable factor, task difficulty an external-stable factor, and luck an external-unstable factor (see Table 2).

Table 2

Classification Scheme for the Perceived Determinants of Achievement Behavior

	Locus of Causality	
Stability	Internal	External
Stable	Ability	Task difficulty
Unstable	Effort	Luck

(Adapted from Weiner, 1980a, p. 346)

Weiner (1980a) emphasizes that the dimensions of causality are used to organize the causal concepts. Further dimensions have been identified, such as controllability (Weiner, Russell, & Lerman, 1978), and intentionality (Weiner, 1979), however for the purposes of this study, only the original two, locus and stability, are considered. Locus and stability are useful for identification of a self-serving attributional style which is indicative of an absence of negative stereotyping.

Weiner did not study age as a perceived cause for success or failure, however age is an important attribution for this study, since attribution to age reveals stereotyping. There is a dilemma of how to classify the attribution of age on the causal dimensions of locus and stability (Green, 1984). Age can be considered internal because it "resides in the individual" or external because it "happens to or is imposed on the individual" (Green, 1984, p. 108). With regard to the stability dimension, aging implies instability because it involves "gradual transition", but stability as well since the changes are likely to endure for the rest of the individual's life.

Others using Weiner's model have studied age as an attribution and there are differences in how it is classified. Locke-Connor and Walsh (1980) classify age as external and stable. Banziger and Drevenstedt (1982) classify age as internal and stable. In this study, age is

not classified and is treated as a unique attribution.

In Weiner's paradigm, task difficulty is assessed as a causal attribution according to how others perform at the task. If many succeed, the task is easy and if few succeed, then it is difficult. The most salient cue for luck attributions is whether the task can be seen as clearly involving luck or skill. Another more valid cue for luck is randomness of outcome, but this is often misinterpreted and a chance task is wrongly viewed as skill-determined (Weiner, 1980a).

There are individual differences in antecedents which influence attributional decision-making. These include personal attitudes and stereotypes. "Stereotypes can influence attributions for the behavior of others just as one's self-concept influences self-perceptions of causality" (Weiner, 1980a, p. 344).

According to Weiner (1980a), attribution of success to internal factors, especially ability, indicates achievement motivation. Attribution of success to external factors (e.g., task ease or luck) indicates lack of motivation. Attribution of failure to external factors is considered favourable, since the person does not take personal responsibility for failure (Weiner, 1972). Attribution of failure to internal factors (effort, ability) is considered unfavourable since the person indicates the cause for failure is within him/her, and cannot be changed. This

favourable attribution pattern of attributing success internally and failure externally has been labelled "a self-serving effect" (Zuckerman, 1979). This pattern indicates a tendency to accept responsibility for success, and deny responsibility for failure.

The focus of this study is on the first part of the attributional process; the influence of antecedents on attributions. Although behavioral consequences of attributions are not directly studied, it is an assumption of this study that unfavourable attributions adversely influence behavior.

This study adds to the literature on the achievement attributions of the elderly. It contributes to the understanding of how elderly people perceive their age group, how stereotypes may be reflected in their achievement attributions, and how another person's experience affects their achievement attributions.

CHAPTER THREE

Literature Review

The problem addressed in this study is: how do the achievement attributions of young and elderly people differ after they read about the success or failure of another person in their own age group? There are negative stereotypes about the intellectual abilities of the elderly, and these may cause the elderly to attribute another elderly person's failure to being old. The connection between stereotypes of the elderly's intellectual abilities and their achievement attributions is examined here by reviewing the literature on: (a) aging and intellectual abilities, (b) stereotypes of the elderly and (c) achievement attributions of the elderly. Also reviewed are research findings on (d) achievement attributions of young adults, since a comparison group of college students is used in the study.

Aging and Intellectual Abilities

The term "aging" refers in the broadest sense to "a series of time-related changes in a set of interconnected variables" (Brommley, 1966, p. 17). Changes can include both improvement and decline with increased age. In the

case of a person's aging and intellectual abilities, there is considerable controversy in the literature as to which type of change, if any, occurs. This controversy is outlined in this section of the literature review.

Prior to the 1970's, evidence about intelligence and aging was equivocal. Some evidence suggested that intelligence peaked at an early age (around 30) and then declined (Jones, 1959). Other evidence suggested that intelligence peaked in the early twenties, stayed at this level for two or three decades, then declined in late adulthood, or around 60 years of age (Jones, 1959). Horn (1976) explained that this equivocation in the evidence was based on the mixed findings of IQ tests in which longitudinal studies showed no decline or improvement in intelligence over adulthood, while cross-sectional studies showed decline. Time-sequential analyses showed an adulthood decline in intellectual abilities occurring late in life which was less severe than previously supposed.

Major researchers in the field of intelligence and aging arrived at different conclusions upon studying the data from the 1970's and earlier. A debate between the opposing viewpoints appeared in a series of articles in American Psychologist in the 1970's. Horn and Donaldson (1976) advocated that an age decrement hypothesis be considered valid. That is, they claimed that significant aging decrements occur for important abilities of

intelligence. Baltes and Schaie (1976) argued that intellectual decline may occur, but the "inter-individual differences, multidimensionality, multidirectionality, modifiability and joint import of age- and cohort- related determinants" (p. 720) must be considered. They claimed that Horn and Donaldson (1976) de-emphasized cohort effects and presented a "reactionary critique antagonistic to necessary progress" in the research on aging and intelligence (p. 720).

Horn and Donaldson (1976, 1977) seemed to have the most difficulty with the data from the modifications of cross-sectional and longitudinal procedures used by Baltes and Schaie (1974). With this modified data, Baltes and Schaie (1976) were arguing that the long-standing belief of intellectual decline was a myth. "Myth" was explained as referring to the fact that "a stereotypic view of universal decline of intelligence in old age is a myth, as this view is not supported by empirical findings" (Baltes & Schaie, 1976, p. 720). Horn and Donaldson (1976) countered that the analyses used by Schaie and others (Schaie & Labouvie-Vief, 1974; Schaie, Labouvie, & Buech, 1973) in attempting to dispel the myth were not well controlled, and may have produced distorted results.

In response to Horn and Donaldson's criticisms, Baltes and Schaie (1976) stated that the stereotypic view of the universal decline of intelligence in adulthood and old age

is not supported by empirical findings. Also, they emphasized that they were not suggesting that intelligence increases--only that they reject the "stereotypic view of decline" held by many specialists in gerontology.

The contradictions in the findings could be attributed to many factors. As previously mentioned, research design had an influence on results. Sample attrition in longitudinal studies and volunteer bias in all types of designs were factors. Riegel (1972) studied problems in research on aging and intelligence and suggested that the sampling influences in the studies on intelligence and aging could produce a "positive bias". He found that in research of any age group, those who drop out tend to be low scorers, while those who do not tend to be high scorers.

Confounding of the age variable occurs in all research designs. In cross-sectional analyses, differences between cohorts can be confounded with age changes within individuals. In longitudinal studies, historic change can be confounded with changes within individuals. In both types of design, sampling cannot be assumed to be representative since those who volunteer for and remain in a study tend to be the most able.

Another complication was the finding that intellectual decline frequently occurs just prior to death, known as the death drop (Jarvik & Blum, 1971; Riegel & Riegel, 1972).

This means that older cohort sample scores will be depressed more due to "death drop" scores than younger cohort samples. This might produce a negative bias (Horn, 1976).

Due to the negative and positive biases which were uncontrolled in research on adult intellectual development in the 1970's, the findings need to be interpreted with caution. Some of these findings include: (a) older people require more time for learning tasks than young people, (b) older people experience a decline in "organizational thinking, perceiving relationships, forming hypotheses, making integrations, and shifting from one learning task to another" (Horn, 1976, p. 470), and (c) some intellectual changes reflect changes in styles of thinking.

The "age decrement hypothesis" controversy continues in the 1980's. Researchers are interested in continuing the investigation of cohort effects (e.g., education) as an explanation for differences in adult cognition over the life span (Denney, 1982).

Other issues are also in question. Some researchers feel the tasks used in research on aging may not be relevant to the elderly (Labouvie-Vief & Chandler, 1978; Schaie, 1976). Perhaps elderly individuals would show less or no decrement with more realistic tasks.

Schaie (1983) reports on findings from his more recent research project (1979, 1982) which indicates that on

abilities where speed is not important, there is very little change in intellectual function throughout adulthood. He also notes that the current generation of elderly who are over 70 years of age have experienced some intellectual decrement, but less than previously suspected. This decrement may not be seen in future generations of elderly because the elderly studied until now may have been showing the decline prior to death (Riegel & Riegel, 1972) which would not be seen if they were to live longer.

Schaie (1983) notes that the young of today function at a much higher level than the elderly of today "who were young 50 years ago". But, he implies that this is due to cohort differences, and not entirely due to intellectual decrement as theorists such as Horn and Donaldson (1976) would believe. According to Schaie, the elderly may not have declined, but rather, may have become obsolete and be capable of retraining. They may be functioning at the level they attained when they were young - which is not appropriate for success in contemporary society.

Individual differences in changes in intellectual function with age are also of interest. It has been suggested that poor health conditions may affect performance levels (Hertzog, Schaie, & Gribbin, 1978). Environment may also play a role in adult intelligence, in that a varied environment is conducive to intellectual growth (Gribbin, Schaie, & Parham, 1980). Those elderly

living in a static environment may be more likely to show a decrement.

Schaie (1983) questions whether all of the decrements reported by research are large enough to be considered serious. He admits that some are, but that in other cases, they may be used to deny the elderly societal roles.

The disagreement among researchers in intellectual development in later life is pronounced. Some believe the disagreement is in part due to differences in the motivation of the researcher in studying intellectual changes (Labouvie-Vief, 1982; Schaie, 1983). Labouvie-Vief (1982) suggests that interpretations of data in the field may reflect rationalization to "perpetuate existing social systems" (p. 151). A "highly consistent data base" of intelligence and aging can be interpreted in very different ways (Labouvie-Vief, 1982). She points out that interpretations of decrements are different depending on the theoretical model employed by the researcher. A biological model will show definite decrements with aging, contextual models which consider cohort and culture will show a more "pluralistic" position, while hierarchical models will show losses and gains (Labouvie-Vief, 1982).

The significance of current research on aging and intelligence for this study is that the elderly are influenced by the popular view about the abilities of their cohort. According to Schaie (1983), the popular and

stereotypical view is that of universal decline. If in fact the elderly are affected by this stereotype, their achievement attributions will reflect this, whereas the attributions of the young will not. Furthermore, if the stereotype about intelligence of elderly people is reflected in their attributions about another elderly person's achievement, the presumption is that this stereotype will also be reflected in their achievement behavior.

Stereotypes of the Elderly

There has been considerable research done on stereotyping of the elderly by others (especially college students) and themselves. It is well known from this research that negative stereotyping of the elderly exists (Banziger & Drevenstedt, 1984; Butler, 1975; Kausler, 1982; Linn & Hunter, 1979; Perry & Slemp, 1980; Rodin & Langer, 1980). The results of negative stereotyping for the elderly will be investigated in this literature review. The main focus will be on that research which investigates how stereotypes influence the achievement behavior of the elderly. Of particular interest will be research on stereotypes and achievement of the elderly, and research on stereotyping using a person-perception (attribution) approach.

Typical Stereotypes Perceived by the Elderly

Negative stereotypes have characterized the elderly for the past 30 to 40 years (Butler, 1975). These stereotypes include the assumptions that the elderly think and move slowly; think differently and less creatively from the young; are bound to their past and can no longer change and grow; are not interested in learning, and if they do learn, it is slowly; are traditional, conservative, anti-change; are irritable; and often regress to a second childhood (Butler, 1975).

The elderly are also portrayed by stereotypes to be helpless and incompetent (Bennet & Eckman, 1973). The results of negative stereotyping for many elderly people can be a low opinion of their own age group (Perry & Slemp, 1980). Whether this result occurs depends on how the elderly view stereotypes (Rothbaum, 1984).

There are contradictory findings in the literature concerning how the elderly are affected by existing negative stereotypes (Rothbaum, 1984). Some elderly people view their age group more positively than young adults view their age group (Howard & Rothbart, 1980; Locksley, Ortiz & Hepburn, 1980), while some do not show this "in-group bias" (Sherman, 1977), and view their age group negatively.

Rothbaum (1984) attributes the confusion about how the elderly perceive and are affected by stereotypes to methodological shortcomings. In some studies, only

negative traits are evaluated. Also, there are problems related to sampling of age groups. Rothbaum criticizes selection of subjects from very different settings, which can result in age being confounded with education for example.

Chronological age is actually a poor indicator of social, biological, and psychological age (Neugarten & Hagestad, 1976). Despite this, negative stereotypes based on age are prevalent and affect societal perceptions and expectations of elderly people. They also affect the self-beliefs of the elderly regarding their competency and mastery. Neugarten and Hagestad (1976) say that this lack of confidence may cause the elderly to "exaggerate their inadequacies on cognitive tasks" (p. 98).

Stereotyping and Social Behavior

Research indicates that the elderly accept and internalize stereotypes about themselves (Kausler, 1982; Tuckman & Lorge, 1953). However, the stereotyped attitudes the elderly have about their age group differ due to many factors. Urban elderly have a more positive attitude about being elderly than rural elderly (Youman, 1977). The very old, those in poor health and those socially isolated have a poorer attitude. People of lower SES consider old age to begin earlier (about 60 years) than people of higher SES (about 70 years) (Linn & Hunter, 1979). Whereas aging was

at one time considered to affect all elderly people negatively, now it is realized that great variability exists in how the elderly adapt, and in how they perceive their age group.

Rodin and Langer (1980) reported on how negative stereotypes can lead to diminished performance in the elderly. They explained that negative stereotypes lead to lowered self-esteem and reduced feelings of control over environment. The loss of self-esteem and control results in overestimation of any reduction in capacity. The elderly person comes to believe his ability is less than it is. Over-attribution to aging and negative stereotypes work together to decrease self-esteem and performance. Rodin and Langer (1980) believe that this sequence of events results in "lack of motivation to engage in a variety of behaviors, rather than an inability to do so. Over time, and with disuse, the abilities themselves may also decline" (p. 24).

Questionnaire vs Person-Perception Studies

Botwinick (1984) made the observation that recent studies on stereotyping of the elderly are more "meaningful and realistic" than those done prior to 1980 (p. 25). He was referring to person-perception studies which involve attribution of certain characteristics to a hypothetical person in a story (a stimulus person). In contrast to

questionnaire studies done prior to 1980 which showed negative age based stereotyping, these recent studies do not always show stereotyping, or if they do, they show more "subtle" stereotyping. Botwinick (1984) stated that the method used in these recent studies, which is more realistic than questionnaires, is the reason why they show stereotyped attitudes to be less prevalent. When coupled with attitude questionnaires, the questionnaires still indicate negative stereotypes, while the attribution portion showed more positive attitudes.

There are a number of recent studies in the stereotyping literature using a "person-perception" methodology. First, two studies were done based on hypothetical job interviews (Connor, Walsh, Litzelman, & Alvarez, 1978; Locke-Connor & Walsh, 1980). Connor et al. (1978) described the applicant as either elderly or young, and either hired or not hired. Attributional judgements were made regarding ability in the interview, motivation, potential value as an employee and whether the participant would hire the person. Connor et al. (1978) found "there were no differences in the assessment of old and young job applicants" (p. 251). The unsuccessful applicants of either age were rated less favourably. Despite the finding regarding age, the participants still reacted to the situation of rejection for a job. The researchers concluded that since more elderly people than young people

are rejected in hiring situations due to poor health, poverty or physical unattractiveness, the results still imply negative stereotyping of the elderly.

Connor et al. (1978) also gave their participants an attitude scale and found that they did not rate people in general (e.g., a group) the same as an individual person (e.g., Sanders in the stimulus person story). Negative stereotyping was more severe for people in general than a particular person. This was also found by Weinberger and Millham (1975). The present study, which concerns attributions made about a particular elderly person (Sanders), may show less evidence of stereotyping than other studies considering elderly people as a group.

The Locke-Connor and Walsh study (1980) also found that older age and demographic factors were given as the reasons for the poor quality of the elderly applicant who was not hired. When a younger applicant was not hired, failure was attributed to lack of effort or ability. That is, older age was seen as a basis for not getting the job, but not younger age.

Reno (1979) found only a subtle age bias when college students estimated the probability that a young (25 year old) or elderly (63 year old) man would succeed in college. They also estimated his average and causes for success and failure. The estimations differed from the attributions.

Regarding the achievement attributions, Reno (1979) found that failure on the part of the elderly man was attributed to lack of ability and task difficulty, while failure by the young was attributed to lack of effort. For the estimations, there were no differences for the elderly or young man. Reno's (1979) results suggest a subtle bias--the young could succeed if they desired to, the elderly do not succeed because of lack of ability and task difficulty.

Drevenstedt (1981) replicated the Walsh and Connor (1979) study by presenting a newspaper article on gardening as well as biographical sketches. Drevenstedt did not find the old and young stimulus persons were responded to differently, nor did she find a significant interaction between age and sex. She attributed this to the "role appropriateness" of the woman in the article. According to Drevenstedt, sex bias occurs mainly when the sex role is seen as inappropriate to the task. The implication is that age bias would be seen mainly when the role is "age-inappropriate".

Crockett, Press and Osterkamp (1979) also did a study in which a hypothetical 36 year old widow was compared to a hypothetical 76 year old widow. Crockett et al. (1979) found that the elderly person, who was portrayed as not conforming to the norms of her age group was viewed by college students more favourably than the younger person who behaved similarly to the elderly woman.

The conclusion from the Crockett et al. study (1979) was similar to that of Connor et al. (1978) who also made an observation that when the elderly behave like the young, they are positively regarded. The implication is that when the elderly do not behave like the young, they may be stereotyped negatively.

As previously mentioned, Botwinick (1984) commented that older questionnaire studies showed stronger age stereotyping than more recent attribution studies because people may be more biased toward a group than an individual. Also, questionnaires may make people appear negative in attitude since researchers often present negative statements and a fixed alternative scale for responses (Botwinick, 1984). The subtle age bias apparent in attribution studies may be more difficult to counteract than blatant bias because it is based not on chronological age, but on traits common to the elderly but not to the young.

It is apparent from the literature on stereotyping that negative stereotyping of the elderly continues to be a problem in the 1980's. Besides the obvious and well known biases about the elderly, there exist more subtle and difficult to detect biases. The elderly perceive these stereotypes differently depending on personal and situational factors. Although some elderly may hold less negatively stereotyped views of their age group than

others, it would appear safe to say that negative stereotyping affects all elderly people to some degree.

With regard to stereotyping and intellectual behavior, the research reviewed in both areas indicates the existence of outdated and inaccurate stereotypes of the achievement ability of elderly people.

Achievement Attributions

The majority of attributional research has been done with young adult (mostly college age) subjects. There has been very little study of the achievement attributions of the elderly. The research on achievement attributions of young adults will first be discussed, followed by that specifically on achievement attributions of the elderly.

Achievement Attributions of Young Adults

The early work of Weiner and associates led to the development of Weiner's attributional model of achievement behavior (Frieze, 1973; Weiner, 1974; Weiner, 1976; Weiner & Kukla, 1970; Weiner et al., 1971). This review will focus on attributional research on young adults by Weiner and associates. The current trends in achievement attribution research will be described, and where applicable, the findings will be related to the achievement attributions of the elderly.

Weiner's model was tested (Frieze & Weiner, 1971) by

giving young adult subjects information in a story about (a) the percentage of success of another person at a task, (b) prior success or failure at similar and different tasks, (c) performance of others at the task. The subjects then attributed the success or failure of the person in the story to ability, effort, task difficulty and luck. The data revealed these main patterns: (a) success was attributed to internal factors, failure to external factors, (b) behavior inconsistent with past performance was attributed to the unstable variables of luck and effort, (c) the degree of prior success and failure was attributed to high or low ability, and (d) in outcomes where others performed equally well or poorly, achievement was attributed to task difficulty.

Research has indicated that the tendency to accept responsibility for success and failure is related to personality and situational factors (Brown, 1984; Weiner, 1983; Zuckerman, 1979). Zuckerman (1979) discussed Weiner's locus dimension which is related to self-esteem (having a favourable opinion of oneself). People attempt to enhance or protect their self-esteem by taking credit for success (internal attributions) and denying responsibility for failure (external attributions).

People with high self-esteem will engage in more self-serving attributions than people with low self-esteem

(Heider, 1958). Also, people with high achievement motivation make internal attributions for success and external attributions for failure (Weiner & Kukla, 1970).

The preceding discussion is significant for this study, because the young participants could be considered relatively high in self-esteem and achievement motivation by virtue of being college students. They should show the predicted "self-serving bias" in their achievement attributions. On the other hand, the elderly participants may not show a self-serving bias in their attributions, particularly if they hold negative stereotypes about the ability of their age group (Banziger & Brevenstedt, 1982; Deaux, 1976). If the elderly attribute success to external factors and failure to internal factors, this will indicate lack of self-serving bias and possibly low self-esteem regarding achievement ability.

While the locus dimension is related to self-esteem, the stability dimension is related to changes in expectancy of success and failure (Weiner, 1983). Attribution of failure to a stable cause such as a lack of ability or age leads to a higher expectancy of future failure than does attribution to an unstable cause such as bad luck. Causal stability also influences affective reactions in failure situations: feelings of hopelessness arise when the future is anticipated to be the same as the present (Weiner,

1983). "Affective reactions and affective anticipations, in conjunction with expectancy of success, are assumed to influence a variety of motivational behaviors, ... including persistence of behavior, choice, and approach or avoidance of tasks and other people" (Weiner, 1983, p. 531).

The most recent thrust in achievement attribution research has been toward the study of these affective consequences of attributions. According to Brown and Weiner (1984), causal attributions are linked to affective reactions (feelings) in quite specific and unique ways. "Attributions also tap basic values and therefore influence both the evaluation of others as well as self-esteem" (Brown & Weiner, 1984, p. 158).

The study of affective consequences of achievement attributions has been marked by disagreements among researchers regarding interpretation (Brown & Weiner, 1984; Covington & Omelich, 1984). However, there is a basic agreement among those in the field that affective consequences need more study, and will lead to better understanding of achievement behavior.

The main causal attributions which have been studied with regard to affective consequences are ability and effort, both of which are internal in locus (Brown & Weiner, 1984). Attribution of failure to ability is considered less desirable than attribution of failure to

effort as effort is changeable (unstable) whereas ability is unchanging (stable). Ascription of failure to effort is seen as giving rise to feelings of guilt (due to lack of effort), while ascription to ability gives rise to feelings of humiliation (Brown & Weiner, 1984).

The affective consequences of achievement attributions are considered important in influencing achievement behavior. This study will not analyze this aspect of Weiner's attributional theory directly, however the topic does have implications for the achievement motivation of all age groups.

Achievement Attributions of the Elderly

Research on intellectual aging has mainly focused on objective measures of performance. Attributions for achievement provide a subjective measure of performance which is also very significant in understanding the intellectual behavior of the elderly (Lachman, 1983; Lachman & Jelalian, 1984; Zarit, Cole, & Guider, 1981).

There have been a number of studies done in which young people make attributions about the achievement of elderly people: Reno, 1979; Sherman, Gold and Shuman, 1978; Lachman and Jelalian, 1984; Banziger and Drevenstedt, 1982; Locke-Connor and Walsh, 1980. There are four studies in which attributions were made by the elderly themselves: Banziger and Drevenstedt (1982), Lachman and Jelalian

(1984), Lachman and McArthur (1986), and Prohaska, Parham and Teitelman (1984). As in this study, these studies involved young and elderly participants making achievement attributions about themselves or someone in their own age group.

Locke-Connor and Walsh (1980) did not find age related to sex in the attributions made by college students. They attributed this to the fact that studies using ambiguous situations (e.g., Walsh & Connor, 1979) more often bring out stereotypic responses whereas their study was not ambiguous. Weinberger and Millham (1975), on the other hand, did find age related to sex. They found that attributions indicated that older women contributed less to society than young women, and old and young men contributed similarly. Walsh and Connor (1979) also reported a relationship between age and sex in a study on college students' evaluations of essays by young and elderly authors. The essays by young women and old men were devalued, and the researchers suggested this was due to "subtle prejudice" (Walsh & Connor, 1979, p. 561).

There are very few studies of achievement attributions of the elderly (Banziger & Drevenstedt, 1982; Lachman & Jelalian, 1984). Some of the findings in these studies give reason for concern, since the attributional pattern shown by the elderly showed lack of achievement motivation (Banziger & Drevenstedt, 1982; Rodin & Langer, 1980), and

an association with learned helplessness (Abramson, Seligman, & Teasdale, 1978). Others were more positive (Lachman & Jelalian, 1984; Lachman & McArthur, 1986).

In the Banziger and Drevenstedt (1982) study, young and elderly female participants read stories in which the independent variables of age of stimulus person, performance history, and outcome were manipulated. The outcome experienced by the stimulus person was either passing or failing a drivers licence test. Unlike the present study, in the Banziger and Drevenstedt (1982) study, the young and elderly participants made attributions about a person in the other age group as well as their own. The young participants attributed success of the young person to internal factors and failure to external factors, that is they showed the expected self-serving effect (Zuckerman, 1979). The elderly participants attributed the success of the elderly stimulus person to external factors, and failure to internal factors, the opposite of the young and not self-serving.

Banziger and Drevenstedt (1982) concluded that age was used as a salient causal attribution in explaining the failure of young and elderly stimulus persons. Unexpectedly, age (classified as internal) was also strongly endorsed for the success of the young person, rather than the expected attribution of ability. The study found the interaction effect of stimulus age by outcome to

be significant only for the age attribution, not for any of the Weiner model attributions. A major conclusion of Banziger and Drevenstedt's (1982) study was that "knowledge of the age of a stimulus person does sensitize observers to the causal attribution of old age when an older person is seen as failing at a task, and of use when a younger person is seen as succeeding" (p. 100). A limitation of the study was that the exact meaning of age as an achievement attribution in the Weiner model was unclear.

In a later review article on age as an attribution, Banziger and Drevenstedt (1984) discussed the use of age as a variable in achievement attributions, and the use of Weiner's model in aging research. They concluded that for older stimulus persons, "ascription to chronological age mediates attributions for failures and that attributions of achievements are highly task specific" (Banziger & Drevenstedt, 1984, p. 97). By this they meant age is a commonly used attribution for the failure of an older person.

Whether ascription to age occurs depends on the task in question--some tasks are viewed as more difficult for the elderly than others. Banziger and Drevenstedt (1984) recommended varying the tasks of the stimulus person to include intellectual and practical skills. They also recommended varying the gender of the stimulus person and of the participants. Banziger and Drevenstedt (1984)

commented that "it would be interesting for future research to explore whether highly educated and/or verbal older judges tend to weigh the same factors in reaching attributional decisions as do young college-educated subjects" (p. 101). The present study addresses this issue because the elderly participants are better educated than most elderly people.

Age as an attribution was also discussed by Rodin and Langer (1980) who inferred that over-attribution to age decreases self-esteem and diminishes performance. However, nowhere in the literature has attribution to one's age been directly examined (Banziger & Drevenstedt, 1984). For this reason research on age as an attribution is very important because of the far reaching implications of saying age is a reason for behavior. "An ascription of failure to the performer's age might be hypothesized to reflect not only perceived lack of ability, but perhaps other negative connotations of old age, the perceptions varying as a function of specific task demands" (Banziger & Drevenstedt, 1984, p. 99).

The Lachman and Jelalian study (1984) concerned predictions and attributions of one's own performance on intelligence tests by college students and elderly people. The participants therefore made self-attributions, rather than other-attributions. The researchers noted that data from other elderly attribution research could not

generalize to their study, since the two types of attributions, self- and other-, may differ (Watson, 1982).

The study found that both young and elderly participants were more likely to attribute success to ability (internal-stable) and failure to task difficulty (external-stable). There were no gender differences in attributions within age groups. The findings regarding the attributions of the college students were consistent with previous findings (e.g. Banziger & Drevenstedt, 1982) but the attributions of the elderly were the opposite to Banziger and Drevenstedt's (1982).

Prohaska, Parham and Teitelman (1984) used the contextualistic approach to examine age differences in attributions for test performance and the effect these differences have on later cognitive performance. Young and elderly participants were exposed to noncontingent failure (unsolvable test items) and told that their failure was due to ability, effort, or no cause. One group received no feedback. They were then given a solvable test, and their success expectations and performances were compared. In general, the elderly showed lower success expectations and poorer performances than the young, even when given no cause for their previous failure. The young showed better performances when given no cause for previous failure, whereas the elderly showed deficits. The researchers suggested that poorer performance of the elderly may be due

to their attributional style, and expectations of failure, which agreed with Reno (1979).

Lachman and McArthur (1986) studied the attributions of 81 young and elderly participants grouped into 27 same sexed and aged triads. The participants made self-attributions, other-attributions, and other age group attributions for 24 items on a questionnaire. The items were grouped into the three domains of cognitive, physical, and social.

"When attributions for the same performance by young and elderly adults were compared, the results presented an unflattering view of the elderly, similar to the pattern in previous research" (Lachman & McArthur, 1986, p. 127). However, a more favourable situation was apparent when the elderly's attributions for good versus poor performance by their own age group were compared; they were more likely to receive credit for success than blame for failure. As a result of this finding, Lachman and McArthur (1986) questioned the largely "negative view" of the elderly in much of the attribution research. The conclusions of Lachman and McArthur are important to this study because of the similarities. The young and elderly participants were similar in education level, and they made attributions about others in their own age group.

As has been seen in this review, there are strengths and weaknesses in research on aging using an attributional

approach. Since many of the studies reviewed, as well as this study, use an attributional approach, these strengths and weaknesses will be discussed.

One strength of attributional research is that it does not generate defensiveness on the part of the participants (Frieze, 1984). Their attitudes become apparent in the types of attributions they make to explain others' performances.

With regard to the elderly, an attributional perspective can help clarify their reactions to the successes and failures of others. Often, success by an elderly person is seen as due to special qualities in that person. In other words, the successful individual succeeds despite his/her age (Frieze, 1984).

Hanusa (1984) points out that care must be taken in applying information gained from laboratory experiments to "real life issues". She cautions that attribution theory research was developed with data from college students and may not be applicable to other populations. Hanusa (1984) had limited success using an attributional approach in an intervention program aimed at changing perceptions of control and competence of institutionalized elderly people. Although her study was not successful in using an attributional perspective, she admits that it is useful in other settings.

The most fruitful applications of attribution theory

have generally used the Weiner model (Frieze, Bar-Tal, & Carroll, 1979). However, there are methodological issues related to asking people to make attributions about success and failure (Frieze, 1984). For example, the list of causal attributions should be relevant to the participant's concerns. Also, the use of strictly open-ended responses in attribution research creates problems of statistical analysis and difficulty with coding (Frieze, 1984).

The preceding review has pointed out the usefulness of attributional research in understanding the role of stereotyping in achievement attributions of young and elderly adults. This study adds to the small number of such studies.

Conclusions

Three areas of importance to this study were examined in the literature review: aging and intelligence, stereotyping of the elderly, and achievement attributions of young and elderly adults. The significant findings in the literature can be summarized as (a) aging does not necessarily mean intellectual decline, (b) prevalent negative stereotypes of the elderly imply universal intellectual decline with aging and (c) achievement attributions of the elderly may be used as an indication of stereotypes.

The value of indirect or person-perception studies of

stereotyping of the elderly has been demonstrated in the studies reviewed. They can be used to reveal the subtle age bias present in society which may be more difficult to detect than blatant bias. These subtle biases may affect the behavior of the elderly as well as obvious biases, as research shows that the elderly internalize stereotypes which are around them.

Although there has been considerable research on aging and intelligence and stereotyping of the elderly, there has been little research on the attributions of the elderly, and particularly achievement attributions. The few studies that have been done have problems of small sample size, varying stimulus stories to be evaluated, and little literature to which to refer. Also, the classification of age as an attribution needs to be clarified. This study is therefore a step toward the development of a more comprehensive literature concerning attributions of the elderly.

Weiner's attributional model of achievement behavior is used to test whether young and elderly adults make different achievement attributions after reading a story about a person in their age group (Sanders). Sanders experiences either success or failure at an achievement task (university entrance tests). Nine attributions for achievement are evaluated by the participants after they read the story. These are the dependent variables.

These attributions/variables are: (a) Admission Personnel's Attitude, (b) Other Applicants' Ability, (c) Sanders' Ability, (d) Sanders' Attitude Toward Tests, (e) Sanders' Effort, (f) Task Ease/Difficulty, (g) Sanders' Age, (h) Sanders' Luck, (i) Sanders' Gender.

Eight of these attributions can be placed in Weiner's classifications: (c) (i.e., Sander's ability) and (i) are internal-stable, (a) and (h) are external-unstable, (c) and (f) are external-stable, and (d) and (e) are internal-unstable. Age (g) cannot be confidently placed in the classifications (Green, 1984) as disagreement exists as to how it should be classified.

The two independent variables have different levels. Age group has two levels: young and elderly. Outcome (Sanders' experience in the story) has two levels: success and failure.

On the basis of the findings in the preceding literature review that, unlike young adults, elderly adults are affected by negative stereotypes of their intellectual ability, it is predicted that evidence of these stereotypes will be found in their achievement attributions. Further, it is predicted that these negative stereotypes held by the elderly participants will be revealed by a non-self-serving style of achievement attributions. In other words, the elderly are hypothesized to attribute success externally, and failure internally.

On the other hand, the young participants are not predicted to show stereotyped attitudes. They are predicted to have a self-serving style of achievement attributions, or to attribute success internally and failure externally.

Since it is hypothesized that the two age groups will attribute differently depending on the outcome (success or failure), it is the interaction effects of age group and outcome on each of the nine attributions which were of interest to this study.

The research hypotheses tested are that there will be an interaction effect of age group and outcome on each of the achievement attribution scores as follows:

1. The elderly will attribute failure more to Sanders' age than success, whereas the young will not attribute failure more to Sanders' age than success.

2. The elderly will attribute failure more to Sanders' ability than success, whereas the young will attribute success more to Sanders' ability than failure.

3. Attribution to Sanders' effort and Sanders' attitude will show the same pattern as attribution to Sanders' ability as stated in number 2.

4. The elderly will attribute success more to Sanders' luck, task ease/difficulty, and the admission personnel's attitude, than failure; whereas the young will

attribute failure more to each of these three variables than success.

5. The elderly will attribute failure more to Sanders' gender than success, whereas the young will attribute success more to Sanders' gender than failure.

CHAPTER FOUR

Research Methods

Sample

The sample for this study consisted of 85 university students 18-25 years of age (mean age 20 years), and 93 elderly adults 60-75 years of age (mean age 70 years). Ninety-two percent of the participants were in good or excellent health as indicated by a self-reported health rating. The other eight percent reported fair health.

There was no difference between the young and elderly groups in terms of the number of years of education, but the young group's number of years of education should increase in the future, unlike the elderly's. The elderly participants were superior educationally to 84.6 percent of elderly Canadians and were therefore a select group (Statistics Canada 1981, 1984). More importantly, within each age group, the two treatment groups were very similar. The means for these treatment groups for both ages ranged from 12.20 to 12.48 years of education. All were well within one standard deviation of one another. The participants were assigned to treatment groups by randomization (Kidder & Judd, 1986), so internal validity was high.

The elderly volunteers learned of the opportunity to

participate in the study at Spring Session for Seniors at the University of Alberta, or through an article in the Edmonton Examiner newspaper. The young volunteers were contacted through the University of Alberta Department of Psychology subject pool. The university students were a good comparison group since they, like the elderly, were also among the best educated in their population, by virtue of having been accepted into university.

The elderly participants received $4.00 to cover their transportation expenses. The young received credit toward their psychology course for participating, and needed to answer exam questions pertaining to the study.

Materials

The materials for the study were all administered through a paper and pencil method in one packet. This study was a secondary analysis of part of the data from a larger study (Hurlbut, 1988).

Attribution Task

The attribution task consisted of reading a one page story about a person who decided to return to school. The participants read only the story that matched their own gender and age group. For instance, a 20 year old male read only about Raymond Sanders who was 20 years old, while a 70 year old female read only about Catherine Sanders who

was 65 years old.

The person in the story wanted to register for university courses, and either passed or failed ability tests required prior to university admission. (See Appendix B). In all there were eight variations in the stimulus person story, as it varied in terms of: (a) story outcome-passing in the upper 10% or failing in the lower 10%, (b) others' reactions-being encouraged or discouraged to attend university, (c) age group-the stimulus person was either a university student or an elderly person, and (d) gender-the stimulus person was a female (Catherine Sanders) or a male (Raymond Sanders). Since the participants read only about someone of their own gender and age, gender was not a variable in this study. Similarly, age also was not a variable. Others' reactions was used in the larger study (Hurlbut, 1988) of which this study was a part, but not in this study. Because of this, there were only two story treatments from the outcome variations of (a) success, and (b) failure.

The stories were followed by nine attributional statements which the participants rated as to their potential cause for the stimulus person's performance on the tests (see Appendix B). For example, one possible cause was Sanders' ability. A choice between five alternatives was used for the rating. By circling the number 1 beside the attribution "his/her ability", the

participant indicated that ability was "a very unlikely cause" for Sander's performance. Likewise, circling the number 5 indicated the participant viewed ability as "a very likely cause" for Sander's performance, and circling 3 indicated ability was "a possible cause".

Demographic Questionnaires

Two demographic questionnaires, one for the elderly and one for the university students, were used to gather background information such as the participant's age and health condition (see Appendix C).

Procedures

The participants attended one session in groups of two to ten. The sessions were subject-paced, approximately two hours long for elderly participants and one and one-half hours long for young participants. All sessions were held at the University of Alberta.

The sessions for the elderly and young participants were held separately and followed a similar format, with the exception that the elderly participants had a coffee break. The young participants were offered a break, but none of them wanted one.

The order of procedure was: (a) general introduction followed by signing of informed consent form and results request form, (see Appendix A); (b) completion of four

subscales of the Wechsler memory tests (Wechsler & Stone, 1974, part of the larger study), followed by a break for the elderly; (c) reading of stimulus person (Sanders) story and ranking of attribution statements; (d) completion of metamemory learning tasks (part of the larger study and not used in this study); (e) completion of demographic questionnaires; (f) debriefing of participants; (g) thanking of participants.

The participants could not refer back to materials once they had been completed, with the exception of the attribution task. While the attribution statements about the stimulus person story were being answered, the participants could re-read the story as needed.

All participants were thanked verbally at the end of the session, and where addresses were available, all participants also received a mailed thank-you letter. The participants who requested results received them.

Design

The design for the study was experimental. The two independent variables, age group and outcome, were between subject variables and nominal in measurement. The dependent variables were the nine achievement attribution scores which were ordinally measured by rating five alternatives offered in questions following the stimulus person story. The measures were tested for face validity

and piloted prior to use. The dependent variables were: (a) Sanders' age, (b) Sanders' ability, (c) Sanders' attitude toward tests, (d) Sanders' effort, (e) task ease/difficulty, (f) other applicants' ability, (g) Sanders' luck, (h) admission personnel's attitude, and (i) Sanders' gender.

Data Analysis

Initially, it was planned that the nine attribution questions would be grouped according to Weiner's four classifications for statistical analysis. This meant that (c) Sanders' ability and (i) Sanders' gender would have been internal-stable, (a) admission personnel's attitude and (h) Sanders' luck would have been external-unstable, (b) other applicants' ability and (f) task ease/difficulty would have been external-stable, and (d) Sanders' attitude toward tests and (e) Sanders' effort would have been internal-unstable. Age was to be analyzed separately due to classification problems.

However, pairwise reliability tests on the attribution questions grouped in this manner indicated low reliabilities for three of the four pairs (see Appendix D). Only the two internal-unstable items were reliably related ($r = .68$). It was decided that the items should not be grouped. Instead, they were analyzed as nine separate variables.

A multivariate analysis of variance (MANOVA) was used to analyze the relationships in the research hypotheses

stated earlier. Parametric statistics, such as multivariate analysis of variance, are more powerful than non-parametric statistics, and can be used for certain ordinally measured variables such as those herein (Boneau, 1961; Gaito, 1959, 1960, 1980; Johnson & Den Heyer, 1980; Labovitz, 1967, 1970). The nine dependent variables were ordinally measured on scales with rankings which were similar in magnitude change. Using parametric statistics in this situation was justified since they are more sensitive, result in a very small error if used with ordinal data that fits this criteria, are robust to this error, and are power efficient (Labovitz, 1967).

With a total of 178 participants and eight cells, there were adequate participants per cell for sufficient power for multivariate analysis. Descriptive statistics were used for demographic information.

For the significant interaction effects, Tukey's studentized range (HSD) post hoc test was used to determine the simple main effects for some of the significant interactions. Simple main effects tests were done comparing the elderly and young on the success treatment for Sanders' age, Sanders' ability and Sanders' attitude, and on the failure treatment for the same attributions. They were also done comparing success versus failure for the young and elderly groups separately for attribution to Sanders' luck.

CHAPTER FIVE

Results

The research question was tested using the multivariate analysis of variance (MANOVA) program and HSD post hoc procedure of the Statistical Analysis System (SAS Institute Inc., 1982).

Statistical Analyses

The Pillai's Trace test given by the MANOVA program was used to estimate the significance of effects. The 2 X 2 MANOVA with 9 and 178 degrees of freedom revealed a significant main effect for age group, $F = 3.53$, $p = .000$, a significant main effect for outcome, $F = 30.50$, $p = .000$, and a significant age group by outcome interaction, $F = 3.46$, $p = .000$.

The univariate analysis of variance tests associated with each dependent variable are reported in Appendix E. Line graphs for each of the nine attributions showing mean scores for age group and outcome are provided in Appendix F, Figures 1-9.

Of particular interest to this study were the interaction effects for each dependent variable, which showed age group attribution differences for the two outcomes. The main effects were less important. These

Table 3

Mean Scores for the Nine Achievement Attributions

	Elderly		Young	
	Success	Failure	Success	Failure
Sanders' Age	2.69	3.05_a	2.62	2.07_a
Sanders' Ability	4.59	3.47_b	4.71	4.37_b
Sanders' Attitude	4.42_c	2.37_d	3.98_c	2.74_d
Sanders' Effort	4.59	2.37	4.69	2.96
Task ease/ Difficulty	2.33	3.51	2.33	3.51
Others' Ability	2.67	3.49	3.02	3.70
Sanders' Luck	1.47_e	1.64_e	1.74_f	1.19_f
Sanders' Gender	1.53	1.27	1.52	1.19
Adm. Pers. Attitude	2.96	2.82	3.21	2.72

Note: Means with a subscript in common are significantly different from one another at the .05 level, using Tukey's HSD procedure.

data yielded the following significant results in terms of the research question of how age group and outcome relate to each of the nine attributions for achievement.

Attribution to Sanders' age showed a significant main effect for age group $F(1,178) = 10.52$, $p = .000$, and a significant interaction effect, $F(1, 178) = 6.63$, $p = .01$. Simple main effects tests for the age attribution indicated that age was a more important cause of failure for the elderly than for the young, $p < .05$ (see Table 3, for means of each attribution). In the failure situation, the elderly indicated that age was "a possible cause" for an elderly person to fail, whereas the young felt age was "an unlikely cause" for failure of a young person.

It was interesting to note that all of the mean attribution scores for the age attribution were not viewed as a very important factor in achievement situations for either age group.

There was no significant age group difference in their attribution to age in the success situation (see Appendix F, Figure 1). The mean attribution scores for each age group (see Table 3) indicated that both age groups viewed a person's age as "a possible cause" for his success.

Attribution to Sanders' ability showed significant main effects for age group $F(1,178) = 10.09$, $p = .000$ and outcome, $F(1,178) = 32.39$, $p = .000$, and a

significant interaction effect $F(1,178) = 10.25$, $p = .00$. Simple main effects tests for ability showed there was no age difference in the success situation, but in the failure situation, ability was a more important cause for the young than for the elderly, $p < .05$.

Both age groups attributed success to ability. The young participants attributed failure more to lack of ability, than did the elderly (see Appendix F, Figure 2). The mean scores indicated that ability was "a possible cause" for the failure of an elderly person whereas ability was "a likely cause" for the failure of a young person.

Attribution to Sanders' attitude toward tests showed a significant outcome effect, $F(1.78) = 109.42$, $p = .000$, and an Age X Outcome interaction effect $F(1,178) = 9.02$, $p = .000$. The mean attribution scores showed attitude to be "a likely cause" for success in both age groups, and "an unlikely cause" for failure. Simple main effects tests, $p < .05$, showed that the elderly attributed success more to attitude, and failure less to attitude than the young. These effects indicated that for the success situation, attitude was a more important cause for the elderly than the young, and for the failure situation, attitude was a more important cause for the young.

Attribution to Sanders' effort showed only a significant main effect for outcome $F(1,178) = 166.78$, $p = .000$. This meant that the two age groups did not attribute

differently and both age groups attributed differently for the two outcomes (see Appendix F, Figure 4). Effort was viewed by both age groups as "a very likely cause" for success (overall M = 4.64) and as "a possible" to "unlikely" cause for failure (overall M = 2.67).

Attribution to task difficulty showed only a main effect for outcome $F(1,178) = 48.18$, $p = .00$. Both age groups viewed task difficulty as "an unlikely cause" for success ($M = 2.33$), and a "likely cause" ($M = 3.51$) for failure (see Appendix F, Figure 5). However, the mid-scale nature of the mean scores indicated that both groups did not view this as a very important reason for achievement.

Attribution to other applicants' ability was significant only for outcome, $F(1,178) = 16.85$, $p = .000$. The two age groups attributed similarly, with both scoring higher for failure than for success (see Appendix F, Figure 6). The other applicants' ability was therefore seen by both age groups more as a reason for failure than for success.

Attribution to Sanders' luck showed a significant Age x Outcome interaction effect, $F(1,178) = 7.87$, $p = .01$. Simple main effects tests, $p < .05$, showed that the elderly attributed success less to luck than failure whereas the young attributed success more to luck than to failure (see Appendix F, Figure 7). The very low scores for luck indicated that both age groups considered luck as an

unlikely cause for success or failure.

None of the tests on the other attribution scores reached significance. This indicated no main effects for age group or outcome, and no interaction effects for these variables.

CHAPTER SIX

Discussion

The purpose of this study was to investigate how negative stereotypes influenced the achievement attributions of the elderly. Weiner's (1980a) attributional model of achievement motivation was used as the conceptual framework.

The study was one of a few in which elderly participants made achievement attributions about someone else in their own age group. That is, an observer paradigm was used. Many attribution studies of stereotyping have used different methods, such as young participants judging the achievements of the elderly, or elderly participants making self-attributions. The evidence from this study added to the limited knowledge of age stereotypes revealed in achievement attributions of the elderly about the elderly.

It was found that the achievement attributions of the elderly did not differ from those of the young in such a way as to reveal strong negative influences from existing stereotypes. This was a departure from previous attribution research on the elderly (e.g., Banziger & Drevenstedt, 1982; Blank, 1982; Rodin & Langer, 1980) that

showed age differences to be "unflattering" to the elderly. The present study provided a more positive and complimentary picture of the elderly participants, as did the Lachman and Jelalian study (1984) and the data from the Lachman and McArthur study (1986) that compared attributions for success and failure by the elderly.

The data from the present study indicated that for the age attribution, in the failure outcome condition only, the attributions of the elderly significantly differed from those of the young, which implied that the elderly were not affected by age stereotypes in their success attributions. The failure outcome then, was the outcome that revealed age group differences. In this, the study concurred with previous attribution research on the elderly (e.g. Banziger & Drevenstedt, 1982) where failure also was the distinguishing outcome.

In general, the data in this study showed the elderly to have a self-serving attribution style in their attribution to three causes: (a) Sanders' ability, (b) Sanders' attitude toward tests and (c) Sanders' effort. Whether they showed a self-serving style in attribution to age was more difficult to assess, since age could not be confidently placed in Weiner's classifications. If age were classified as internal, age attribution was not self-serving for the elderly. If classified external, age

attribution was self-serving for the elderly. The following discussion considers these four major attributions in turn.

First, attribution to ability, a very important achievement attribution according to Weiner (1974, 1976, 1980a), showed some interesting age group differences. The young attributed failure and success fairly equally to ability and the elderly showed more of a difference in their success and failure ability attributions. The elderly's lower mean score for ability in the failure situation, indicated that they showed a self-serving attributional pattern, more so than did the young.

Both age groups made predominantly internal attributions for success, and external attributions for failure, another indicator of a "self-serving effect" (Zuckerman, 1979) in their ability attribution. This tendency to accept responsibility for success (internal attributions) and deny responsibility for failure (external attributions) has been related to positive self-esteem of adults (Heider, 1958). Heider's (1958) writings can be generalized to the elderly participants in this study who in their self-serving attributional style, showed high self-esteem in their ability attributions. This was particularly impressive since the young (university student) participants were expected to have high

self-esteem in academic areas, and the elderly participants in this study showed even greater self-esteem.

From the perspective of the Weiner model (1980a), before the elderly participants attributed success to ability, they considered the consistency of performance of other elderly adults. In other words, they considered whether Sanders would be expected to consistently succeed or fail. They perceived that the success of Sanders was consistent with achievement of other elderly persons, a positive result regarding the elderly. As was expected, the young participants felt similarly about the success of the young stimulus person.

Lachman and Jelalian (1984), who studied self-attributions (i.e., did not use an observer paradigm), found that the elderly and young participants made similar attributions as those found herein. Failure was attributed externally (task difficulty) and success internally (ability). Their results showed both age groups to have a "self-serving attributional style" (Zuckerman, 1979). Lachman and Jelalian (1984) said their results were "in sharp contrast to previous findings using the observer paradigm" (p. 582). In the present study which used an observer paradigm, the elderly also showed a self-serving attributional style in their ability attribution.

In attribution to Sanders' attitude toward tests (internal-unstable), the two age groups did not differ

greatly; both age groups showed a self-serving attributional pattern. However, the elderly showed more of a self-serving trend than the young by attributing success to an internal cause (attitude) moreso than did the young. Also, the elderly attributed failure less to an internal cause than did the young. The elderly data for Sanders' attitude agreed with the elderly data for Sanders' ability (both internal attributions) in that both were self-serving. For the young, attribution to Sanders' attitude showed the expected self-serving pattern, moreso than they did for Sanders' ability.

In Weiner's model (Weiner, 1980a), attribution of failure to an unstable attribution (attitude) was considered more favourable than to a stable attribution (ability) since this indicated less expectation of future failure, or more hope for success. The results for attribution to attitude toward tests then, were complimentary to both age groups, particularly the elderly.

In attribution to effort (internal-unstable), both age groups showed a self-serving attributional style. The predicted result of the elderly attributing success less internally than the young did not occur. Both age groups strongly attributed failure to lack of effort. As with ability and attitude, also internal, the elderly scored effort very similarly to how the young scored it for both outcomes. Again, the elderly attributed failure less to an

internal attribution than did the young.

The findings for attribution to age showed that neither age group felt that age was "a likely cause" for achievement (success or failure). There was almost no age group difference in age attribution for success. The difference between the age groups was only apparent in the failure outcome where the elderly had the higher mean score for failure. In other words, the elderly were more likely to attribute failure to age ("a possible cause") than the young ("an unlikely cause"). Although this showed the elderly to attribute failure more to age than the young, this result was mediated by the low age attribution means for both age groups. The elderly age attributions for success and failure in this study were more positive than in previous studies (Locke-Connor & Walsh, 1980; Banziger & Drevenstedt, 1982) which predicted that the elderly would consider age "a likely cause" for failure.

Compared to Banziger and Drevenstedt's (1982) study, this study indicated less difference in age attribution between the young and the elderly. In their study, the young participants felt age was not a cause for success or failure of a young person, while the elderly indicated that age was a cause for success or failure of the elderly.

As previously mentioned, age could not confidently be placed in Weiner's dimensions (Green, 1984). In this study, when age was analyzed with the pairs of attributions

in the pairwise reliability test, it reduced the correlations of each of the four classifications (see Appendix D, Table D-1) including the one reliably related classification of internal-stable. Comparison of the graphs of the individual attributions (Appendix F, Figures 1-9), revealed that the age attribution was different from all eight of the others which reinforces how difficult it is to classify attribution of age.

Overall, there was little difference in the attributional patterns of the young and elderly participants for the success outcome for all nine attributions. With regard to the failure outcome, differences between the age groups were favourable to the elderly for ability, attitude and effort and unfavourable for age. The elderly showed a generally self-serving attributional style, which was not predicted. The young also showed a self-serving attributional style, which was predicted. Even in attribution to age, the elderly did not show particularly uncomplimentary results.

The study did not consider the gender of the participants, as other researchers have not found gender differences in achievement attributions within the elderly age group (Drevenstedt, 1981; Lachman & Jelalian, 1984). Also, the scores for attribution to Sanders' gender showed no significant main effects, and were very low. Therefore, elderly and young participants felt gender was a

"very unlikely cause" for achievement. This offers further support for the lack of importance of gender found in the literature on adult achievement attribution.

The purpose of this study was to investigate whether negative stereotypes were evident in the achievement attributions of the elderly. Examination of the attributions made by the elderly compared to those of the young did not show the elderly to be affected by age stereotypes, except possibly in attribution to age. Interpretation of elderly age attribution from the perspective of Weiner's model (1980a) could not be confidently made because of the question of how to classify age.

There were several reasons why the elderly participants did not show a lot of evidence of stereotypical attributional patterns. Ninety-two percent of the elderly participants in this study were in good or excellent health and free of medications related to learning difficulties. They were therefore more likely to hold positive attitudes about their age group than unwell or very old people (Perry & Slemp, 1980).

The elderly participants were also relatively well educated. The majority of the elderly had completed high school and were therefore better educated than many other elderly Albertans who average less than nine years of education (Statistics Canada 1981, 1984).

Considering the mental and physical health of the elderly participants in this study, the complimentary results found in their achievement attributions were understandable. Despite the fact that they were so able a group, they nevertheless showed evidence of stereotyped attitudes in their attribution to age. Although they were not considered to "over-attribute to age", and therefore were not at risk for decreased self-esteem and performance (Rodin & Langer, 1980), the fact that the elderly did differ from the young was important. If these elderly showed some age stereotyping, it could be hypothesized that more evidence of stereotyping would be found in a less select sample.

Another reason for this study showing less evidence of stereotyping than some previous studies, was the fact that attributions were made about a particular elderly person (Sanders). Negative stereotyping has been found to be more severe for people in general than for a particular person (Connor et al., 1978; Weinberger & Millham, 1975), and this may have partially accounted for the minimally stereotyped attitudes of these elderly participants.

There were problems with the use of Weiner's model in this study. Since age as an attribution has not been studied extensively, the meaning of ascription of causation to age cannot be understood fully at this time. Attitudes to old age are "multidimensional" (Rosencrantz & McNevin,

1969) and the meaning of ascription to old age could reflect a number of negative or positive connotations of old age. The study of age as an attribution is just beginning, and further research is needed to define what is meant by it. Also, perhaps age does not fit among the Weiner-defined attributions, and would be better studied not using an achievement motivation model.

The study would have been enhanced by the participants judging the other age group as well as their own for the same achievement situation. The attributions of the young adults about an elderly Sanders would have strengthened the argument that the elderly's attributions about an elderly Sanders indicated stereotyping. For example, if the young and elderly adults both made the same age attributions about the failure of an elderly Sanders, stereotyping would not have been indicated.

The results of this study indicated that for this select sample of elderly adults, the effect of the prevalent negative stereotypes in our society was not apparent in most of their achievement attributions. The implication was that despite the knowledge of stereotypes about their age group, these elderly people did not allow these attitudes to affect their attributions. There may be particular circumstances under which this occurs, such as when an elderly person feels confident due to previous positive experiences (e.g., success in academic

achievement), or when he or she feels the attitude does not apply to him/her. Perhaps attribution to age shows a more negative connotation when someone from another age group is judged rather than the same age group.

Despite the large amount of study on causal attributions over the last 20 years, attributional research on aging is relatively new. This study showed more positive results than most other attribution studies to date. Further research is needed to clarify the relationship of chronological age and other causal attributions in explaining the achievement of older adults.

CHAPTER SEVEN

Practical Implications

The predicted increase in numbers of Albertans over the age of 65 means that educational, research and service programs in every area of home economics should address issues related to aging. It has been stated that home economists have a responsibility to understand and cultivate the potential of individuals of all ages (American Home Economics Association, 1962). The implication of this philosophy is that family life education is one area of home economics which can positively affect the lives of elderly persons in this way.

Negative stereotyping has been found to be a major problem for elderly individuals and their families (Cox, 1984). Carefully designed family life education programs can counteract the negative age based stereotypes held by elderly individuals and those with whom they interact (Arcus, 1987). Positive and encouraging results from recent research, such as those found in this study, can be used to help individuals of all ages recognize that stereotypes can be rejected.

Family life education can be used to improve the self-concept of elderly adults through making them aware of

their own potential for learning, and how their personal myths and realities may inhibit this potential. The self-serving achievement attributions of the elderly participants in this study were proof that the influence of negative stereotypes can be minimized or dispelled by elderly adults. That is, although they likely perceive stereotyped attitudes around them in society, these elderly participants were able to prevent these stereotypes from affecting them.

Family life education for elderly individuals and aging families can dispel these myths which reduce the ability of the elderly to live successful and productive lives. Programs in family life education could help instill in the elderly a value for continued learning and continued adaptation to new situations (American Home Economics Association, 1962; Arcus, 1987). For example, a peer education model could be used to help the elderly recognize stereotypes, reject them, and gain an understanding of the competent elderly adult. A peer education model is recommended since the senior's self-concepts are improved when they interact with older models who perform well (Hurlbut, 1988). Guiding the older persons' attitudes away from stereotypes can increase their potential to live a more fulfilled life.

REFERENCES

Achenbaum, W. A. (1985). Societal perceptions of aging and the aged. In R. H. Binstock & E. Shanas (Eds.), Handbook of aging and the social sciences. New York: Van Nostrand Reinhold Co.

Alberta Senior Citizens Secretariat (1986). Older Albertans - 1986. Edmonton, Alberta: Author.

American Home Economics Association. (1962). Aging: A phase in the life. Author.

Antaki, C. (Ed.). (1981). The psychology of ordinary explanations of social behavior. London: Academic Press Inc.

Antaki, C., & Brewin, C. (1982). Attributions and psychological change: Applications of attributional theories to clinical and education practice. New York: Academic Press Incorporated Limited.

Arcus, M. (1987). A framework for life-span family life education. Family Relations, 36, 5-10.

Atkinson, J. W. (1964). An introduction to motivation. New York: Van Nostrand.

Baltes, P. B. (1986). The psychology of control and aging. Hillsdale, NJ: Erlbaum.

Baltes, P. B., & Schaie, K. W. (1974). The myth of the twilight years. Psychology Today, 40, 35-40.

Baltes, P. B., & Schaie, K. W. (1976). On the plasticity of intelligence in adulthood and old age. American Psychologist, 31, 720-723.

Banziger, G., & Drevenstedt, J. (1982). Achievement attributions by young and old judges as a function of perceived age of stimulus person. Journal of Gerontology, 37, 468-474.

Banziger, G., & Drevenstedt, J. (1984). Age as a variable in achievement attributions: The Weiner model and beyond. Basic and Applied Social Psychology, 5, 97-104.

Bennett, R., & Eckman, J. (1973). Attitudes toward aging: A critical examination of recent literature and implications for future research. In C. Eisdorfer & M. P. Lawton (Eds.), The psychology of adult development and aging (pp. 575-597). Washington, DC: American Psychological Association.

Blank, T. O. (1982). A social psychology of developing adults. New York: Wiley.

Blank, T. O. (1984a). An introduction to a collection of articles on attributions and aging. Basic and Applied Social Psychology, 5, 95-96.

Blank, T. O. (1984b). Meaning and motivation in adult perceptions of causality. Basic and Applied Social Psychology, 5, 111-120.

Boneau, C. A. (1961). A note on measurement scales and

statistical tests. American Psychologist, 16, 260-261.

Botwinick, J. (1977). Intellectual abilities. In J. E. Birren & K. W. Schaie (Eds.), Handbook of the psychology of aging. New York: Van Nostrand.

Botwinick, J. (1984). Person-perception: Stereotyping the elderly. In J. Botiwinick, Aging and behavior (3rd ed.), (pp. 17-37). NY: Springer Publishing Co.

Brommley, D. B. (1966). The psychology of human aging (2nd ed.). London: Penguin.

Brown, J. (1984). Effects of induced mood on causal attributions for success and failure. Motivation and Emotions, 8, 343-353.

Brown, J., & Weiner, B. (1984). Affective consequences of ability versus effort ascriptions: Controversies, resolutions, and quandaries. Journal of Educational Psychology, 76, 146-158.

Butler, R. N. (1975). Psychiatry and the elderly: An overview. The American Journal of Psychiatry, 132, 893-900.

Butler, R. N. (1982). Aging and mental health: Positive psychosocial and biomedical approaches. C. V. Mosby Company.

Connor, C., Walsh, R. P., Litzelman, D., & Alvarez, M. (1978). Evaluation of job applicants: The effects of age versus success. Journal of Gerontology, 33, 246-252.

Covington, M. V., & Omelich, C. L. (1984). Controversies or consistencies? A reply to Brown and Weiner. Journal of Educational Psychology, 76, 159-168.

Cox, H. (1984). Later life: The realities of aging. Englewood Cliffs, NJ: Prentice-Hall Inc.

Crockett, W. H., Press, A. N. & Osterkamp, M. (1979). The effect of deviations from stereotyped expectations upon attitudes toward older persons. Journal of Gerontology, 34, 368-374.

Denney, N. W. (1982). Aging and cognitive changes. In B. B. Wolman (Ed.), Handbook of developmental psychology. Englewood Cliffs, NJ: Prentice-Hall.

Deaux, K. (1976). Sex: A perspective on the attribution process. In J. H. Harvey, W. J. Ickes, & R. F. Kidd (Eds.), New directions in attribution research (Vol. 1). Hillsdale NJ: Lawrence Erlbaum Associates.

Drevenstedt, J. (1981). Age bias in the evaluation of achievement: What determines? Journal of Gerontology, 36, 453-454.

Englemann, M. (1984). Older persons in Alberta: Their use of programs and services. Edmonton: Alberta Social Services and Community Health.

Fitch, G. (1970). Effects of self-esteem, perceived performance, and choice on causal attributions. Journal of Personality and Social Psychology, 16, 311-315.

Frieze, I. (1973). Studies of information processing and the attributional process. Unpublished doctoral dissertation, University of California, Los Angeles.

Frieze, I. H. (1984). Causal attributions for the performances of the elderly: Comments from an attributional theorist. Basic and Applied Social Psychology, 5, 127-130.

Frieze, I. H., & Bar-Tal, D. (1979). Attribution theory: Past and present. In I. H. Frieze, D. Bar-Tal & J. S. Carroll (Eds.), New approaches to social problems (pp. 1-20). San Francisco: Jossey-Bass Publishers.

Frieze, I. H., Bar-Tal, D., & Carroll, J. S. (Eds.) (1979). New approaches to social problems: Applications of attribution theory. San Francisco: Jossey-Bass Inc.

Frieze, I., & Weiner, B. (1971). Cue utilization and attributional judgements for success and failure. Journal of Personality, 39, 591-606.

Gaito, J. (1959). Non-parametric methods in psychological research. Psychological Reports, 5, 115-125.

Gaito, J. (1960). Scale classification and statistics. Psychological Review, 67, 277-278.

Gaito, J. (1980). Measurement scales and statistics: Resurgence of an old misconception. Psychological Review, 87, 564-567.

Green, S. K. (1984). Attitudes and perceptions about the elderly: Current and future perspectives. International Journal of Aging and Human Development, 13, 99-119.

Gribbin, K., Schaie, K. W., & Parham, I. A. (1980). Complexity of lifestyle and maintenance of intellectual abilities. Journal of Social Issues, 36, 47-61.

Hanusa, B. H. (1984). Attribution theory: How useful for understanding aged individuals' responses to their environments? Basic and Applied Social Psychology, 5, 121-126.

Harvey, J. H., & Weary, G. (1981). Perspectives on attributional processes. Dubuque, IA: Wm. C. Brown Company Publishers.

Heider, F. (1946). Attitudes and cognitive organization. The Journal of Psychology, 21, 107-112.

Heider, F. (1958). The psychology of interpersonal relations. New York: John Wiley and Sons.

Hertzog, C., Schaie, K. W., & Gribbin, K., (1978). Cardiovascular disease and changes in intellectual functioning from middle to old age. Journal of Gerontology, 33, 872-883.

Horn, J. L. (1976). Human abilities: A review of research and theory in the early 1970's. Annual Review of Psychology, 27, 437-485.

Horn, J. L., & Donaldson, G. (1976). On the myth of

intellectual decline in adulthood. American Psychologist, 31, 701-719.

Horn, J. L., & Donaldson, G. (1977). Faith is not enough: A response to the Baltes-Schaie claim that intelligence will not wane. American Psychologist, 32, 369-373.

Howard, J., & Rothbart, M. (1980). Social categorization and memory for ingroup and outgroup behavior. Journal of Personality and Social Psychology, 62, 44-54.

Hurlbut, N. (1988). The influence of vicarious experience on self efficacy of senior adults. Canadian Home Economics Journal: Special Research Section on Aging Canada.

Jarvik, L. F., & Blum, J. E. (1971). Cognitive declines as predictors of mortality in discordant twin pairs - a twenty year longitudinal study. In E. Palmore & F. C. Jeffers (Eds.), Prediction of life span. Lexington, MA: Heath Lexington Books.

Johnson, R. W., & Den Heyer, K. (1980). On the enduring untruth about measurement and parametric statistics. Canadian Psychology, 21, 134-135.

Jones, H. E. (1959). Intelligence and problem solving. In J. E. Birren (Ed.), Handbook of aging and the individual. Chicago: The University of Chicago Press.

Jones, E. E., & Davis, K. E. (1965). Advances in experimental social psychology, Vol. 2. New York: Academic Press.

Jones, E. E., Kanouse, D. E., Kelley, H. H., Nisbett, R. E., Valins, S., & Weiner, B. (1972). Attribution: Perceiving the causes of behavior. Morristown, NJ: General Learning Press.

Jones, E. E., & McGillis, D. (1976). Correspondent inferences and the attribution cube: A comparative reappraisal. In J. Harvey, W. Ickes & R. Kidd (Eds.), New directions in attribution research, Vol. 1 (pp. 389-420). Hillsdale, NJ: Lawrence Erlbaum Associates.

Kausler, D. H. (1982). Experimental psychology and human aging. New York: John Wiley & Sons.

Kelley, H. H. (1967). Attribution theory in social psychology. In D. Levine (Ed.), Nebraska symposium on motivation (Vol. 15). Lincoln: University of Nebraska Press.

Kelley, H. H. (1973). The processes of causal attribution. American Psychologist, 28, 107-128.

Kelley, H. H. (1978). A conversation with Edward E. Jones and Harold E. Kelley. In J. H. Harvey, W. J. Ickes and R. F. Kidd (Eds.), New directions in attribution research. NJ: Erlbaum Associates.

Kelley, H. H. & Michela, J. L. (1980). Attribution theory and research. Annual Review of Psychology, 31, 457-501.

Kerlinger, F. N. (1986). Foundations of behavioral research. NY: Holt, Rinehart and Winston.

Kidder, L. H. & Judd, C. M. (1986). Research methods in

social relations. New York: Holt, Rinehart and Winston.

Kuip[illegible] N. A. (1978). Depression and causal attributions for success and failure. Journal of Personality and Social Psychology, 21, 236-246.

Labouvie-Vief, G. (1982). Individual time, social time, and intellectual aging. In T. K. Hareven and K. J. Adams (Eds.), Aging and life course transitions: An interdisciplinary perspective. New York: The Guilford Press.

Labouvie-Vief, G. (1985). Intelligence and cognition. In R. H. Binstock & E. Shanas (Eds.), Handbook of aging and the social sciences (pp. 500-530). New York: Van Nostrand Reinhold.

Labouvie-Vief, G., & Chandler, M. J. (1978). Cognitive development and life-span developmental theory: Idealistic versus contextual perspectives. In P. B. Baltes (Ed.), Life-span development and behavior. New York: Academic Press.

Labovitz, S. (1967). Some observations on measurement and statistics. Social Forces, 46, 151-160.

Labovitz, S. (1970). The assignment of numbers to rank order categories. American Sociological Review, 35, 515-524.

Lachman, M. E. (1983). Perceptions of intellectual aging: Antecedent or consequence of intellectual functioning?

Developmental Psychology, 19, 482-498.

Lachman, M. E., & McArthur, L. Z. (1986). Adulthood age differences in causal attributions for cognitive, physical and social performance. Psychology and Aging, 1, 127-132.

Lachman, M. E., & Jelalian, E. (1984). Self-efficacy and attributions for intellectual performance in young and elderly adults. Journal of Gerontology, 39, 577-582.

Levin, J., & Levin, W. C. (1980). Ageism: Prejudice and discrimination against the elderly. Belmont, CA: Wadsworth Publishing Company.

Linn, M., & Hunter, K. (1979). Perception of age in the elderly. Journal of Gerontology, 34, 46-53.

Locke-Connor, C. L., & Walsh, R. P. (1980). Attitudes toward the older job applicant: Just as competent, but more likely to fail. Journal of Gerontology, 35, 920-927.

Locksley, A., Ortiz, V., & Hepburn, C. (1980). Social categorization and discriminatory behavior: Extinguishing the minimal intergroup discrimination effect. Journal of Personality and Social Psychology, 39, 246-256.

Maddox, G. L. (1971). Behaviorial and social research. In Background and issues: Research and demonstration. White House Conference on Aging, Washington, D.C.

McClelland, D. C., Atkinson, J. W., Clark, R. W., & Lowell,

E. L. (1953). The achievement motive. New York: Appleton-Century-Crafts.

Neugarten, B. L., & Hagestad, G. O. (1976). Age and the life course. In R. Binstock & E. Shanas (Eds.), Handbook of aging and the social sciences (pp. 35-55). New York: Van Nostrand.

Nuessel, F. H. (1982). The language of ageism. The Gerontologist, 22, 273-276.

Perry, J. S., & Slemp, S. R. (1980). Differences among three adult age groups in their attitudes towards self and others. Journal of Genetic Psychology, 136, 275-279.

Reno, R. (1979). Attribution for success and failure as a function of perceived age. Journal of Gerontology, 34, 709-715.

Riegel, K. F. (1972). The changing individual in the changing society. Determinants of Behavioral Development. New York: Academic Press.

Riegel, K. F., & Riegel, R. M. (1972). Development, drop and death. Developmental Psychology, 6, 306-319.

Rodin, J., & Langer, E. (1980). Aging labels: The decline of control and the fall of self-esteem. Journal of Social Issues, 36(2), 12-29.

Rosencrantz, H. A., & McNevin, T. E. (1969). A factor analysis of attitudes toward the aged. Gerontologist, 9, 55-59.

Rothbaum, F. (1984). Aging and age stereotypes. Social Cognition, 2, 171-184.

Rotter, J. B. (1966). Generalized expectancies for internal vs external control of reinforcement. Psychological Monographs, 80, 1-28.

Rotter, J. B. (1975). Some problems and misconceptions related to the construct of internal vs external control of reinforcement. Journal of Consulting and Clinical Psychology, 48, 56-67.

SAS Institute. (1982 ed.). SAS user's guide: Basics. Cary, NC: Author, 1982.

Schaie, K. W. (1976). External validity in the assessment of intellectual development in adulthood. Proceedings of the 84th Annual Convention of the American Psychological Association.

Schaie, K. W. (1979). The primary mental abilities in adulthood: An exploration of psychometric intelligence. In P. B. Baltes & O. G. Brim Jr. (Eds.), Life-span development and behavior (Vol. 2). NY: Academic Press.

Schaie, K. W. (1982). The Seattle longitudinal study: A twenty-one year exploration of psychometric intelligence in adulthood. In K. W. Schaie (Ed.), Longitudinal studies of adult psychological development. New York: Guilford Press.

Schaie, K. W. (1983). Age changes in adult intelligence. In D. S. Woodruff and J. E. Birren (Eds.), Aging:

Scientific perspectives and social issues. Monterey, CA: Brooks/Cole Publishing Co.

Schaie, K. W., & Labouvie-Vief, G. (1974). Generational versus ontogenic components of change in adult cognitive behavior: A fourteen-year cross-sequential study. Developmental Psychology, 10, 105-320.

Schaie, K. W., Labouvie, G. K., & Buech, B. V. (1973). Generational and cohort-specific differences in adult cognitive functioning: A fourteen year study of independent samples. Developmental Psychology, 9, 151-166.

Sherman, N. C. (1977). Attribution theory and evaluation of old people among college students, their parents and grandparents. (Doctoral dissertation, University of Maine, 1977). Dissertation Abstracts International, 37B, 5864-5865.

Sherman, N. C., Gold, J. A., & Shuman, M. F. (1978). Attribution theory and evaluations of older men among college students, their parents, and grandparents. Personality and Social Psychology Bulletin, 4, 440-442.

Statistics Canada 1981. (1984). The elderly in Canada (Catalogue No. 99-932). Ottawa, Canada: Minister of Supply and Services.

Tibbitts, C. (1979). Can we invalidate negative stereotypes of aging? The Gerontologist, 19, 10-20.

Troll, L. E. (1982). Continuations: Adult development and

aging. Monterey, CA: Brooks/Cole Publishing Co.

Tuckman, J., & Lorge, I. (1953). Attitudes toward older people. Journal of Social Psychology, 37, 249-260.

Walsh, R. P., & Connor, C. L. (1979). Old men and young women: How objectively are their skills assessed? Journal of Gerontology, 34, 561-568.

Watson, D. (1982). The actor and the observer. How are their perceptions of causality divergent? Psychological Bulletin, 92, 682-700.

Wechsler, D., & Stone, C. P. (1973). Manual: Wechsler Memory Scale. New York: Psychological Corporation.

Weinberger, L. E., & Millham, J. A. (1975). A multidimensional, multiple method analyses of attitudes toward the elderly. Journal of Gerontology, 30, 343-348.

Weiner, B. (1972). Theories of motivation: From mechanism to cognition. Chicago: Rand McNally.

Weiner, B. (1974). Achievement motivation and attribution theory. Morristown, NJ: General Learning Press.

Weiner, B. (1976). An attributional approach for educational psychology. In L. Shulman (Ed.), Review of research in education, Vol. 4. Itasca, IL: Peacock.

Weiner, B. (1977). An attributional approach for educational psychology. In L. Schulman (Ed.), Review of research in education, five. Itasca, IL: Peacock Press.

Weiner, B. (1979). A theory of motivation for some classroom experiences. Journal of Educational Psychology. 71, 3-25.

Weiner, B. (1980a). An attributional theory of behavior. In B. Weiner, Human motivation (pp. 275-406). New York: Holt, Rinehart and Winston.

Weiner, B. (1980b). A cognitive (attribution) - emotion - action model of motivated behavior: An analysis of judgements of help - giving. Journal of Personality and Social Psychology, 39, 186-200.

Weiner, B. (1982). The emotional consequences of causal attributions. In M. S. Clark and S. T. Fiske (Eds.), Affect and cognition. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Weiner, B. (1983). Some methodological pitfalls in attributional research. Journal of Educational Psychology, 75, 530-543.

Weiner, B., & Brown, J. (1984). All's well that ends. Journal of Educational Psychology, 76, 169-171.

Weiner, B., Frieze, I. H., Kukla, A., Reed, L., Rest, S., & Rosenbaum, R. M. (1971). Perceiving the causes of success and failure. Morristown, NJ: General Learning Press.

Weiner, B., & Kukla, A. (1970). An attributional analysis of achievement motivation. Journal of Personality and Social Psychology, 15, 1-20.

Weiner, B., & Peter, N. (1973). A cognitive-developmental analysis of achievement and moral judgements. Developmental Psychology, 9, 290-309.

Weiner, B., Russell, D., & Lerman, D. (1978). Affective consequences of causal ascriptions. In J. H. Harvey, W. J. Ickes, & R. F. Kidd (Eds.), New directions in attribution research (Vol. 2). Hillsdale, NJ: Erlbaum.

Willis, S. L., & Baltes, P. B. (1980) Intelligence in adulthood and aging: Contemporary issues. In L. W. Poon (Ed.), Aging in the 1980's. Washington, DC: American Psychological Association.

Woodruff, D. (1983). A review of aging and cognitive processes. Research on Aging, 5, 139-153.

Wong, P. T., & Weiner, B. (1981). When people ask "why" questions, and the heuristics of attributional search. Journal of Personality and Social Psychology, 40, 650-663.

Youman, E. G. (1977). Attitudes: Young-old and old-old. The Gerontologist, 17, 175-178.

Zarit, S. H., Cole, K. D., & Guider, R. L. (1981). Memory training strategies and subjective complaints of memory in the aged. The Gerontologist, 21, 158-164.

Zuckerman, M. (1979). Attribution of success and failure revisited, or: The motivational bias is alive and well in attribution theory. Journal of Personality, 47, 245-287.

APPENDIX A

Informed Consent Form and Letters to Participants

University of Alberta
Edmonton
Canada T6G 2H1

Department of Family Studies
Faculty of Home Economics
801 General Services Building, Telephone (403) 432-5771

Informed Consent

The purpose of this study is to examine how people of differing ages learn various types of material, including words and sentences. From studies such as this, I hope to discover how different people perceive, store, and recall items from memory. Your task will be to read a few essays and then to answer some questions on them.

Please respond as accurately as possible. If you feel tired, tell me and we will stop for a rest; otherwise there is no risk in any of these tasks. The whole study will take less than two hours, including rest breaks. You may withdraw from the study at any time. I will be happy to explain the purpose of the study, but would prefer to wait until it is finished, so that it does not influence the way in which you respond.

While there will probably be no direct benefit to you from taking part in this study, we hope that information from studies such as this may contribute to future attempts to improve learning for people of all ages. All information collected will be kept confidential. This means that only myself and my research assistants will see individual answers or individual scores. Scores will only be reported as statistical group summaries. Also, I will be happy to mail you a copy of the general results; however, I cannot give you a copy of your scores. If you have any questions, please ask Judy Johnson to answer them or call Dr. Nancy L. Hurlbut at 432-5766.

Thank you for your time.

N. L. Hurlbut, Ph.D.
Assistant Professor
Department of Family Studies
801 General Services Bldg.
University of Alberta
Phone: 432-5766

Informed Consent

The purpose of this study is to examine how people of differing ages learn various types of material, including words and sentences. From studies such as this, I hope to discover how different people perceive, store, and recall items from memory. Your task will be to read a few essays and then to answer some questions on them.

Please respond as accurately as possible. If you feel tired, tell me and we will stop for a rest; otherwise there is no risk in any of these tasks. The whole study will take less than two hours, including rest breaks. You may withdraw from the study at any time. I will be happy to explain the purpose of the study, but would prefer to wait until it is finished, so that it does not influence the way in which you respond.

While there will probably be no direct benefit to you from taking part in this study, we hope that information from studies such as this may contribute to future attempts to improve learning for people of all ages. All information collected will be kept confidential. This means that only myself and my research assistants will see individual answers or individual scores. Scores will only be reported as statistical group summaries. Also I will be happy to mail you a copy of the general results; however, I cannot give you a copy of your scores. If you have any questions, please ask Judy Johnson to answer them or call Dr. Nancy L. Hurlbut at 432-5766.

I consent to take part in this study.

Signature of Participant Date

University of Alberta
Edmonton
Canada T6G 2H1

Department of Family Studies
Faculty of Home Economics
801 General Services Building, Telephone (403) 432-5771

Dear

I would like to take this opportunity to thank-you for participating in the learning and memory study at the University of Alberta's Department of Family Studies. Your enthusiastic participation was most appreciated and contributed toward our knowledge regarding the learning styles and environments of people of differing age groups. Thank-you!

Sincerely,

Nancy L. Hurlbut, Ph.D.
Assistant Professor
Department of Family Studies

NLH/ka

University of Alberta
Edmonton
Canada T6G 2H1

Department of Family Studies
Faculty of Home Economics
801 General Services Building, Telephone (403) 432-5771

June 16, 1987

Dear <name>:

Last summer you participated in a study on learning and memory at the University of Alberta. At that time you indicated an interest in receiving a summary of the results. The data is now analyzed and a summary of the purpose of the study and the major findings is included with this letter.

I want to take this opportunity to thank you again for the time you gave in participating in this study. It was extremely valuable to me.

If you would like further information about the study contact me by calling 432-5766 or leave a message with my secretary at 432-5771. I will return the call as soon as possible.

Sincerely,

Nancy L. Hurlbut, Ph.D.
Associate Professor
Department of Family Studies

NLH/ka
Encl.

The Influence of Social Experience on the Learning of Senior Adults and College Students

Background of the Research. To date research has shown contradictory results concerning the older adult's learning. Some studies show that the older person learns as well as the young adult learns while other data show that they do not learn as well as the young adults. These contradictory data have led researchers, like myself, to study the potential causes underlying the learning differences between the two age groups. This is what was done in the present study.

Purpose of the Study. The purpose of this study was to explore factors that might improve the learning performance of the older adult. We tested whether the performance of senior citizens was influenced by social experiences that tell them that they are too old to learn new information. A group of college students was also studied in order to make comparisons across the two age groups. The objective was to discover procedures that could be used to reduce the memory problems about which the older adult complains.

What You Did. In this study, first you read a story about a person named Sanders. You read one of four possible stories about Sanders. These four stories were exactly the same except in one story Sanders performed well (passed in the upper 10%) while in another story Sanders performed poorly (failed in the lower 10%). In addition, in one story Sanders was advised to seek further university education while in another story Sanders was told not to seek further university education.

After you read the Sanders story, you completed a learning task in which you read two essays and then answered some questions on each one. Before reading these essays you estimated how many questions you would answer correctly. You made a similar estimate after completing the learning task.

The Sanders story was used to vary your social experience before you learned the stories. I predicted that the senior adults who read the story about Sanders performing well would guess that they would perform well and then they would perform well; in contrast, the senior adults who read that Sanders performed poorly would guess that they would perform poorly and then they would perform poorly. Further, I predicted that the college students would not be influenced by the Sanders story.

Summary of Results. The Sanders story did alter how well the senior adults thought they would perform, but it also altered how well the young adults thought they would perform. If you read the story in which Sanders failed the tasks (scored in the lower 10%) you guessed that you would not answer many questions correctly. On the other hand, if you read the story in which Sanders passed the tasks (scored in the upper 10%) you were more likely to guess that you would answer many of the questions correctly. This was found for both the young and older age groups. That is, no matter how old you are, adults have a tendency to lower or raise the evaluation of their own ability based on the behavior of another person. This suggests that the way television and the other media presents your age group's intellectual accomplishments is very important in influencing how you feel about your own intellectual abilities.

The Sanders story did not change your actual performance. That is, your efficiency at learning the stories was not related to how well Sanders did, for either age group.

This data indicates that social stereotypes which show senior adults performing poorly at a task do influence one aspect of their learning. Such cultural stereotypes add to the elderly's evaluation of themselves as too old to learn. This, in turn, might influence how willing one is to try an experience that demands new learning. The fact that the same effect was found for the undergraduate students was surprising but points out the pervasiveness of such stereotyping. Such data suggests that people need to interact with models of their own age, either real or symbolic, that are performing well. This should improve how well one feels about oneself and probably whether one attempts to do new jobs in the first place.

In summary, there is some evidence that the social experience of an older adult can improve or hurt their performance on learning tasks.

APPENDIX B

Stimulus Person (Sanders) Stories and Attributional Causes

Sanders' story: elderly female/success outcome

Please read the following essay and then answer a few questions on the next page as to why you think Catherine Sanders scored in the upper 10% of applicants. You may refer back to the essay while you are answering the questions.

Catherine Sanders aged 65 has just completed an application to enrol in the school of Business at the major university in the province in which she lives.

For several years, Catherine Sanders has been interested in continuing her education in order to learn how to manage money on a limited income and how to run a small business. She felt that her past education had not prepared her for today's complex world. She thought this lack of knowledge had a bad effect upon her buying habits and her future financial security. She read about a program at the university which offered training on information such as this. Although she had not attended school for over 40 years, Catherine Sanders decided to enrol in some courses. She was very excited about her decision to return to school since she remembers always liking school. However, she was concerned since she knew she was quite old to be entering university. When she told her family and friends that she intended to return to university, they all supported her and they all said that she would do very well.

When Catherine Sanders went to the university to apply for admission, the university admission personnel remarked that she was much older than most of their applicants and that they were pleased to see that she wanted to apply. They also stated that mature students offer much to the classroom and encouraged her to apply. She decided to apply but before any student could enrol in any university class, that student had to complete a series of ability tests and score above 75%. She completed the tests and scored 90%. This put her in the upper 10% among the applicants who have completed these tests during the current academic year. She was very pleased with her score since most of the other applicants were in their early twenties.

Attribution questions: elderly female/success outcome

Now I would like you to tell me why you think she scored in the upper 10% of applicants who have completed these tests. You will do this by completing the following task. Beginning with statement A, circle one of the five numbers which follows statement A. That is, pick the one number that best represents the likelihood that Catherine Sanders' name represents a cause for her score being in the upper 10%. The meaning of the numbers are as follows:

1 means a very unlikely cause
2 means an unlikely cause
3 means a possible cause
4 means a likely cause
5 means a very likely cause

Therefore if you think Catherine Sanders' name is a very unlikely cause for her score then circle the 1 following statement A; however if you think her name is a very likely cause then circle the 5 following statement A. Continue for statements B, C, D, E, F, G, H, I, and J so that you have circled one of the five numbers following each statement. Then you are finished with this task.

Possible Cause	Number Rating
A. Her name	1 2 3 4 5
B. The admission personnel's attitude	1 2 3 4 5
C. The other applicants' ability	1 2 3 4 5
D. Her ability	1 2 3 4 5
E. Her attitude toward taking university tests	1 2 3 4 5
F. Her effort	1 2 3 4 5
G. The tasks were easy	1 2 3 4 5
H. Her age	1 2 3 4 5
I. Her good luck	1 2 3 4 5
J. Her gender (female)	1 2 3 4 5

Sanders' story: young male/failure outcome

Please read the following essay and then answer a few questions on the next page as to why you think Raymond Sanders scored in the lower 10% of applicants. You may refer back to the essay while you are answering the questions.

Raymond Sanders aged 23 has just completed an application to attend Graduate Studies in the School of Business at the major university in the province in which he lives.

For several years, Raymond Sanders has been interested in continuing his education in order to learn about business and accounting. He felt that his past education had not prepared him for today's complex world. He thought this lack of knowledge had a bad effect upon his employment possibilities and his future financial security. He read about a program at the university which offered training on information such as this. Although he had not attended school for a few years, Raymond Sanders decided to enrol in this program. He was very excited about his decision to return to school since he had enjoyed his undergraduate years. However, he was concerned since he knew his grades were a bit low for entering graduate studies. When he told his family and friends that he intended to return to university, they all supported Him and they all said that he would do very well.

When Raymond Sanders went to the university to apply for graduate studies, the university admission personnel remarked that his marks were lower than most of their applicants and that they were pleased to see that he wanted to apply. They also stated that average students offer much to the classroom and encouraged him to apply. He decided to apply but before any student could enrol in any graduate program, that student had to complete a series of ability tests and score above 75%. He completed the tests and scored 40%. This put him in the lower 10% among the applicants who have completed these tests during the current academic year. He was very disappointed with his score since many of the other applicants had a better grade point average than he had.

Attribution questions: young male/failure outcome

Now I would like you to tell me why you think he scored in the lower 10% of applicants who have completed these tests. You will do this by completing the following task. Beginning with statement A, circle one of the five numbers which follows statement A. That is, pick the one number that best represents the likelihood that Raymond Sanders' name represents a cause for his score being in the lower 10%. The meaning of the numbers are as follows:

1 means a very unlikely cause
2 means an unlikely cause
3 means a possible cause
4 means a likely cause
5 means a very likely cause

Therefore if you think Raymond Sanders' name is a very unlikely cause for his score then circle the 1 following statement A; however if you think his name is a very likely cause then circle the 5 following statement A. Continue for statements B, C, D, E, F, G, H, I, and J so that you have circled one of the five numbers following each statement. Then you are finished with this task.

Possible Cause	Number Rating
A. His name	1 2 3 4 5
B. The admission personnel's attitude	1 2 3 4 5
C. The other applicants' ability	1 2 3 4 5
D. His ability	1 2 3 4 5
E. His attitude toward taking university tests	1 2 3 4 5
F. His effort	1 2 3 4 5
G. The tasks were hard	1 2 3 4 5
H. His age	1 2 3 4 5
I. His bad luck	1 2 3 4 5
J. His gender (male)	1 2 3 4 5

Treatment: Elderly Female
(Upper/Lower and Support/Discouragement)

Please read the following essay and then answer a few questions on the next page as to why you think Catherine Sanders scored in the _____ (upper/lower) 10% of applicants. You may refer back to the essay while you are answering the questions.

Catherine Sanders aged 65 has just completed an application to enrol in the school of Business at the major university in the province in which she lives.

For several years, Catherine Sanders has been interested in continuing her education in order to learn how to manage money on a limited income and how to run a small business. She felt that her past education had not prepared her for today's complex world. She thought this lack of knowledge had a bad effect upon her buying habits and her future financial security. She read about a program at the university which offered training on information such as this. Although she had not attended school for over 40 years, Catherine Sanders decided to enrol in some courses. She was very excited about her decision to return to school since she remembers always liking school. However, she was concerned since she knew she was quite old to be entering university. When she told her family and friends that she intended to return to university, _____ (they all supported her and they all said that she would do very well/no one supported her and they all said that she would do very poorly.)

When Catherine Sanders went to the university to apply for admission, the university admission personnel remarked that she was much older than most of their applicants and that they were (/not) pleased to see that she wanted to apply. They also stated that mature students (/do not) offer much to the classroom and encouraged her (/not) to apply. She decided to apply but before any student could enrol in any university class, that student had to complete a series of ability tests and score above 75%. She completed the tests and scored _____ (40%/90%). This put her in the _____ (upper/lower) 10% among the applicants who have completed these tests during the current academic year. She was very _____ (pleased/disappointed) with her score since most of the other applicants were in their early twenties.

Continue to the next page...

Treatment: Elderly Male
(Upper/Lower and Support/Discouragement)

Please read the following essay and then answer a few questions on the next page as to why you think, Raymond Sanders scored in the _____ (upper/lower) 10% of applicants. You may refer back to the essay while you are answering the questions.

Raymond Sanders aged 65 has just completed an application to enrol in the school of Business at the major university in the province in which he lives.

For several years, Raymond Sanders has been interested in continuing his education in order to learn how to manage money on a limited income and how to run a small business. He felt that his past education had not prepared him for today's complex world. He thought this lack of knowledge had a bad effect upon his buying habits and his future financial security. He read about a program at the university which offered training on information such as this. Although he had not attended school for over 40 years, Raymond Sanders decided to enrol in some courses. He was very excited about his decision to return to school since he remembers always liking school. However, he was concerned since he knew he was quite old to be entering university. When he told his family and friends that he intended to return to university, _____ (they all supported him and they all said that he would do very well/no one supported him and they all said that he would do very poorly.)

When Raymond Sanders went to the university to apply for admission, the university admission personnel remarked that he was much older than most of their applicants and that they were (/not) pleased to see that he wanted to apply. They also stated that mature students (/do not) offer much to the classroom and encouraged him (/not) to apply. He decided to apply but before any student could enrol in any university class, that student had to complete a series of ability tests and score above 75%. He completed the tests and scored _____ (40%/90%). This put him in the _____ (upper/lower) 10% among the applicants who have completed these tests during the current academic year. He was very _____ (pleased/disappointed) with his score since most of the other applicants were in their early twenties.

Continue to the next page...

Treatment: Young Female
(Upper/Lower and Support/Discouragement)

Please read the following essay and then answer a few questions on the next page as to why you think Catherine Sanders scored in the _____ (upper/lower) 10% of applicants. You may refer back to the essay while you are answering the questions.

Catherine Sanders aged 23 has just completed an application to attend Graduate Studies in the School of Business at the major university in the province in which she lives.

For several years, Catherine Sanders has been interested in continuing her education in order to learn about business and accounting. She felt that her past education had not prepared her for today's complex world. She thought this lack of knowledge had a bad effect upon her employment possibilities and her future financial security. She read about a program at the university which offered training on information such as this. Although she had not attended school for a few years, Catherine Sanders decided to enrol in this program. She was very excited about her decision to return to school since she had enjoyed her undergraduate years. However, she was concerned since she knew her grades were a bit low for entering graduate studies. When she told her family and friends that she intended to return to university, _____ (they all supported her and they all said that she would do very well/no one supported her and they all said that she should get a job instead.)

When Catherine Sanders went to the university to apply for graduate studies, the university admission personnel remarked that her marks were lower than most of their applicants and that they were (/not) pleased to see that she wanted to apply. They also stated that average students (/do not) offer much to the classroom and encouraged her (/not) to apply. She decided to apply but before any student could enrol in any graduate program, that student had to complete a series of ability tests and score above 75%. She completed the tests and scored _____ (40%/90%). This put her in the _____ (upper/lower) 10% among the applicants who have completed these tests during the current academic year. She was very _____ (pleased/disappointed) with her score since many of the other applicants had a better grade point average than she had.

Continue to the next page...

Treatment: Young Male
(Upper/Lower and Support/Discouragement)

Please read the following essay and then answer a few questions on the next page as to why you think Raymond Sanders scored in the _____ (upper/lower) 10% of applicants. You may refer back to the essay while you are answering the questions.

Raymond Sanders aged 23 has just completed an application to attend Graduate Studies in the School of Business at the major university in the province in which he lives.

For several years, Raymond Sanders has been interested in continuing his education in order to learn about business and accounting. He felt that his past education had not prepared him for today's complex world. He thought this lack of knowledge had a bad effect upon his employment possibilities and his future financial security. He read about a program at the university which offered training on information such as this. Although he had not attended school for a few years, Raymond Sanders decided to enrol in this program. He was very excited about his decision to return to school since he had enjoyed his undergraduate years. However, he was concerned since he knew his grades were a bit low for entering graduate studies. When he told his family and friends that he intended to return to university, _____ (they all supported him and they all said that he would do very well/no one supported him and they all said that he should get a job instead.)

When Raymond Sanders went to the university to apply for graduate studies, the university admission personnel remarked that his marks were lower than most of their applicants and that they were (/not) pleased to see that he wanted to apply. They also stated that average students (/do not) offer much to the classroom and encouraged him (/not) to apply. He decided to apply but before any student could enrol in any graduate program, that student had to complete a series of ability tests and score above 75%. He completed the tests and scored _____ (40%/90%). This put him in the _____ (upper/lower) 10% among the applicants who have completed these tests during the current academic year. He was very _____ (pleased/disappointed) with his score since many of the other applicants had a better grade point average than he had.

Continue to the next page...

APPENDIX C

Demographic Questionnaire

Study SSCH Vic 2 Elderly

SS#: _____ F _ _ _ _ _ _

Date: _____ 1986 2 _ _ _ _ _ _

Name (optional): _____

Address (optional): _____

Birthdate: _____ _____ _____
day month year

Place of birth: _____ _____ _____
city province country

Phone number (optional): _____

Sex: _____ male _____ female

Marital status: _____ single _____ married

_____ widow/widower _____ separated/divorced

We would like to know a little more about you.

1. What is your present work status (include housewife as a job)?

___ working part-time. What is/are your present job(s)? _____

___ working full-time. What is your present job? _____

___ other, please specify: _____

2. What is your spouse's present work status (include housewife as a job)?

___ working part-time. What is/are your spouse's present job(s)?

_____

___ working full-time. What is your spouse's present job?

_____

___ other, please specify: _____

___ The question does not apply to me.

3. How much schooling have you had? ____ years

4. What is the last degree you completed in school? _____

5. How many years have you lived in Canada? ____ years;
in Alberta? _____ years; in your present residence? _____ years

6. At present, are you living in: (Check one.)

_____ an apartment or house

_____ other; please specify: _____

7. How would you rate your health? (Check one.)

_____ poor _____ fair _____ good _____ excellent

8. How would you rate your present hearing? (Check one.)

_____ poor _____ fair _____ good _____ excellent

9. How would you rate your present vision? (Check one.)

_____ poor _____ fair _____ good _____ excellent

10. Have you ever taken a class to help you remember things?

_____ no _____ yes. If yes, how long ago did you last take a memory class? _____ years ago.

11. Do you have any ongoing or recurring health conditions?

_____ no _____ yes. If yes, fill in the following chart for all conditions.

Name the condition	How long have you had it (months and years)

12. Do you regularly take any medicine or pills?

_____ no _____ yes. If yes, fill in the following chart for all pills you take.

Name the medication	Do you take the medication			
	daily	weekly	monthly	less often than once a month
_____	___	___	___	___
_____	___	___	___	___
_____	___	___	___	___

13. Have you taken any medication or pills this week?

_____ no _____ yes

If yes, which ones and when was the last time you took each?

Name the medication	Last date and time it was taken

14. Are you on a special diet? _____ no _____ yes. If yes, please specify _____

Thank you very much for your time today.

Nancy L. Hurlbut, Ph.D.
Assistant Professor
Department of Family Studies
801 General Services Building
Phone: 432-5766

Study SSCH Vic 2 Young

SS#: _____ Y ___ ___ ___ ___ ___

Date: _____ 1986 1 ___ ___ ___ ___ ___

Name (optional): _____

Address (optional): _____

Birthdate: _____ day _____ month _____ year

Place of birth: _____ city _____ province _____ country

Phone number (optional): _____

Sex: _____ male _____ female

Marital status: _____ single _____ married

_____ widow/widower _____ separated/divorced

We would like to know a little more about you.

1. What is your present work status (include housewife as a job)?

___ working part-time. What is/are your present job(s)? _____

___ working full-time. What is your present job? _____

___ other, please specify: _____

2. What is your spouse's present work status (include housewife as a job)?

___ working part-time. What is/are your spouse's present job(s)? _____

___ working full-time. What is your spouse's present job? _____

___ other, please specify: _____

___ The question does not apply to me.

3. How much schooling have you had? _____ years

4. What is the last degree you completed in school? _____

5. How many years have you lived in Canada? _____ years; in Alberta? _____ years; in your present residence? _____ years

6. At present, are you living in: (Check one.)

_____ an apartment or house

_____ other; please specify: _____

7. How would you rate your health? (Check one.)

_____ poor _____ fair _____ good _____ excellent

8. How would you rate your present hearing? (Check one.)

_____ poor _____ fair _____ good _____ excellent

9. How would you rate your present vision? (Check one.)

_____ poor _____ fair _____ good _____ excellent

10. Have you ever taken a class to help you remember things?

_____ no _____ yes. If yes, how long ago did you last take a memory class? _____ years ago.

11. Do you have any ongoing or recurring health conditions?

_____ no _____ yes. If yes, fill in the following chart for all conditions.

Name the condition	How long have you had it (months and years)

12. Do you regularly take any medicine or pills?

_____ no _____ yes. If yes, fill in the following chart for all pills you take.

Name the medication	Do you take the medication			
	daily	weekly	monthly	less often than once a month
_____	___	___	___	___
_____	___	___	___	___
_____	___	___	___	___

13. Have you taken any medication or pills this week?

_____ no _____ yes

If yes, which ones and when was the last time you took each?

Name the medication	Last date and time it was taken

14. Are you on a special diet? _____ no _____ yes. If yes, please specify _____

Thank you very much for your time today.

Nancy L. Hurlbut, Ph.D.
Assistant Professor
Department of Family Studies
801 General Services Building
Phone: 432-5766

APPENDIX D

Pairwise Reliability Tests on Attribution Questions

Table D-1

Reliability Tests

Weiner Classification	Item #/Attributions	Pairwise Correlation	Chronbach's Alpha
External-Unstable	1. Admission Personnel's Attitude	-.1198	-.25
	8. Sanders' Luck		
External-Stable	2. Others' Ability	.1601	.28
	6. Task ease/difficulty		
Internal-Stable	3. Sanders' Ability	-.0245	-.05
	9. Sanders' Gender		
Internal-Unstable	4. Sanders' Attitude to Tests	.6806	.81
	5. Sanders' Effort		

APPENDIX E

Univariate F-Tests for MANOVA Main Effects and Interactions

Table E-1

Univariate F-tests (1, 178 df.) for MANOVA

Main Effects and Interactions

Variable		Age Group	Outcome	Interaction
1. Adm. Pers. Attitude	F-ratio	0.05 (p=.825)	1.35 (p=0.246)	1.45 (p=.230)
2. Others' Ability	F-ratio	3.33 (p=.069)	16.85* (p=.000)	0.39 (p=.531)
3. Sanders' Ability	F-ratio	10.09* (p=.002)	32.39* (p=.000)	10.25* (p=.001)
4. Sanders' Attitude	F-ratio	0.07 (p=.797)	109.42* (p=.000)	9.02* (p=.003)
5. Sanders' Effort	F-ratio	1.41 (p=.236)	166.78* (p=.000)	3.52 (p=.063)
6. Task Ease/ Difficulty	F-ratio	0.02 (p=.893)	48.18* (p=.000)	0.00 (p=.946)
7. Sanders' Age	F-ratio	10.52* (p=.001)	0.40 (p=.529)	6.63* (p=.011)
8. Sanders' Luck	F-ratio	.83 (p=.363)	1.67 (p=.198)	7.87* (p=.005)
9. Sanders' Gender	F-ratio	.37 (p=.543)	5.75 (p=.018)	0.07 (p=.793)

APPENDIX F

Line Graphs of Each of the Nine Attributions

Figure 1

Sanders' Age

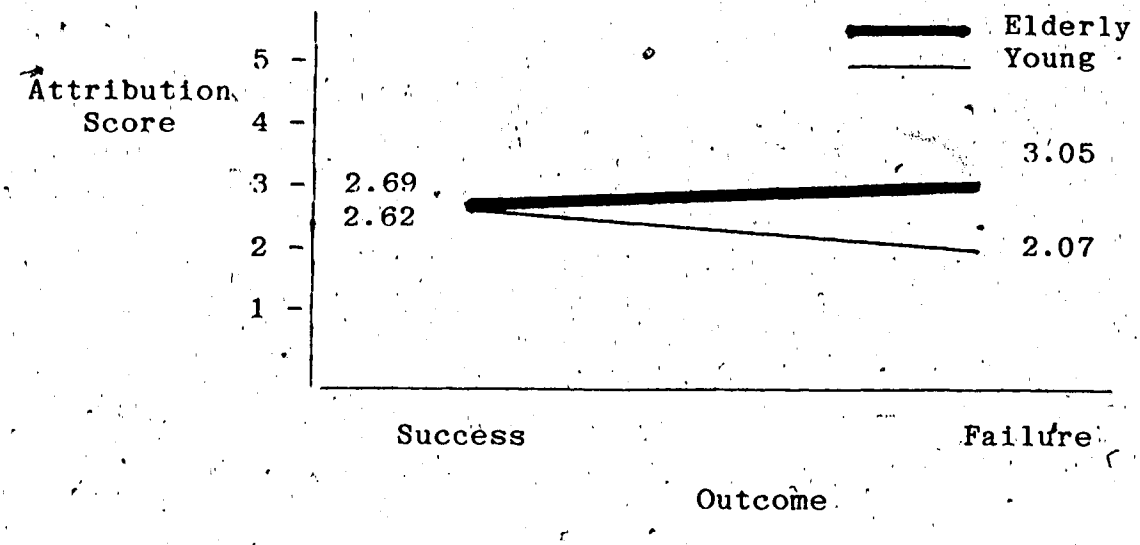

Figure 2

Sanders' Ability

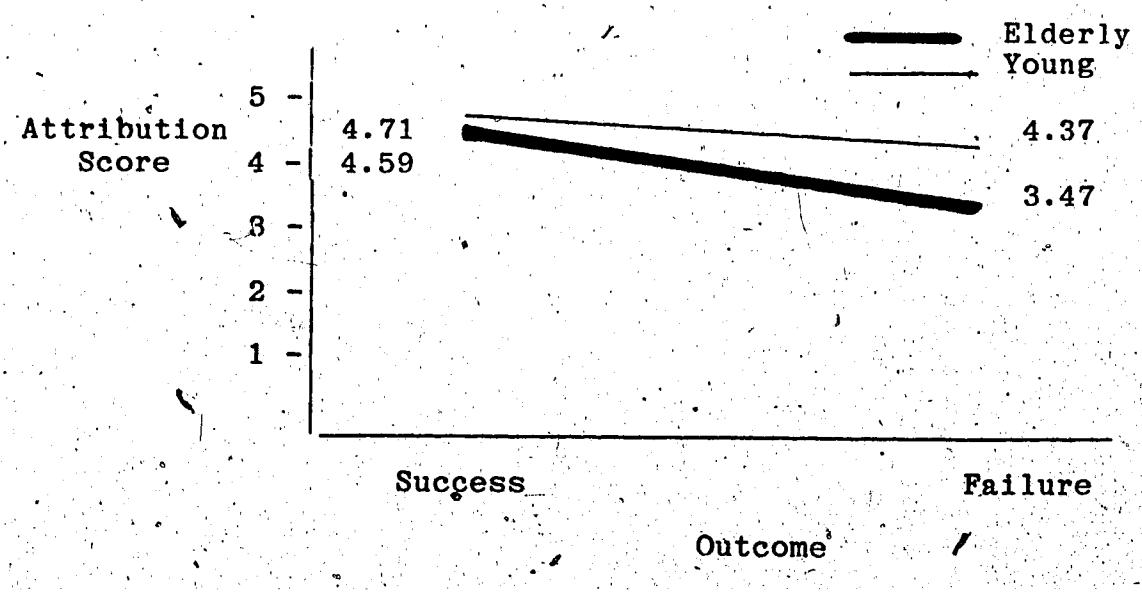

Figure 3

Sanders' Attitude Toward Tests

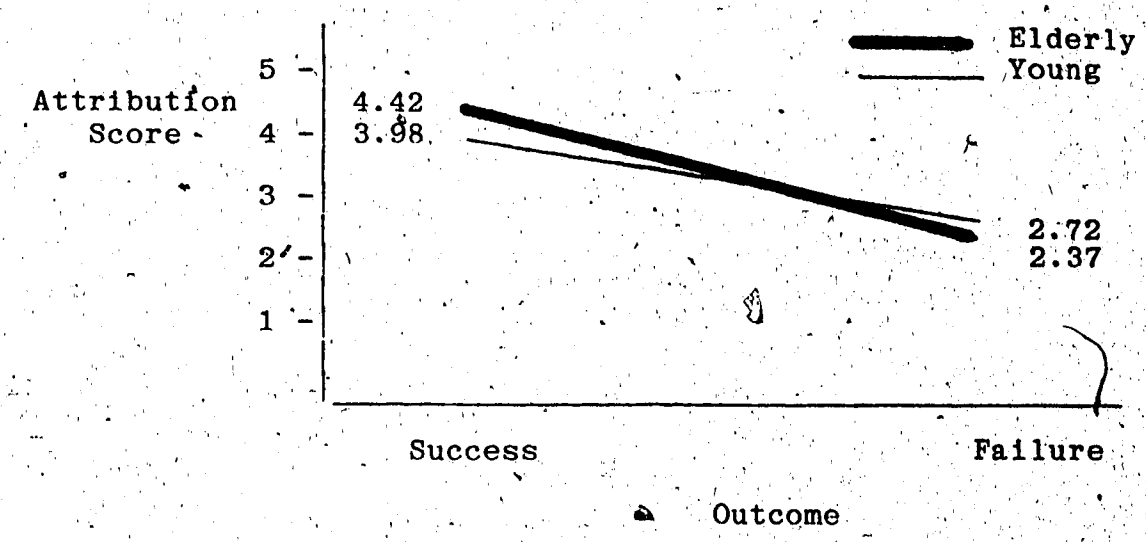

Figure 4

Sanders' Effort

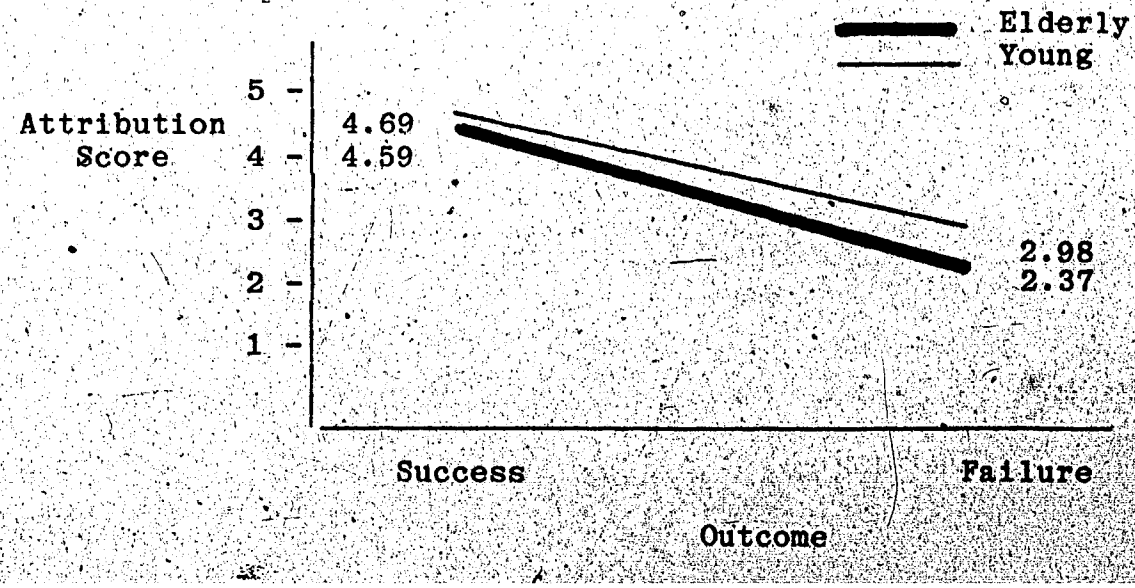

Figure 5

Task Ease/Difficulty

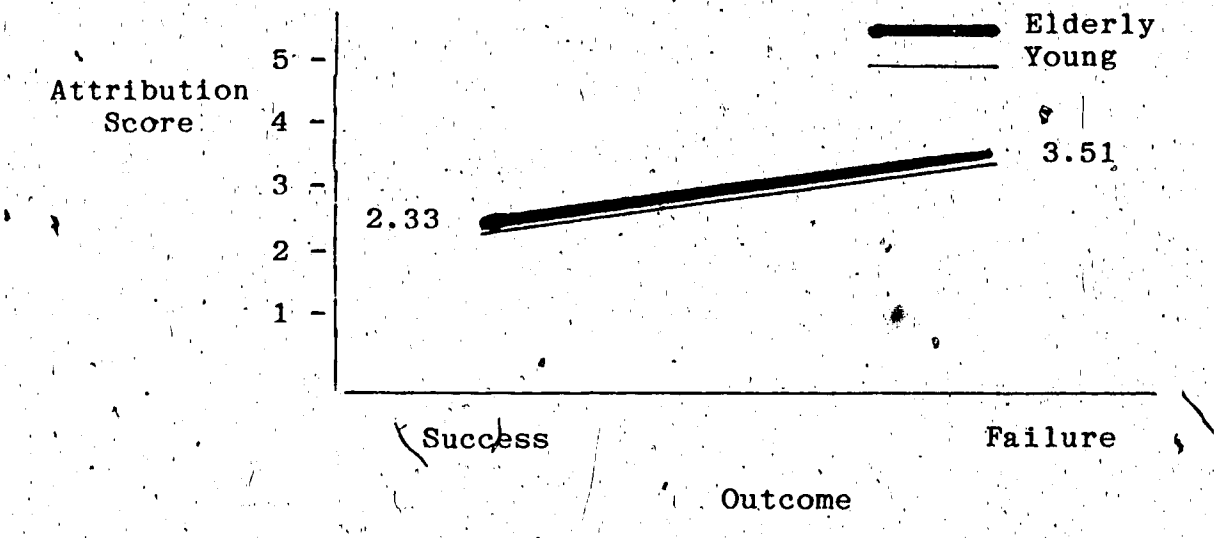

Figure 6

Other Applicants' Ability

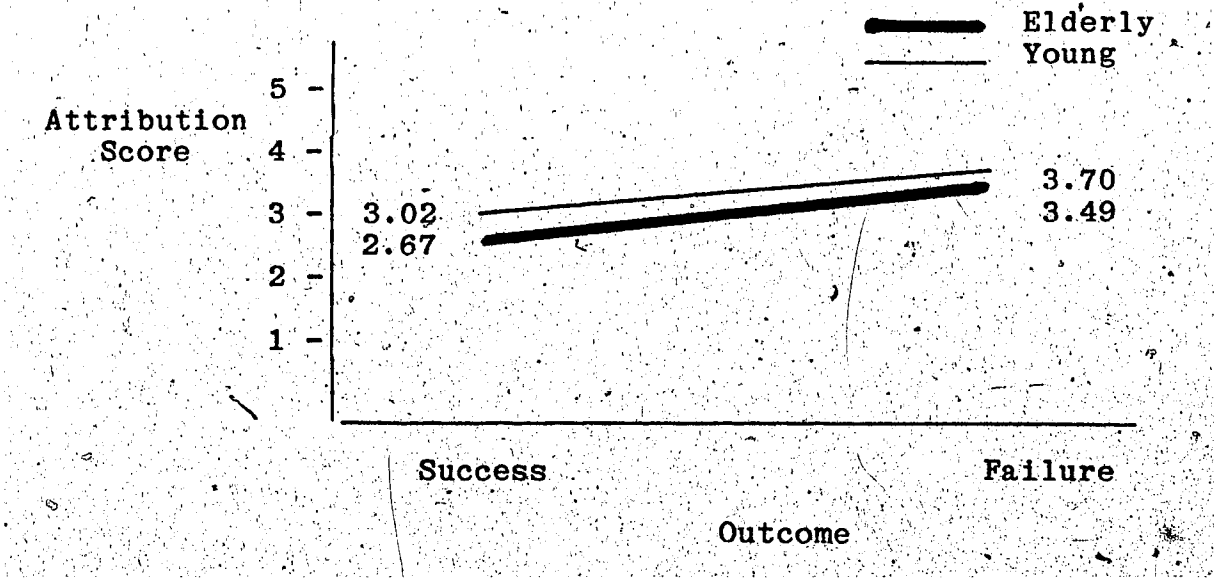

Figure 7

Sanders' Luck

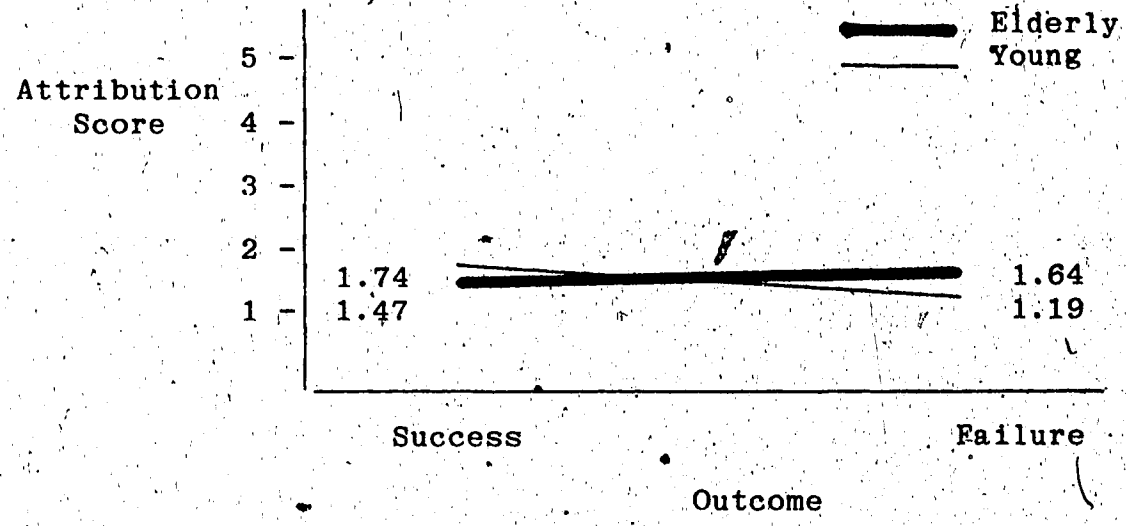

Figure 8

Sanders' Gender

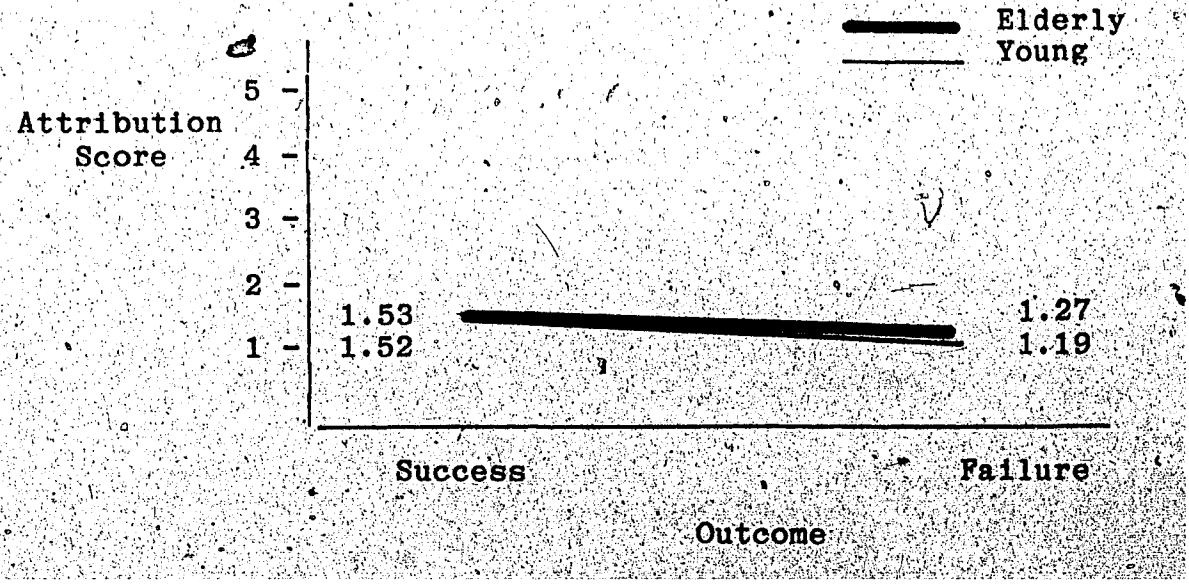

Figure 9

Admission Personnel's Attitude