DEATH ANXIETY AND FUTURE TIME PERSPECTIVE

Thesis for the Degree of M. A.

MICHIGAN STATE UNIVERSITY

BARRY MICHAEL FARRELL

1976

ABSTRACT

DEATH ANXIETY AND FUTURE TIME PERSPECTIVE

By

Barry Michael Farrell

The present study investigated the relationship between future time perspective and anxiety aroused by cognitions associated with personal death. It was hypothesized that anxiety related to personal death induces an individual to moderate this affective state by diminishing the frequency of cognitions concerning the future (i.e., future density) and also restricting the temporal range of cognitions concerning the future (i.e., future extension), with concomitant increases in the frequency and temporal range of cognitions concerning the past. It was also hypothesized that death-related anxiety influences the extent to which the time zones of past, present, and future are perceived as relating (i.e., temporal integration).

Subjects were 156 females (mean age, 18.4 years) who were recruited from introductory psychology classes. A posttest-only control group design was used in which subjects were randomly assigned to one of three groups: No Anxiety, Anxiety, and Death Anxiety. The manipulation involved presenting a different film to each group. An

attempt was made to arouse anxiety related to the topic of personal death in the Death Anxiety condition; a second film was shown to the Anxiety group in order to arouse anxiety unrelated to personal death; no attempt was made to arouse anxiety in the No Anxiety group, which was presented a film deemed to be "neutral."

To assess the effect of the manipulations two "state" anxiety measures were administered. The time perspective dimensions of density and extension were assessed by both a direct and an indirect method.

A one-way analysis of variance was conducted on all variables. The results did not support the hypotheses, for no significant differences were found among groups on the time perspective variables.

Several speculations were offered in an attempt to explain the results. Some of the speculations were based on the data; other speculations followed logically from theory.

Approved_____
Committee Chairman

Date_____

DEATH ANXIETY AND FUTURE TIME PERSPECTIVE

By

Barry Michael Farrell

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Psychology

1976

To Clare

ACKNOWLEDGEMENTS

I would like to express my gratitude to Dr. Albert Rabin, my thesis chairman, for his guidance and advice throughout the course of this investigation.

I would also like to thank Dr. Lawrence Messé and Dr. Andrew Barclay for their assistance and suggestions during this study.

Special appreciation is extended to my wife for her patience, encouragement, and help.

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont.)

LIST OF TABLES

INTRODUCTION

Statement of the General Problem

A temporal factor is implicit or explicit in almost every theory of personality. Most theories assume a primary influence of past experience on an individual's characteristics and behavior. Freud's theory of personality is one such example of attention being focused primarily on the determination of present behavior due to distant past and near past occurrences. On the other hand, Kelly's (1963) personal construct theory of personality emphasizes the importance of anticipation of events. The fundamental postulate of this theory is stated as follows: "A person's processes are psychologically channelized by the ways in which he anticipates events" (p. 46). This postulate can be best explained in Kelly's own words.

> Like the prototype of the scientist that he is, man seeks prediction. His structured network of pathways leads toward the future so that he may anticipate it. This is the function it serves. Anticipation is both the push and pull of the psychology of personal constructs. Man ultimately seeks to anticipate real events. This is where we see psychological processes as tied down to reality. Anticipation is not merely carried on for its own sake; it is carried on so that future reality may be better represented. It is the future which tantalizes man, not the past. Always he reaches out to the future through the window of the present (p. 49).

Freud's model is a reactive system, whereas Kelly's is anticipatory. Freud does not intend to ignore the influence of anticipation, nor does Kelly intend to ignore the influence of memory. Both theorists deal with aspects of personal time, by which is meant that an individual behaves according to cognitions which have their basis in memory and/or anticipation. They differ in regard to the degree of emphasis that is placed on the past and future. Moreover, Freud stresses memory functions which are believed to be "unconscious."

It is within this general context or framework that this study is being presented. A major assumption is made to the effect that man's behavior is influenced not only by his cognitions and reconstructions of past events but also to a great extent by his anticipations of what may come to be. If this assumption does in fact have a basis in reality, what then are the factors which dictate how man conceptualizes his past and future?

One factor that may affect an individual's temporal experience is anxiety or fear. Certainly, anticipation of personal death has potential for arousing an affective state known as anxiety. In particular, then, what effects does anticipation of personal death have on an individual's ability to conceptualize his own future? This question is the major impetus of this investigation.

Although time and death are scientifically elusive phenomena, nevertheless they are significant topics of

investigation and should not be avoided merely because the research regarding these topics is characterized by conceptual and methodological difficulties. The fact that very few studies have attempted to relate the meaning of death with the meaning of time is understandable when one considers the vagueness of the concepts, the methodological problems of measurement and operationalization of the variables, and the difficulty in developing a theoretical foundation encompassing the amorphous topics of death and futurity.

However complex the nature of the relationship may be, it is logical to expect a natural affinity between thoughts of time and thoughts of death. If personal futurity can be defined as the anticipation of events that are likely to occur in one's life, then knowledge of the inevitability and universality of death may have significant impact upon one's "future time perspective." Although there appears to be an intimate relationship between future time perspective and anticipation of death, few studies have ventured to determine the mutual implications of these two variables. Thus, an attempt will be made to integrate and organize the theoretical principles and empirical findings that have emerged from the research conducted independently within these two areas of psychological investigation.

Problems of Definition

Underlying theoretical formulations presented later in this paper is the problem of arriving at a widely accepted definition as to what constitutes death anxiety or the fear of death. Whereas some authors have advanced the idea that fear of death is a composite comprised of fear of time, decay, irreversibility, pain, loneliness, the unknown, punishment, failure, loss of the ability to think, loss of loved ones, and loss of pleasures and sensations (Gordon, 1972; Hooper and Spilka, 1970), other authors either do not specify the constituents of death anxiety or merely focus on one of the fears cited above. Moreover, still other theorists differentiate between types of death fears; Weisman (1959) made a distinction between fear of dying and fear of death, and Kastenbaum and Aisenberg (1972) have specified "fear of death," "deathly fear," and "death anxiety." It appears, then, that the notion of death anxiety has a rather ambiguous character and often is not clearly defined.

Why is it that there is so little consensus as to what death anxiety actually means? The answer lies in the fact that both the theoretical conceptualizations and operationalizations of anxiety have been rather vague in the history of psychological research. Since there appear to be as many definitions of anxiety as there are theoreticians, one is almost compelled to choose the definition which best

approximates his own notions concerning anxiety. Freud's (1936) definition of anxiety seems adequate for the purposes of this study. He defined anxiety as "the reaction to a situation of danger; usually circumvented by the ego's doing something to avoid the situation or retreat from it" (p. 65).

In addition, there is some confusion between the use of the terms "death anxiety" and "fear of death." Krause (1971) argued that there is no substantial evidence to suggest that the felt components of anxiety differ from those of fear. Freud (1963, pp. 411-412) asserted that "there are no means by which the sensations of neurotic anxiety can be distinguished from those of real anxiety (fear)." Hence, this study does not distinguish between the notions of fear and anxiety. Even though a distinction is often made between fear and anxiety, with fear referring to a specific object and possessing a more immediate and impending quality than does anxiety, the terms "death anxiety" and "fear of death" will be used interchangeably.

Thus, death anxiety may be considered anxiety which is brought on by death-related stimuli, either overt or covert. Fear of personal death need not be in the immediate awareness of the individual; that is, an individual may or may not be conscious of the fear of death as such. Although the possible nonunitary nature of fear of death has significant implications for death research, this study is mainly concerned with the variable of personal death and assumed

concomitant anxiety.

Not unlike the concept of death anxiety, the concept of future time perspective also involves theoretical difficulties. Terms concerning personal time have been imprecisely utilized in the past and are in need of clarification (Wallace and Rabin, 1960).

The following concepts suggested by Wohlford (1966, p. 559) were adopted in this study:

> An individual's personal time is the total array of his cognitions which have referents in the past or future. The past-future distinction determines temporal direction. The length of the time span encompassed by a cognition is its extension. Extension into the future is protension. Extension into the past is retrotension.

Although the dimension of extension has been considered the most potent single component of future time perspective (Wallace, 1956), other important dimensions have been distinguished. The following dimensions of psychological futurity were considered in this study: (1) future extension, the range of futurity that is conceptualized; (2) future density, the extent to which one's psychological future is populated with events and experiences (Kastenbaum, 1961; Wallace, 1961). More will be said later about future time perspective.

A Paradigm

The paradigm of the proposed interaction of anxiety and future time perspective goes as follows: An individual anticipates some future event which is threatening. As a

general rule it appears that the more remote an envisioned future event, the less impact it has on the present state of affairs. Generally a person imposes a "temporal horizon" on his anticipations of future events (Cottle and Klineberg, 1974); the future no longer becomes realistic beyond this point. If the anticipated future threat surpasses one's temporal horizon, it is likely that little anxiety will be aroused. However, if the envisioned threat falls within one's subjective future time field, anxiety will be elicited, the degree of anxiety depending upon the temporal distance from the threat. As one approaches this threat in time, anxiety level increases. If the degree of anxiety is slight or moderate, there should be no significant effects on future time perspective. Severe anxiety will result in increased attempts to reduce this anxiety, one major technique being the restriction of future time perspective. In order to avoid confronting the envisioned threat, one's future time perspective is restricted so as not to include this future event. If the threat is great and a high intensity of anxiety is aroused, often one's future time perspective is restricted to the immediate future and emphasis is placed predominantly on the present or past. When this happens, temporal integration of the past, present, and future often fails to occur.

This paradigm has several implications when one considers anxiety aroused by the threat of personal death. Freud (1925) was a major proponent of the proposition that that either a person is unable to conceive of his own

negation or death appears so remote that it is not threatening. According to this view, the prospect of death has little or no influence over an individual's future time perspective. It seems logical to expect that this argument would particularly apply when speaking about the young individual. When one is young, the threat of death may be so remote that the individual may not be capable of imagining his own death. Consequently, in constructing his future time perspective, the young adult may not consider the possibility of his own death, thereby excluding personal death altogether from his subjective future time field. In the case of youth, then, the individual may have an elongated future time perspective which does not include the event of his own death.

Death cues are widespread within society, but these stimuli appear to have very little impact on the young adult because death may actually be regarded as death-of-the-other. Death-of-oneself typically is not a realistic concern for the young person because death is considered an extremely remote point on one's subjective time line. Consequently, although an individual may be surrounded with stimuli related to death, these stimuli may go unheeded because they have little personal import; they cannot be integrated to fit in with one's experiences and cognitions. Hence, if death is not personally threatening, death cues will not arouse anxiety, and one's future time perspective will remain unaffected.

On the other hand, with advancing age death cues may have increasing impact because one may realize that he himself approaches old age and death. Death no longer has the impersonal character it once had but instead becomes a more realistic concern. This not only applies to people who realize that they are growing old, but also to people, for example, who have a terminal disease or people living in a war situation. Here the realistic possibility of death in the near future may elicit such severe anxiety that death is denied altogether and the future is ignored, with emphasis placed solely on the present or past. This reasoning closely parallels Tillich's (1959) position that man reacts to the contemplation of his own death by restricting his future outlook and denying his death altogether. Support of this position was given in a study conducted by Hackett and Weisman (1964) who found that terminal cancer patients and patients with severe myocardial disease tended to deny the threat of death and did not openly express their fear. The experimenters concluded that the patients repudiated the meaning and inevitability of death in order to minimize fear. People who know that they are going to die in the near future may neglect thinking about the future, for in neglecting the future, thoughts about death are also avoided.

One might argue that generally an individual, young or old, does not dwell constantly on thoughts of his own demise. It is possible that man continuously denies his own death and behaves as if he were immortal. Defenses

against the threat of death may be weakened, however, when facts point to the contrary and the individual must deal with prolonged or intense death cues. The young individual is prone to be more resistant (relative to the aged person) to daily environmental death stimuli and is able to withstand evidence of his own eventual death without enhanced anxiety because death may be deemed remote. The senescent individual, on the other hand, is inclined to be quite sensitive to death-related stimuli because death has become a realistically closer concern. If death cues are of great enough intensity, however, the young individual may also attempt to defend against the aroused anxiety by restricting his future time perspective.

If the inclusion of personal death in one's future time field can be brought about experimentally, what impact will this have on the individual's future outlook? In other words, if anxiety can be induced via death cues or death stimuli, how will this induced anxiety influence the person's future time perspective? According to the above analysis, if an individual can be induced to cognitively and affectively anticipate his own death, the result of this anticipation is likely to be a temporary anxiety state, which is defended against by withdrawing to more immediate expectations.

The above analysis poses the following questions regarding future time perspective and death anxiety: If life is deemed important, is it not logical to expect death

to be the greatest threat to life? If man's life is essentially oriented toward the future, if psychological futurity has overwhelming significance in human life, what impact does the anticipation of personal death have on an individual's future time perspective? Does the nature of one's future time perspective change as a result of anxiety produced by the anticipation of a bleak, unwanted future in which death is a major factor?

The Relation Between Time and Death

The above paradigm rests on a rather shaky theoretical foundation since there are several possibilities as to how the experiential aspects of time and death may be related. Numerous general theoretical formulations have been proposed to explicate the relationship between future time perspective and death anxiety. Although the following discussion is only indirectly relevant to the problem under study, it is presented mainly to sensitize the reader to theoretical problems and complexities inherent in studies of death anxiety and psychological time.

To begin with, a causal relationship may exist in which one's future outlook may influence the degree to which death is feared. As suggested by both Arieti (1947) and Bonaparte (1940), death concern may emerge from temporal awareness and anticipation. Another alternative is that an individual who has an extended future time perspective may

envision death as quite remote and consequently may be unconcerned about it (Dickstein and Blatt, 1966). A corollary to this is that the individual who has a foreshortened future time perspective may view death as occurring within the proximal future because the future has "minimal density" (i.e., future time is not filled with experiences and goals).

On the other hand, a causal relationship may also exist in which the fear of death may influence one's future outlook. It is reasonable to assume that people particularly fearful of personal death may feel less "rooted" in the world and thus may be incapacitated to plan for the future. In other words, an individual who is less fearful of death is likely to have a greater future extension and therefore may be more capable of planning for the future and coping with life's problems (Dickstein and Blatt, 1966).

In addition to the aforementioned possibilities, it may be that both a foreshortened future time perspective and a heightened fear of death are the products of a third factor. Both fear of death (Erikson, 1950) and a loss of a sense of futurity (Straus, 1947) have been discussed as being manifestations of despair.

The position taken in this paper is that the concepts of time and death are related insofar as death limits personal time and influences man's attitudes toward futurity. In particular, the anticipation of death may possibly contribute to man's knowledge that subjective/personal time is

finite, which in turn is instrumental in regulating much of man's behavior. This view of time and death emphasizes that anticipation of death creates an anxiety which involves a knowledge of the shortness of life. It is important to note that this rational approach is mirrored in what MacIver (1962) believed to be the three major facts concerning time: time is irreversible, cannot be stopped, and is oriented toward the finality of death. He pointed out that the brevity of time underlies all our actions and decisions, and that generally the above facts of time are "too insistent not to bite deeply into the emotions of men" (p. 48). Hence, although there is a possibility that the experiential aspects of psychological futurity and personal death may influence each other in a bi-directional fashion, the major assumption and focus of this study is that anxiety aroused by the anticipation of personal death influences the nature of an individual's future outlook. This assumption essentially is derived from the general contention that affect greatly influences the temporal aspects of cognitive processes and products.

Before proceeding any further in this discussion, several conceptual variables will be delineated in an attempt to assuage the ambiguity and highly abstract quality of the concepts of death anxiety and psychological time. The assumed interrelationships among the conceptual variables will be expounded so as to provide the framework for the empirical investigation. Thus, although portions of

the following discussion could be viewed as tangential to the major theme, an orientation is provided that should serve as a ground for understanding and evaluating much of the material in other parts of the paper.

The first section serves as an introduction to the notion of time perspective. The second section deals with some of the factors involved with the concept of anticipation. The third section considers in detail how anxiety and anticipation may be related. The fourth section is devoted to a theoretical discussion of the possibility of a "temporal defense" against threat, particularly the threat of personal death. The fifth section examines various theories and empirical studies which address themselves to the phenomenon of the restriction of future time perspective with advancing age. The sixth section considers death anxiety and future time perspective in adolescents. The final section deals primarily with correlational studies involving manifest anxiety and future time perspective.

REVIEW OF THE LITERATURE

Time Perspective

Frank (1939) was among the first to theorize about the meaning and nature of time perspectives. Proposing that the meaning of an event is altered as a result of imposing a time perspective upon that event, Frank speculated that the future is brought into the present and can thus be operationally defined as "that name we give to the altered dimensions of the present" (p. 299). Not to be regarded as actual entities, past, present, and future are intricately interrelated; not only is the past used to construct one's future time perspective, but the future itself presumably creates and recreates the past. Both retrospective (i.e., memory) and prospective (i.e., anticipation) time are greatly influenced by the immediate present with all its beliefs, hopes, fears, and emotional feeling tones. Frank remarked:

> If we are prone to view the future in the dimensions of the past, it may be because we are so fearful of the present, as Otto Rank has suggested, not because we love the past, but our fear of the present is born of the future time perspective that gives the present a threatening aspect, making our present situation the antecedents of events we dare not contemplate (p. 303).

Simply stated, the above quotation points out that an individual may model his future on past experiences if the

future is characterized by threatening events. In addition, a "threatening future" breeds a "threatening present" merely because present events precede future events. It appears, then, that the future determines the present and the present controls the past. To make matters even more confusing, because the future is created by the past, the past imposes its values on the present via the future. The foregoing statements are not meant to imply the reification of time zones. It is the individual himself who plays the integral role of integrating the temporal zones.

Frank also argued that forgotten past experiences cannot be integrated into the present and future and therefore have great impact on present behavior. These response patterns cannot be altered unless they are given new dimensions by imposing on them the values and meanings of the present and future. Since the future is constructed from past experiences, there is a great tendency not to construct a future time perspective based on emotional events which were so painful that they could not become a part of the ongoing process of daily experience. Only by altering one's past time perspective by projecting the past into the future and thereby bringing it into relation with the present can one avoid the consequences of a distorting past which controls one's present conduct. A distorting past which has been reconstructed to fit in with present experience also brings about a change in one's future time perspective. In the same respect, a "threatening future" may also have great

influence over one's present behavior if this future is not reconstructed to fit in with present and past experiences. Kelly (1963) took a similar view but used different terminology. The major contention here is that the temporal zones are complexly interrelated. Moreover, according to this analysis it appears that it would be difficult to integrate with the past and present the threatening future event of one's death, since personal death does not readily become a cognitive part of the ongoing process of daily experience. Consequently, because of the difficulty in reconstructing the future event of death to fit in with present and past experiences, it is likely that this threatening cognition would have great impact on present behavior (which includes the temporal aspects of cognitive processes).

To have any kind of temporal perspective, there must be at least two reference points and a relationship between these points (Kastenbaum, 1965). The person who thinks exclusively of the future or the past does not have a time perspective at all. A genuine time perspective develops as a result of integrating the present, past, and future. The individual who focuses only on one aspect of time is said to be engrossed with either the past, present, or future and therefore does not truly operate within a time perspective in a strict sense (Kastenbaum, 1965).

The term "time perspective" refers not only to a person's conception of the present situation, but also

includes his recall of past events leading up to the present state of affairs and his anticipation of future outcomes (Rokeach and Bonier, 1960). An individual who is said to have a "broad" time perspective takes into consideration all three zones of time when he conducts his behavior. On the other hand, a person deemed to have a "narrow" time perspective is too greatly oriented either in the past, or the present, or the future. A time perspective is typically past-, present-, or future-oriented. Hence, if a particular individual places little emphasis on future events but mainly dwells on the past, this individual is said to be past-oriented and has a restricted future time perspective. That is, his cognitions deal mainly with events that have already happened; he also excludes most cognitions of what may possibly occur in the future. To reiterate, future time perspective essentially refers to the extent one anticipates events and experiences in the light of the present and past (i.e., future density) and how far these events are temporally removed from the present (i.e., future extension).

Kastenbaum (1961) analyzed several dimensions of future time perspective, the predominant dimensions being extension, density, coherence, and directionality. These provide the external framework of future time perspective. The internal framework is provided by one's subjective experience of time. Kastenbaum (1963) differentiated between two kinds of futurity: personal futurity and cognitive futurity. The former implies that future time is a personal

possession, and the latter is oriented toward the use of time as a cognitive tool to organize and interpret experience. The present study focuses on the concept of personal futurity.

The Nature of Anticipation

At least three central processes appear to be involved in the ability of the individual to anticipate events (Cottle and Klineberg, 1974). First, the individual must be able to imagine events and objects which have no concrete reality in the present and impose a sense of reality on these mental images of absent events and objects. Second, the individual must have the capacity to integrate these images of the future with conceptions of meaningful past and present experiences. Finally, emotion must be linked to these images of the future if anticipation is to have any influence in the determination of behavior.

Behavior is motivated by anticipations of future events to the extent that the individual envisions himself in the particular future situation. Moreover, anticipation must arouse affect if behavior is to be influenced at all by images of the future. When anticipated events can be integrated into one's present experience, these images of the future may have a decisive influence on emotional state.

Emphasis is placed on mediating brain processes insofar as purposive behavior is involved, for essentially

behavior is not the direct response to the immediate environmental stimuli but the result of internal processes (Cottle and Klineberg, 1974). In this regard, memory and anticipation are derived from mediating mechanisms which make it possible for the individual to imagine events and objects which are temporally removed from the current situation.

Man is believed to be the only animal which does not live predominantly in the present, by which is meant that man has cognitions which have their basis in past and future events. Stimuli of perceptual experience having lost their predominance, in man alone it appears that imaginal representations of objects and events have as much influence in determining his behavior as do direct stimuli. Hence, man lives predominantly in a representational and symbolic world.

This theoretical discussion on the nature of anticipation has great significance when speaking about anticipation of death, anxiety aroused by mental images of the future, and possible ways of dealing with this anxiety.

Anticipation and Anxiety

Arieti (1947) has contributed much to the areas of death anxiety and futurity in his discussion of anticipation and anxiety. According to Arieti, there is a distinction between anticipation and expectancy. While expectancy is

"the capacity of the subject to anticipate certain events while a certain external stimulus is present" (p. 471), anticipation is "the capacity to foresee or predict future events, even when there are no external stimuli which are directly or indirectly related to those events" (p. 471). This scheme proposes that there can be no anxiety without expectation or anticipation. Whereas fright is considered a reaction to a present, immediate danger, anxiety is regarded as an emotional state which is connected with the expectancy of a danger. Very often there is a temporal lapse between the anxiety-precipitating stimulus and the actual dreaded event. The process of anticipation is implied if anxiety is maintained even after the external stimulus is removed. Considered in this way, anticipation is regarded almost exclusively as a mental process which "occupies the greatest part of man's thoughts, and consequently determines the greatest number of man's actions" (p. 475).

Freud (1936) also viewed anxiety as a reaction to a danger signal, that is, a process implying expectancy or anticipation. "Anxiety is undeniably related to expectation; one feels anxiety lest something occur" (p. 112). "It (anxiety) is endowed with a certain character of indefiniteness and objectlessness; correct usage even changes its name when it has found an object, and in that case speaks of dread" (p. 114). The cognition of personal death, which is indefinite and objectless, may arouse a certain

degree of anxiety which is of the same character. Hence, the anticipation of death may well instigate anxiety; this anxiety, to repeat, is the function of anticipation.

Based on his clinical contacts, Arieti (1947) observed that the aging individual becomes less and less concerned about the future and more interested in the present. Calling this a "restriction of the psychotemporal field," Arieti added that, ironically, fear of approaching death is felt much less intensely by old people than by young adults. If anticipation is responsible for anxiety and for knowledge of one's own death, the foreshortened future time perspective of many senescent individuals may account for lowered anxiety about death.

Although this is highly speculative, it may well be that as a result of receiving various environmental and "internal" death cues (e.g., deaths of old friends, increasing physical problems, awareness of the brevity of life) the individual may begin to anticipate his own death and thereby become anxious. As one ages and approaches death, death cues may be intensified and more numerous, the result of which would be increased anticipation and anxiety about death. To cope with or defend against this enhanced anxiety, the individual may possibly restrict his future outlook (i.e., reduce anticipation by means of focusing on the past, on the present, or on the immediate future), which in turn would aid in alleviating or assuaging his anxiety concerning death. Tentative support of this position comes

from a study conducted by Fink (1957). The results showed that the institutionalized geriatric patient tends to be more concerned with the personal past and significantly less concerned about the future than the senescent individual who is not institutionalized. Thus, more frequent and intense death stimuli provided by the institutional environment may possibly have great impact on the geriatric patient's future time perspective. Rosenfelt, Kastenbaum, and Slater (1965) also concluded that institutionalized geriatric patients appear to be preoccupied with their personal past. The above speculation is elaborated in the next section.

The Threat of Death

Closely allied with the above views is Withey's (1964) notion of allaying cognitive stress. Cognitive stress, in which an imagined threat produces anxiety, is presumed to be predominantly reduced by actually changing one's environment, modifying one's interpretation of the environment, or changing one's evaluation of oneself. Two major techniques whereby an individual can cope with prospects of distant danger may be to avoid attaching emotion to this danger or to underestimate the danger so as not to arouse anxiety. This is in agreement with the postulations of Cottle and Klineberg (1974). Stress and threat are differentiated insofar as stress exists over a relatively

short span of time and threat is extended over a longer period. The reactive behaviors, however, to both stress and threat are very similar, except that with threat it often takes longer to determine the efficacy of the anxiety-reducing behavior. The defense may be "successful" because the imagined threats simply do not materialize. For instance, the usual responses to a threat of impending danger are verification, authentication, and elaboration or search for information. It is possible that the search for information itself may result in inattention, distortion, selection, or uncertainty which is purposefully maintained. The individual's response to threat may be a distortion of the warnings or cues, and no problems will arise if the envisioned threat does not materialize. However, in the course of time one might be forced to shift to a novel adaptive or defensive response because the warning cues may become more intense or frequent. New defensive responses may take the form of rationalizations, impersonalization, suppression, or affective denial. Disbelief and distortion are likely to be enhanced by taking a temporal defense in which the danger is believed to be very remote. Withey's assertions closely parallel Osgood's (1962a) explanation of the inhibition of constructive action instigated by stress.

Although Withey's formulation was originally intended to explain people's responses to the threat of war, it can easily be applied directly to the remote danger of death, which also poses a threat to the individual. Whether

or not one wishes to regard the various techniques as adaptive/coping measures or escape/defensive measures, the proposed theoretical principles may be utilized in explaining possible reactions to the threat or anticipation of personal death. Denial and distortion of the notion of one's own death may take the form of a temporal defense such that the future itself becomes "detached" from the present; this may be achieved by investing one's emotional energies only in concerns of the present, immediate future, or past, or by convincing oneself that the danger is not so threatening after all.

Restriction of Future Time Perspective with Advancing Age

The foregoing argument has received tentative empirical support in a few studies dealing with the relationship between future time perspective and age. A theoretical discussion will precede the discussion of these investigations.

Several theories regarding the restriction of future time perspective with increasing age have been proposed. Doob (1971) attempted to explain the widespread impression that future time perspective increases with advancing age until late middle-age is reached. Whereas the child generally regards death as unreal and remote and therefore does not understand the finitude of personal time

(Nagy, 1959), the adult learns that death is universal and inevitable and perceives death as a more proximal reality. As one advances in age and death becomes more of a reality, there may be a tendency to become more oriented toward the past and to disregard the future (Doob, 1971).

Other theorists have speculated on the notion of a progressively restricted future time perspective and an extended past time perspective as one ages. Erdos (1935) contended that if earlier anticipations have been realized, then there is little that the elderly person can do but revert to the past. Butler (1964) postulated that a sense of impending death causes the senescent individual to engage in reminiscing of past experiences, a process known as the "life review." Wilen (1943) stated that the elderly may realize that there are increasingly fewer opportunities to accomplish what one pleases before death and as a result may wish to delay the future. Vischer (1947) believed that the senescent individual attempts to relive the past because he is less hopeful and expectant regarding the future. Kastenbaum (1967) hypothesized that a person would be less inclined to have a future orientation if he does not admit that he is growing old. This denial of aging may spring from the wish to be immortal or the inability to conceive of one's own death. Time may lose importance as one ages either because one is restricted in what he can do with his time or because a future perspective has minimal utility due to the proximity of death (Kastenbaum, 1966). Another

possibility is that the presumed reduction of interest in time may be a predominant defensive maneuver against the anticipation of death (Back, cited in Kastenbaum, 1966).

Cumming and Henry (1961) maintained that growing old is a process of disengagement in which the aging person gradually withdraws from interaction with the rest of society. They postulated that the expectation of death is universal, and therefore there is a mutual severing of ties between the aged individual and his society. Disengagement is said to begin when the individual becomes increasingly aware of the brevity of life and the scarcity of time which remains for him. From a theoretical standpoint, there would be no disengagement if there were no problem of the allocation of time, which in turn would alleviate the anticipation of death. The authors stated further that the allocation of time is brought into sharp focus when one accepts the certainty of death, which may occur around the age of forty when "we cease to measure our age by the distance from our birth and start to measure it by the distance from our death" (p. 224). Apprehension of death may be heightened by thoughts about the finiteness of personal time, and withdrawal or disengagement may take the form of disregarding the future and focusing on the past. The future becomes meaningless if there is so little time left and time appears to be "running out." According to Cumming's and Henry's disengagement theory, the process of disengagement may possibly have its initiation in the aged individual's

reorientation of time perspective. As death approaches one realizes more and more that personal time is finite, the result of which is an altered future time perspective.

Pollock and Kastenbaum (1964) hypothesized that the aging individual may decide that there is no point in delaying gratification because time may be perceived as running out. The results showed that young adults were better able to delay gratification than senescent individuals. Possibly the aged individual's perception of futurity and death may influence the reorientation to locate one's locus of gratification in the present and immediate future. In this respect, Birren (1964) stated that an extended future would not be a useful or acceptable mechanism if death is likely to occur in the near future. Believing that the past acts as the foundation and the future as a horizon for man's life in the present, Munnichs (1961) regarded the focal point for the aged to be the expectation of death, which in turn determines the focus of time perspective.

Kastenbaum and Durkee (1964a) found that as age increases there is a greater tendency to report no future orientation. The results supported Jung's (1959) theoretical speculations concerning the psychological parabola of life and death, for a future time perspective was displayed up to age forty, after which a reversal occurred in which a past orientation continued to increase up to age fifty-five, after which the percentage of those displaying a future orientation dropped to zero. These findings supported

previous studies (cited in Kastenbaum and Durkee, 1964a) which have shown that unfavorable attitudes toward old age are associated with the disinclination to extend one's future time perspective into later years. The bulk of data suggests that there is a tendency to increase one's future time perspective as one proceeds from adolescence to adulthood. Although the range of extension appears to remain stable as one ages, there are indications that as age increases there is a tendency to foreshorten one's future time perspective with a compensatory extension of past perspective (Kastenbaum and Durkee, 1964a).

In studies on old age, interest has been directed primarily to attitudes toward death and old age. In analyzing a group of studies which measured elderly people's attitudes on old age, Kastenbaum and Durkee (1964a) found that generally thirty to eighty percent of people over sixty-five years of age did not consider themselves to be old and that those who considered themselves old tended to have a more extensive outlook on the future when they were young. In addition, geriatric patients classifying themselves "old" regarded the future as more negative and uncertain than those who considered themselves as not being old. The latter patients either had no future outlook or reported shallow statements to the effect that everything would be fine. Hence, the results of these studies show a positive relationship between having an

extensive future outlook when young and maintaining it when old, and also a positive relationship between denial of old age and an optimistic but restricted future outlook. These results possibly characterize realistic and unrealistic attempts to cope with advancing age and death. Senescent individuals who have maintained an extended future time perspective throughout life may be better able to accept old age and the prospect of death than senescent individuals whose future time perspective is foreshortened. The latter individuals may have a tendency to deny old age altogether and may appear more optimistic in their future outlook, however restricted it is. Closely associated with this research is MacIver's (1962) "principle of receding landmarks" which states that an age which one once believed to be old is no longer old when the person reaches that age.

Future Time Perspective and Anxiety in Adolescents

The problem of future time perspective and anxiety was first studied in the field of adolescence. In a study which involved the use of a questionnaire, Meissner (1961) found that just as the future becomes more and more a source of concern and doubt for the growing adolescent male, the fear of death also increases throughout the adolescent

period. Monks (1968) concluded that apprehensions play an important role in the expectations of the future for adolescents and that there is a significant increase in apprehensions with increasing age, especially in regard to one's personal future. Findings of an experiment conducted by Kastenbaum (1959) supported the conclusions that adolescents live in the intense present, give little structure to their remote future, and view the past as risky, unpleasant, and devoid of positive values.

Summarizing studies which dealt with young people's attitudes toward old age, Kastenbaum and Durkee (1964b) came to two general conclusions: (1) old age is regarded by the young as a period of life which is radically different from other periods; (2) old age is predominantly viewed in a negative sense. In a sample of young adults, Hooper and Spilka (1970) found that positive views of the remote future were associated with a long-range perspective being organized, filled with events and goals, and possessing direction. Moreover, death was viewed negatively when expectations of death also involved anticipation of pain, loneliness, and other negative conditions.

Kastenbaum (1959) postulated a subjective time line which each individual constructs for himself. This time line is composed of past, present, and future points which are grouped to create time fields. Each time field is invested with a certain degree of value and meaning. In this respect, the future time field which one has projected forward

influences one's behavior in the present. As death approaches and becomes a realistically closer concern, an individual's subjective time fields may possibly become progressively influenced by the nature of the imagined future field which includes personal death.

It appears on the basis of the study conducted by Kastenbaum (1959) that the adolescent shapes his present time field and immediate future by a structuring principle which includes the notions of fullness, activity,and reality. On the other hand, distal and unstructured time fields prevail under the domination of death-related concepts of emptiness, passivity, and termination. In other words, all concepts except death appear to be entailed in shaping the present and proximal future time fields of the adolescent; the distal future appears to be constructed under the influence of the concept of death.

As the individual advances in age there appears to be a concomitant increase in the degree of uncertainty. The above studies involving adolescents have shown that typically the adolescent is preoccupied with thoughts of the proximal future, to the exclusion of thoughts of the distal future. There is a good possibility that fears of aging and death may have a tremendous impact on the extent to which one considers his later years. The tendency to ignore one's remote future may possibly be related to fears of aging and death. Adolescents appear to express fear of death more readily than do senescent individuals; if this is the case and

adolescents essentially experience time in its directional aspect (i.e., as moving forward with increasing speed), then death itself may be the greatest threat to the adolescent merely because death is the termination of all development (Kastenbaum, 1966).

Correlational Studies

There seems to be an implicit relationship between anxiety and defense against an unknown or undesirable future. Cottle and Klineberg (1974) remarked, "More than any other emotion, anxiety reflects the ambiguities and the complexity inherent in a person's efforts to come to grips with the dimension of time" (p. 27). If there is a relationship between anxiety and orientation toward the future, then this relationship is apt to be quite complex.

There have been a few studies which have dealt directly with the correlation between anxiety and future time perspective. Dickstein and Blatt (1966) conducted a study which dealt with death concern, futurity, and anticipation in adolescents. The results suggested that heightened death concern is related to less anticipation and a foreshortened future time perspective. In other words, those who showed high manifest preoccupation with death seemed to live more in the present than in the future.

A significant negative correlation between future time perspective and manifest anxiety was also found by

Epley and Ricks (1963). Level of anxiety was found to be inversely related to the use of present and future tenses in one study conducted by Krauss and Ruiz (1967), but in a later study the functional relationship between anxiety level and present-future time perspective was found to be curvilinear, such that those individuals low or high in anxiety tended to make use of the past tense instead of present and future tenses (Ruiz and Krauss, 1968). Albers (1966) also noted that anxiety was negatively related to future time perspective for both males and females, but only males with high manifest anxiety tended to have a constricted past extension. Albers concluded that for males there appears to be a construction of future extension up to a certain anxiety level but thereafter a tendency for an extended future outlook. A study which correlated the level of anxiety in a real-life situation with the use of verb tense reported a significant positive correlation between anxiety level and the use of the present tense (Krauss, et al., 1967). Platt and Eisenman (1968) also found that subjects with lower anxiety had greater future extension and density.

Contrary to the above results are the findings of Rokeach and Bonier (1960) who reported that highly anxious subjects used the future tense significantly more and the present tense significantly less than subjects low in manifest anxiety. The authors concluded that anxious subjects coped with their anxiety by deemphasizing the

present and preoccupying themselves with the future. Considering the notion of the adoption of a future time perspective as a defense against anxiety, then, Rokeach and Bonier pointed out that there are actually two forms of future orientation, one of which negates the present, the other focusing on the future in order to emphasize the present. Siegman (1961) also found a significant positive correlation between manifest anxiety and future time perspective. The results suggested, in other words, that the greater the future extension, the greater the uncertainty and anxiety.

The conflicting findings cited above may be explained by proposing that anxiety represents neither a pessimistic nor an optimistic emotional state but rather a state of uncertainty. If the future were unambiguous, one might expect a clearly hopeless, bleak future to result in a limited future time perspective, and a positively valenced future to result in an enhanced future perspective. An anxious person is uncertain about the future and lacks a clear cognitive structure of the present and the future (MacKinnon, 1941). Moreover, conflicting hopes and fears rage within the anxious individual when he confronts the future (McDougall, 1923). Hence, the relation between temporal perspective and anxiety is equivocal, for it appears that the individual adopts the temporal orientation which best reduces anxiety (Rokeach and Bonier, 1960).

Temporal integration or relatedness (i.e., the degree

to which the time zones of past, present, and future are perceived as relating) may well be enhanced if the degree of anxiety remains moderate, for it is likely that anxiety functions as the major motivation to impose the envisioned future upon present actions (Ruiz and Krauss, 1968). If the future appears bleak and uncontrollable and if one does not experience reassurance as a consequence of his present behavior, then anxiety is likely to increase in intensity and the individual may focus his efforts on ways by which he can reduce the anxiety. One possible means of effecting this would be a restriction of future outlook and a preoccupation with the present or past. Moderate anxiety may enable the individual to extend his future perspective as he attempts to search for ways to control the envisioned future. Severe anxiety may be instrumental in the mutilation of temporal integration in which the remote future becomes "detached" from the present and past.

Cottle and Klineberg (1974) stated that when a person "confronts the probability of something unpleasant, he tends to stop thinking about the future, turning instead to the present or the past, wherein events are less threatening if only because they have already occurred" (p. 23). There may be a tendency for most people to restrict their future time perspective to the immediate future to avoid confronting a future which appears undesirable and unpleasant.

When the future looks bleak, the process of temporal integration (i.e., linking of images of the future with conceptions of the past and present) is likely to break down. Unemployed workers have been found to have a restricted future outlook (Israeli, 1936); thoughts about the future were avoided because these anticipations may have renewed the worker' fears. Coser and Coser (1963) have noted a similar restriction of future time perspective under conditions of social instability. They referred to this phenomenon as a "mutilation or destruction of time perspective."

The phenomenon of antepression which operates to inhibit the anticipation of unpleasant experiences has had some empirical backing. Soldiers have been found to have a foreshortened future time perspective (Stouffer, 1949); prisoners were found to be unable to plan for the future (Bettleheim, 1958); young adults tended to suppress anticipation of unpleasant future events (Wohlford, 1966).

Finally, future time perspective has been found to be foreshortened in subjects of lower socioeconomic class (LeShan, 1952), delinquents (Barndt and Johnson, 1955), depressives (Straus, 1947), and schizophrenics (Wallace, 1956), relative to controls. These individuals may be influenced by a common affect such as anxiety.

Summary and Hypotheses

On a theoretical level, cognitions of one's own

future (i.e., psychological futurity) and cognitions of personal death may have a causal relationship in that either set or network or cognitions may influence the nature of the other set. The focus of this study is to determine the degree to which anxiety, assumed to be created by cognitions of personal death, affects one's future outlook. It is assumed that a person's fears concerning the nature and meaning of personal death directly influence psychological futurity, which in turn has impact on present behavior, both covert and overt. In effect, death anxiety may regulate behavior via intervening variables, one of which is hypothesized to be future time perspective.

Assuming that anticipation of personal death poses a psychological threat to the individual, an escape/defensive measure may take the form of a temporal maneuver such that the future becomes "detached" from the present. This defense may be put into operation by investing concern and emotion only in the present, past, and immediate future (i.e., restricting future extension and density). This hypothesized temporal technique to deal with anxiety initially generated by anticipatory cognitions may be manifested in an individual's preoccupation with his past life and an avoidance of thinking realistically about the future. Thus, in anticipating an event that induces negative affect such as anxiety, an individual may mitigate this affective state by restricting his cognitions about future events, especially events that are temporally and psychologically

close to the dreaded event. However, there is no guarantee that the anxiety will be totally abolished. The temporal/psychological technique of dealing with severe anxiety may only reduce severe anxiety to moderate levels of anxiety.

The primary purpose of this study is to explore the relationship between future time perspective and anxiety aroused by cognitions associated with personal death. It is hypothesized that the negative affect produced by the anticipation of personal death tends to restrict or shorten future extension. The threat of death induces the individual to avoid confronting the cognitions of personal death by focusing on the past, present, and/or immediate future. This foreshortened future time perspective is a cognitive manifestation of a process that minimizes negative affect such as anxiety. In effect, this restriction of future outlook is a manifestation of denial or repression. Moreover, anxiety induced by anticipating personal death also tends to decrease the frequency of cognitions concerning the future, with compensatory increases in cognitions concerning the present or past.

In summary, this paper focuses on the mediating mechanisms involved in the interaction between anxiety and future time perspective. The anticipation of the threatening future event of personal death is apt to elicit anxiety. Anxiety, in turn, influences the individual to reduce this affective state by restricting future extension and diminishing the frequency of cognitions concerning

the future, with concomitant increases in past extension and past density. When this occurs, temporal integration also begins to break down.

Thus, relative to the control conditions, the experimental treatment (Death Anxiety), in which an attempt is made to arouse anxiety related to personal death, is expected to influence the individual to restrict the temporal range of cognitions concerning the future (i.e., future extension), to diminish the frequency of cognitions concerning the future (i.e., future density), and to decrease the degree to which the time zones of past, present, and future are perceived as relating (i.e., temporal integration). In addition, the subjects in the Death Anxiety condition are expected to exhibit an elongated past extension and an increased past density relative to subjects in the control groups.

METHOD

Subjects

A sample of 156 females was recruited from introductory psychology classes at Michigan State University. The mean age was 18.4 years.

Anxiety Measures

The Affect Adjective Check List (AACL) (Zuckerman, 1960) was one of the measures given to assess the effect of the manipulations. The scoring key included 21 words, which are listed below:

> Anxiety-plus words: afraid, desperate, fearful, frightened, nervous, panicky, shaky, tense, terrified, upset, worrying
>
> Anxiety-minus words: calm, cheerful, contented, happy, joyful, loving, pleasant, secure, steady, thoughtful

Anxiety-plus words were scored 1 if checked, and anxiety-minus words were scored 1 if not checked. The possible range of scores was 0 to 21.

A semantic differential, involving six seven-point scales of bipolar adjectives relating to anxiety vs. non-anxiety, was constructed for this study. Subjects were instructed to mark each scale "according to how you feel at this moment." Scores were summed across scales and

divided by the number of scales to obtain a mean anxiety score, such that the higher the score, the higher the degree of anxiety. The possible range of scores was 1 to 7.[1]

In addition to the AACL and the semantic differential, Templer's (1970) Death Anxiety Scale (DAS) was administered. Although no differences among groups were predicted for this measure, it was utilized so that correlational analyses could be conducted involving a death anxiety scale (trait anxiety).

Time Perspective Measures

Time perspective variables were assessed by a direct measure and by an indirect measure. The direct method was a modification of a measure which permits the joint assessment of direction and extension of personal time, the Experiential Inventory (Cottle, 1968). The instructions were as follows:

> Please list twenty important experiences of your life. These may be experiences you have had, you are having, or you expect to have. You only need to write a few

[1] Scales that measure a "general level of anxiety" (i.e., trait anxiety) are not considered adequate in detecting a change in anxiety level where an attempt is made to experimentally induce anxiety; the temporal referent of items on these tests is vague, and subjects may interpret the questions as referring to the last week, month, year, or lifetime. Thus, the adjective check list and semantic differential methods seemed suited for the purposes of this study since the temporal referent of items on these scales was unambiguous. It was assumed that the AACL and the semantic differential measured the present degree of anxiety (i.e., state anxiety).

words for each experience, and you may list your experiences in any order you wish.

This inventory was designed to study how a person places his important experiences in time. Up to this point temporal orientations were implicit. A second set of instructions were administered after the twenty experiences were listed. The instructions for this part were presented on a second sheet in order to minimize their influencing the original listing procedure.

Now that you have listed twenty experiences, please study the time zones shown below:

Time Zones
1. Distant Past
2. Near Past
3. Present
4. Near Future
5. Distant Future

Now, take each experience and decide if it has occurred, is occurring, or will occur. Then choose the number from the time zone list that best represents the time of the experience and write this number in front of the experience. Do this for all twenty experiences.

An experience that you have listed may be so general that it is possible to assign to the experience several time zones. Choose one and only one time zone that best represents the time of the experience.

An experiential mean was calculated by summing the numbers of the listed time zones and dividing this number by 20. Essentially, it was assumed that this score indicates the degree to which a person chooses to anticipate experiences. The higher the score, the more future oriented the person, or putting it another way, the more his dominant experiences become anchored in the future. In effect, this

is a measure of degree of future extension. The possible range of scores was from 1 to 5, with a score of 1 referring to a distant past orientation and a score of 5 referring to a distant future orientation.

The mean is misleading, however, particularly in the center of the distribution of scores. For instance, a mean of 3.0, theoretically a perfect present orientation, may result from dividing experiences equally between the past and future, thus masking an avoidance of present experiences. Consequently, interpretation of this score must be made with caution. Although the experiential mean may be misleading at times, in most cases a higher score would still signify a greater degree of future extension than would a lower score.

Future density was determined by summing the number of experiences listed in the near future and distant future time zones. Past density was determined by summing the number of experiences listed in the near past and distant past time zones. Present density was determined by summing the number of experiences listed in the present time zone.

For the indirect method, four cards from Murray's TAT (12F, 13MF, 15, 16) were administered in a counterbalanced order according to Atkinson's (1958, p. 837) recommendations, except that the standard instructions calling for antecedents and consequences were printed together on the top of each story sheet instead of having a three-inch space for writing following each question.

Subjects were instructed "to tell a story that is suggested to you by each picture." Being given a two-minute and also a one-minute warning as to how much time remained before the next picture would be presented, subjects were instructed that they would have 20 seconds to look at each picture and then four minutes to write their story about it. In fact, each picture remained displayed throughout the four-minute writing period.

Stories were analyzed for frequency of usage of the past, present, and future tenses. The assumption is that the relative frequency of tense used is an index of time perspective (Rokeach and Bonier, 1960). In other words, this is an assumed measure of past, present, and future density.

In addition, after the subjects completed all four stories, they were asked to indicate how much time elapsed in the action of each story. Presented a line six inches long, intersected at the middle, subjects were requested to represent where they felt each story began and where it ended by marking off one point to the left and one point to the right of the midpoint, respectively. The methodology of a "time line" was assumed to facilitate the reporting of subjective "estimates" of past and future extension; temporal extensions are translated into a spatial mode by drawing estimations as lengths of a line. The degree of extension into the past and into the future was measured by the length of the line marked off to the left and to the

right of the midpoint, respectively (Wallace, 1956). Thus, each eighth inch of the line that was marked off received a score of 1. The possible range of scores for both past extension and future extension was 0 to 24.

Temporal integration or relatedness was examined by the use of the Circles Test (Cottle, 1967). The instructions for this test were as follows:

> Think of the past, present, and future as being in the shape of circles. Arrange these circles in any way you want that best shows how you feel about the relationship of the past, the present, and the future. You may use different size circles. When you have finished, label each circle to show which one is the past, which one is the present, and which one is the future.

Temporal relatedness was operationalized as the degree to which drawings showed circles touching one another, or overlapping partially or completely. An integration score was the summation of all three sets of potential "borders": past-present, past-future, present-future. If two circles were completely separated they were awarded a score of 0; just touching circles earned 1 point; partially overlapping circles were awarded 2 points; 3 points were awarded when circles were drawn one within the other. The range of scores was 0 to 9, such that the higher the score, the greater the degree of temporal integration. Even though one value may actually represent two or more discrete configurations, a higher score still signifies a greater degree of temporal relatedness than does a lower score.

Procedure

A posttest-only control group design was utilized in this experiment. Subjects were randomly assigned to one of three groups: No Anxiety, Anxiety, Death Anxiety. In the experimental condition (i.e., Death Anxiety) subjects were presented a film entitled "Death on the Highway" (approximately 15 minutes long). This film which involved morbid scenes of traffic fatalities was shown in an attempt to induce anxiety related to personal death.

Subjects assigned to this experimental treatment were read the following:

> The experiment in which you are about to participate may cause some degree of nervousness or anxiety. In order to guard against any adverse effects I would like you not to participate if you have had a close relative or friend die recently, or you have an extreme aversion to being reminded about death.

If the subject reported that any of the above categories applied to her, she was not expected to participate in the experiment. Otherwise the experiment continued and subjects were read the following:

> If, at any time, this experiment becomes too anxiety-provoking (or makes you too nervous), and you wish to stop the experiment, please leave the room quietly and wait until I come to get you.

To increase the impact of this film, prior to presentation subjects were read the following:

> The film you are about to see involves the topic of death. All of us know that death is inevitable and that someday we too must die. Because death is universal it is a significant event in all of our lives.

It was assumed that this manipulation would induce some degree of anxiety if the subject accurately perceived the death-related stimuli and adapted to the idea of personal death.[2]

Subjects in one control group (Anxiety) were shown a film (approximately 10 minutes long) involving human birth scenes (i.e., cesarean section, breech delivery) in order to arouse anxiety that was unrelated to the topic of personal death. No attempt was made to arouse anxiety in the No Anxiety control group, which was presented the film, "Ontario: A Place to Stand" (approximately 15 minutes long).

Four to six subjects were tested per experimental session. Following presentation of the film, subjects were instructed to complete each measure, which were arranged in the following order: AACL, semantic differential (SEM), Experiential Inventory (EI), TAT, time line, Circles Test, DAS. Subjects were instructed not to turn pages of the test booklet until they were told to do so. (See Appendix A for further information about the measures.)

[2] None of the subjects in the Death Anxiety condition left the room before or during the presentation of the film.

RESULTS

Reliability of Measures

The reliability of each measure was estimated by employing coefficient alpha (or Kuder-Richardson Formula 20): AACL, .85; semantic differential, .92; DAS, .55; Experiential Inventory, .78; time line, .61. All are significantly different from zero at the .0001 level, except the reliabilities of the Experiential Inventory and the time line, both of which being significant at the .008 level. The DAS and time line have only modest reliabilities. However, reliabilities of .60 or .50 are considered to be adequate to permit their use in basis research (Nunnally, 1967).

Each TAT story was analyzed merely for frequency of use of the past, present, and future tenses. Due to the highly objective nature of the variable being considered, TAT protocols were not scored independently by different raters to estimate reliability. To conserve on time and energy, it was assumed that the reliability of the TAT in providing a measure of temporal density was sufficient for research purposes.

It was not possible to estimate the reliability

(i.e., "internal consistency") of the Circles Test due to the nature of the instrument. The test-retest method of estimating reliability could not be employed. No prior studies have estimated the reliability of this measure.

Correlations Among Anxiety Measures

The measures of anxiety were found to correlate highly with one another and were similarly affected by the experimental treatments. The correlation between the semantic differential and the AACL was significant at the .00001 level ($r = .83$); the correlation between the semantic differential and the DAS was modest but significant at the .001 level ($r = .23$); a low but significant correlation was also found between the AACL and the DAS ($r = .22$, $p < .002$). The above correlations were based on scores of the total sample. Correlations between anxiety measures were also determined for subjects in each treatment condition. As expected, the AACL and DAS correlated significantly only for the Death Anxiety group ($r = .44$, $p < .0005$). In other words, subjects in the Death Anxiety group who had relatively high scores on the AACL also tended to have relatively high scores on the DAS. On the other hand, subjects in the No Anxiety and Anxiety conditions who had relatively high scores on the AACL did not necessarily have high scores on the DAS. A similar relationship held for the semantic differential. Apparently, the significant

correlations between the DAS and AACL and between the DAS and SEM for the total sample can be accounted for mainly by the significant correlations found in the Death Anxiety condition.

Tests of planned comparisons were conducted on the mean anxiety scores of each group.[3] Mean anxiety scores and standard deviations of each group are presented in Table 1. Table 2 presents *t* values of the planned comparisons. Contrasts involving the DAS were two-tailed *t* tests. In regard to the state anxiety measures, all contrasts were one-tailed *t* tests except when comparing the Death Anxiety and Anxiety groups.

Table 2 indicates that there was a significant difference for all contrasts in regard to mean anxiety scores on both state anxiety measures. The Death Anxiety group scored significantly higher on both measures than the No Anxiety and Anxiety groups; there was also a significant difference between the No Anxiety and Anxiety groups on both measures. The mean DAS score for each

[3] Some statisticians have maintained that planned comparisons must be independent or orthogonal in the sense that they should provide nonredundant information. However, the position taken in this paper is in agreement with the position of both Winer (1962) and Keppel (1973) who state that the critical feature of planned comparisons is their a priori nature, not their independence. Thus, although the planned comparisons are partially redundant, each has been evaluated at the same per comparison error rate. It is argued that this procedure does not capitalize on chance in the same way as unplanned or post-hoc comparisons. In this study the contrasts were determined in advance on the basis of theory. It is assumed that this departure from rigid statistical analysis is not a serious violation in terms of greatly capitalizing on chance.

TABLE 1

MEAN ANXIETY SCORES AND STANDARD DEVIATIONS

Variable	Group					
	No Anxiety		Anxiety		Death Anxiety	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
AACL	7.48	3.19	10.13	3.89	13.63	2.77
SEM	2.88	1.27	3.69	1.52	5.23	1.08
DAS	7.55	2.17	7.51	2.54	7.86	2.31

TABLE 2

t VALUES OF PLANNED COMPARISONS INVOLVING ANXIETY MEASURES

Variable	Contrasts		
	Anxiety-No Anxiety	Death Anxiety-Anxiety	Death Anxiety-No Anxiety
AACL	4.08**	5.37**	9.45**
SEM	3.17*	6.04**	9.21**
DAS	.07	.69	.62

*$p < .002$.

**$p < .0001$.

group was not expected to differ significantly from each other because the DAS was originally designed to measure a relatively stable trait, and the treatments were not expected to affect trait anxiety. As predicted, the differences between groups on this variable were found to be statistically insignificant.

The findings merely suggest that "anxiety" was being measured by the above instruments, and that the experimental treatments were effective in arousing statistically different degrees of anxiety. The fact that the semantic differential and the DAS correlated significantly only for the Death Anxiety group suggests that to some extent the DAS was measuring degree of anxiety related to death.

At this point it is difficult to say for sure exactly what is being measured by these instruments because there is no factorial structure information available on these tests. As a result one must be extremely cautious in interpreting the data.

One last point should be made concerning the anxiety measures. An attempt was made to arouse the same degree of anxiety in both the Anxiety and Death Anxiety groups by means of different stimuli. It was assumed that two individuals can possess the same degree of anxiety in a quantitative sense, yet the anxiety may differ qualitatively. To some extent the manipulations were not effective in that the Anxiety and Death Anxiety groups were found to

differ significantly in degree of anxiety aroused. Consequently, the two groups differed in regard to anxiety both in a quantitative and qualitative sense. Thus, it is difficult to determine to what degree the quantitative and qualitative aspects of anxiety differentially affected the various dependent variables.

In conclusion, even if the above measures tend to correlate highly with one another and are similarly affected by the experimental treatments, this does not necessarily mean the construct of anxiety can legitimately be employed to account for the data. It is necessary that the condition of consistency be met for construct validity, but this is not a sufficient condition. The size of the coefficients may well have been affected by common variance which may have arisen because of similarities in method. The methods of the three anxiety measures had similar stimulus patterns and type of response, which may have affected the measurements in a systematic fashion. Hence, according to Campbell and Fiske (1959) these methods are said to have "convergent validity" since the coefficients are significantly greater than zero. Although this requirement has been satisfied, however, this is not sufficient evidence that the measurements have "discriminant validity" (i.e., construct validity).

Correlations Among Time Perspective Measures

Whereas there is some tentative evidence that the

present anxiety instruments measured what they are purported to measure, the case is not as positive for the various measures of the dimensions of time perspective. The correlation matrix of scores on these measures for the total sample is presented in Table 3.

Scores on measures 1 and 3 were expected to correlate highly and positively because both tests supposedly measure degree of future extension. Although this correlation was found to be significant at the .004 level ($r = .20$), this is a relatively low correlation for measures which are supposed to be measuring the same variable.

Scores on measures 1 and 2 were expected to correlate highly and negatively because the lower the score on measure 1, the greater the past extension, and the higher the score on measure 2, the greater the past extension. The correlation between these two measures was found to be insignificant.

Measures 4 and 7 did not significantly correlate with each other even though both were measures of past density. Measures 5 and 8 did not significantly correlate with each other even though both were measures of present density. Measures 6 and 9 did not significantly correlate with each other even though both were measures of future density.

No predictions were made concerning the correlations between TAT past density and integration, and between TAT future density and integration. These correlations were

TABLE 3

CORRELATIONS AMONG TIME PERSPECTIVE MEASURES

	1	2	3	4	5	6	7	8	9
1									
2	.008								
3	.20**	-							
4	-.93**	-	-						
5	.28**	-	-	-.53**					
6	.91**	-	-	-.83**	.01				
7	-	.01	-.18**	-.04	.11	-.01			
8	-	-.003	.14*	.02	-.06	.01	-.87**		
9	-	.009	.09	.01	-.05	-.002	-.39**	-.07	
10	-	.02	-.03	-.005	.004	.009	.14*	-.08	-.12*

Note. The numbers in the margins refer to the following measures of time perspective: experiential mean (1), time line past extension (2), time line future extension (3), Experiential Inventory (EI) past density (4), EI present density (5), EI future density (6), TAT past density (7), TAT present density (8), TAT future density (9), temporal integration (10).

*$p < .05$.

**$p < .01$.

small but significant. According to these correlations, the greater the past density and the less the future density, the greater the temporal integration.

All other significant correlations in the matrix are merely artifactual due to the manner in which variables were derived from some of the time perspective measures.

The intercorrelations among the various measures of the dimensions of time perspective were also computed for each group. None of the pertinent correlations were consistently significant across the three groups of subjects.

Thus, since the relevant correlations among the measures are close to zero, one would have to conclude that they measure different things. In other words, there is no evidence to suggest that these measures have adequate construct validity (or even adequate convergent validity). As mentioned previously about the anxiety measures, it is difficult to say for sure exactly what is being measured by these instruments since there is no factorial structure information available.

Findings

Table 4 presents the mean score and standard deviation of each group on each time perspective variable. A between-within analysis of variance comparing the performance of the three groups on all measures was carried out on the data. The analyses indicated that the group effect

TABLE 4

MEAN SCORES AND STANDARD DEVIATIONS OF EACH GROUP ON TIME PERSPECTIVE VARIABLES

Variable	Group					
	No Anxiety		Anxiety		Death Anxiety	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Experiential Mean	2.52	.56	2.67	.51	2.52	.59
Time Line Past Extension	8.53	4.69	9.67	4.87	8.41	4.46
Time Line Future Extension	7.90	4.50	9.53	7.08	8.50	5.57
EI Past Density	11.57	4.44	10.80	3.94	11.86	4.64
EI Present Density	3.92	2.84	3.36	2.25	3.23	2.12
EI Future Density	4.63	3.70	5.80	3.70	4.90	3.61
TAT Past Density	29.63	18.02	30.00	20.92	29.75	17.19
TAT Present Density	59.13	18.09	58.00	18.03	54.96	15.48
TAT Future Density	11.23	8.88	12.55	8.45	15.28	9.58
Temporal Integration	3.53	2.88	3.21	2.76	2.69	3.00

TABLE 5

SUMMARY OF ANALYSIS OF VARIANCE FOR EACH TIME PERSPECTIVE VARIABLE

Variable	MS_B	F[a]
Experiential Mean	.40	1.29
Time Line Past Extension	25.26	1.15
Time Line Future Extension	35.39	1.04
EI Past Density	15.54	.82
EI Present Density	7.00	1.19
EI Future Density	19.63	1.45
TAT Past Density	1.81	.005
TAT Present Density	242.09	.81
TAT Future Density	222.58	2.75
Temporal Integration	9.46	1.13

[a] all *F* values are nonsignificant ($p < .05$)

was not significant ($p < .05$) for any variable. Table 5 presents a summary of the analyses of variance conducted on the data.

DISCUSSION

The findings presented above generally do not support the hypothesis that anxiety related to personal death influences an individual's future time perspective, such that the individual restricts his future extension and diminishes the frequency of cognitions concerning the future (i.e., future density) with concomitant increases in past extension and past/present density. In particular, the Death Anxiety group was not found to have a restricted future extension and an extended past extension relative to either control group. Moreover, no significant differences were noted among groups in regard to past, present, or future density. Similarly, there were no significant differences among groups in regard to temporal integration.

The following points are offered as mere speculations in an attempt to interpret these results.

First of all, the manipulations themselves may have been deficient. It is plausible that the attempt to arouse anxiety related to personal death was not effective in the sense that the individual may not have been induced to cognitively and affectively anticipate his own death. As argued previously, the young individual may be prone to be more resistant to daily environmental death stimuli and may

be able to withstand evidence of his own eventual death without enhanced anxiety because death may be deemed remote. Although there was a significant difference between the Death Anxiety group and control groups in regard to degree of anxiety aroused (as measured by the AACL and semantic differential), this does not necessarily mean that the anxiety aroused in the Death Anxiety group was of the same quality as anxiety experienced by people facing death in real-life situations. Stated in another way, the inclusion of personal death in the subject's future time field may not have been brought about experimentally.

An argument related to the above can be advanced. It was mentioned earlier that death-related stimuli may have very little impact on the young adult because death may actually be regarded as death-of-the-other. Death-of-oneself may not be a realistic concern for the young person because death may be considered an extremely remote point on one's subjective time line. Consequently, although an individual may be surrounded with stimuli related to death, these stimuli may go unheeded because they have little personal import; they cannot be integrated to fit in with one's experiences and cognitions. Hence, if death is not personally threatening, one's future time perspective would remain unaffected.

Kelly (1963) offered some pertinent remarks that may be applied here:

The construct of danger is a threat when it becomes

> an element in the context of death or injury. There are circumstances when it is not a threat, at least not a very significant one. A rollercoaster elicits a construct of danger, but that danger is rarely placed in the context of death.(p. 166).

In the same respect, the act of viewing automobile accidents may elicit a construct of danger, but it is not necessarily the case that this danger is placed in the context of one's own death. In other words, being cognizant of another's death is not necessarily threatening personally.

Certain results of the present investigation offer partial support of this argument. Subjects were instructed to rank seven items according to the degree of anxiety or fear which they aroused, with 1 being assigned to the item which aroused the greatest degree of anxiety. Table 6 displays the mean rankings of the seven items for the total sample and each group. In the total sample and in each individual group "death of a loved one" aroused the greatest degree of anxiety; whereas 77% of the subjects ranked "death of a loved one" first, only 12% ranked "death of oneself" first. This finding could be interpreted by saying that personal death generally is not a realistic concern for the young adult female, and that death is generally regarded as death-of-the-other, particularly death-of-a-loved-one.

The third argument, which also refers to the manipulations, can be stated simply. The death cues in the Death Anxiety condition may not have been of a great enough intensity to have induced the individual to restrict her future time perspective.

TABLE 6

MEAN RANKINGS OF ANXIETY ITEMS

Anxiety Items	Group			
	Total	No Anxiety	Anxiety	Death Anxiety
Death of a Loved One	1.36	1.40	1.42	1.27
Cancer of the Breasts	3.09	3.27	3.20	2.84
Death of Oneself	3.15	3.27	3.30	2.93
Giving Birth to a Child	4.30	4.40	4.05	4.45
Taking a Classroom Exam	4.75	4.83	4.50	4.90
Death of a Stranger	5.10	4.91	5.02	5.34
Menstruation	6.19	5.89	6.50	6.15

As stated previously, the fact that there were no significant correlations between instruments assumed to be measuring the same variable is supportive of the contention that the instruments lack construct validity.

It is next to impossible to make any general conclusions based on the results of this investigation since the sample was restricted to one sex and a very limited age range. It would be advantageous for further studies to utilize a factorial design, employing both sexes and different age levels from adolescence to senescence.

SUMMARY

The primary purpose of this exploratory investigation was to determine the relationship between death anxiety and future time perspective. It was hypothesized that anxiety produced by cognitions associated with personal death influences the individual to restrict or shorten future extension and also to decrease the frequency of cognitions concerning the future. If was also hypothesized that temporal integration begins to break down as a direct consequence of the restriction of future time perspective.

A posttest-only control group design being utilized, subjects were randomly assigned to one of three groups: No Anxiety, Anxiety, Death Anxiety. Each group was presented a film; an attempt was made to manipulate level and quality of anxiety in the Anxiety and Death Anxiety groups, whereas no attempt was made to induce anxiety in the No Anxiety condition.

To assess the effect of the manipulations two "state" anxiety measures were administered. The time perspective dimensions of density and extension were assessed by a direct measure and an indirect measure.

A one-way analysis of variance revealed that there were no significant differences with respect to the time

perspective variables under consideration. Thus, in general the results did not support the present hypotheses.

Several speculations were made in an attempt to analyze the results in a psychologically meaningful manner. Some speculations had their basis in theoretical formulations, whereas other speculations were closely related to empirical data. In conclusion, further investigations of this type should utilize: (1) a factorial design, employing different age levels and both sexes; (2) different means to arouse anxiety, such that there is a high degree of "mundane realism"; (3) time perspective measures of known factorial composition. Adherence to the above recommendations, although difficult to execute, would generate a great deal of information and would guarantee more interpretable results.

BIBLIOGRAPHY

BIBLIOGRAPHY

Albers, R. J. Anxiety and time perspectives. Dissertation Abstracts, 1966, 26, 4848.

Arieti, S. The processes of expectation and anticipation. Journal of Nervous and Mental Disorders, 1947, 106, 471-481.

Atkinson, J. W. (Ed.) Motives in fantasy, action, and society. Princeton, N. J.: Van Nostrand, 1958.

Barndt, R. J., and Johnson, D. M. Time orientation in delinquents. Journal of Abnormal and Social Psychology, 1955, 51, 343-345.

Bettelheim, B. Individual and mass behavior in extreme situations. In E. E. Maccoby, T. M. Newcomb, and E. L. Hartley (Eds.), Readings in social psychology. New York: Holt, 1958, 300-310.

Birren, J. E. The psychology of aging. Englewood Cliffs, N. J.: Prentice-Hall, 1964, 273-288.

Bonaparte, M. Time and the unconscious. International Journal of Psychoanalysis, 1940, 21, 427-468.

Burns, N. M, and Gifford, E. C. Time estimation and anxiety. Journal of Psychological Studies, 1961, 12, 12-27.

Butler, R. N. The life review: An interpretation of reminiscence in the aged. In R. Kastenbaum (Ed.), New thoughts on old age. New York: Springer, 1964, 265-280.

Campbell, D. T., and Fiske, D. W. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin, 1959, 56, 81-105.

Caprio, F. S. A study of some psychological reactions during prepubescence to the idea of death. Psychiatric Quarterly, 1950, 24, 495-505.

Cohen, S. E., and Mezey, A. G. The effect of anxiety on time judgment and time experience in normal persons. Journal of Neurology, Neurosurgery, and Psychiatry,

1961, 24, 266-268.

Coser, L. A., and Coser, R. L. Time perspective and social structure. In A. W. Gouldner and H. P. Gouldner (Eds.), Modern sociology: An introduction to the study of human interaction. New York: Harcourt, Brace, and World, 1963.

Costa, P., and Kastenbaum, R. Some aspects of memories and ambitions in centenarians. Journal of Genetic Psychology, 1967, 110, 3-16.

Cottle, T. J. The circles test: An investigation of perceptions of temporal relatedness and dominance. Journal of Projective Techniques and Personality Assessment, 1967, 31, 58-71.

Cottle, T. J. The location of experience: A manifest time orientation. Acta Psychologica, 1968, 28, 129-149.

Cottle, T. J. Temporal correlates of the achievement value and manifest anxiety. Journal of Consulting and Clinical Psychology, 1969, 33, 541-550.

Cottle, T. J., and Klineberg, S. L. The present of things future. New York: Free Press, 1974.

Cumming, E., and Henry, W. E. Growing old: The process of disengagement. New York: Basic Books, 1961.

Dickstein, L. S., and Blatt, S. J. Death concern, futurity, and anticipation. Journal of Consulting Psychology, 1966, 30, 11-17.

Doob, L. W. Patterning of time. New Haven: Yale University Press, 1971.

Epley, D., and Ricks, D. R. Foresight and hindsight in the TAT. Journal of Projective Techniques, 1963, 27, 51-59.

Erdos, L. Time and character. Psychological Abstracts, 1935, 9, 5765.

Erikson, E. Childhood and society. New York: Norton, 1950.

Farber, M. L. Time-perspective and feeling-tone: A study in time perception of the days. Journal of Psychology, 1953, 36, 253-257.

Fink, H. H. The relationship of time perspective to age, institutionalization, and activity. Journal of Gerontology, 1957, 12, 414-417.

Frank, L. K. Time perspectives. Journal of Social Philosophy, 1939, 4, 293-312.

Freud, S. Thoughts for the times on war and death: Our attitudes toward death. Collected papers, Vol. 4. London: Hogarth, 1925, 304-317.

Freud, S. The problem of anxiety. Trans. by H. A. Bunker. New York: Norton, 1936.

Freud, S. A general introduction to psychoanalysis. New York: Pocket Books, 1963.

Gordon, D. C. Overcoming the fear of death. Baltimore: Penguin Books, 1972.

Hackett, T. P., and Weisman, A. D. Reactions to the imminence of death. In G. H. Grosser, H. Wechsler, and M. Greenblatt (Eds.), The threat of impending disaster: Contributions to the psychology of stress. Cambridge, Mass.: Mass. Institute of Technology, 1964, 300-311.

Hare, R. D. Anxiety, temporal estimation, and rate of counting. Perceptual and Motor Skills, 1963, 16, 441-444.

Heidegger, M. Being and time. Trans. by J. Macquarrie and E. Robinson. London: SCM Press, 1962.

Hooper, T., and Spilka, B. Some meanings and correlates of future time and death among college students. Omega, 1970, 1, 49-56.

Israeli, N. The outlook upon the future of British unemployed, mental patients and others. Lancaster: Science Press, 1935.

Jung, C. G. The soul and death. In H. Feifel (Ed.), The meaning of death. New York: McGraw-Hill, 1959, 3-15.

Kastenbaum, R. Time and death in adolescence. In H. Feifel (Ed.), The meaning of death. New York: McGraw-Hill, 1959, 99-113.

Kastenbaum, R. The dimensions of future time perspective, an experimental analysis. Journal of General Psychology, 1961, 65, 203-218.

Kastenbaum, R. Cognitive and personal futurity in later life. Journal of Individual Psychology, 1963, 19, 216-222.

Kastenbaum, R. The direction of time perspective: The influence of affective set. Journal of General Psychology, 1965, 73, 189-201. (a)

Kastenbaum, R. (Ed.) Contribution to the psychobiology of aging. New York: Springer, 1965, 3-18. (b)

Kastenbaum, R. On the meaning of time in later life. Journal of Genetic Psychology, 1966, 109, 9-25.

Kastenbaum, R. The impact of experience with the aged upon the time perspective of young adults. Journal of Genetic Psychology, 1967, 110, 159-167.

Kastenbaum, R., and Aisenberg, R. The psychology of death. New York: Springer, 1972.

Kastenbaum, R., and Durkee, N. Elderly people view old age. In R. Kastenbaum (Ed.), New thoughts on old age. New York: Springer, 1964, 250-264. (a)

Kastenbaum, R., and Durkee, N. Young people view old age. In R. Kastenbaum (Ed.), New thoughts on old age. New York: Springer, 1964, 237-249. (b)

Keppel, G. Design and analysis: A researcher's handbook. Englewood Cliffs, N. J.: Prentice-Hall, 1973.

Kelly, G. A. A theory of personality: The psychology of personal constructs. New York: Norton, 1963.

Klein, M. A contribution to the theory of anxiety and guilt. International Journal of Psychoanalysis, 1948, 29, 114-123.

Krause, M. S. The measurement of transitory anxiety. Psychological Review, 1961, 68, 178-189.

Krauss, H. H., and Ruiz, R. A. Anxiety and temporal perspective. Journal of Clinical Psychology, 1967, 23, 340-342.

Langer, J., Wapner, S., and Werner, H. The effect of danger upon the experiences of time. American Journal of Psychology, 1961, 74, 94-97.

LeShan, L. L. Time orientation and social class. Journal of Abnormal and Social Psychology, 1952, 47, 589-592.

Lifton, R. J. Psychological effects of the atomic bomb in Hiroshima -- the theme of death. Daedalus, 1963, 92, 462-497.

MacIver, R. M. The challenge of the passing years: My encounter with time. New York: Simon and Schuster, 1962.

MacKinnon, D. W. A topological analysis of anxiety. Character and Personality, 1944, 12, 163-176.

McDougall, W. Outline of psychology. New York: Scribner, 1923.

Meissner, W. W. Some indications of sources of anxiety in adolescent boys. Journal of Genetic Psychology, 1961, 99, 65-73.

Monks, F. Future time perspective in adolescents. Human Development, 1968, 11, 107-123.

Munnichs, J. M. Old age and finitude: A contribution to psychogerontology. New York: S. Karge, 1966.

Nagy, M. H. The child's view of death. In H. Feifel (Ed.), The meaning of death. New York: McGraw-Hill, 1959, 79-98.

Nunnally, J. C. Psychometric theory. New York: McGraw-Hill, 1967.

Osgood, C. E. An alternative to war or surrender. Urbana: University of Illinois Press, 1962. (a)

Osgood, C. E. Studies on the generality of affective meaning systems. American Psychologist, 1962, 17, 10-18. (b)

Platt, J. J., and Eisenman, R. Internal-external control of reinforcement, time perspective, adjustment, and anxiety. Journal of General Psychology, 1968, 79, 121-128.

Pollock, K., and Kastenbaum, R. Delay of gratification in later life: An experimental analog. In R. Kastenbaum (Ed.), New thoughts on old age. New York: Springer, 1964, 281-290.

Rhudick, R. J., and Dibner, A. S. Age, personality, and health correlates of death concerns in normal and aged individuals. Journal of Gerontology, 1961, 16, 44-49.

Rokeach, M., and Bonier, R. Time perspective, dogmatism, and anxiety. In M. Rokeach (Ed.), The open and closed mind. New York: Basic Books, 1960, 366-375.

Rosenfelt, R. H., Kastenbaum, R., and Slater, P. E. Patterns of short-range time orientation in geriatric patients. In R. Kastenbaum (Ed.), New thoughts on old age. New York: Springer, 1964, 291-299.

Ruiz, R. A., and Krauss, H. H. Anxiety, temporal perspective and item content of the incomplete thoughts test (ITT). Journal of Clinical Psychology, 1968, 24, 70-72.

Siegman, A. W. The relationship between future time perspective, time estimation, and impulse control in a group of young offenders and in a control group. Journal of Consulting Psychology, 1961, 25, 470-475.

Stouffer, S. A., et al. The American soldier: Combat and its aftermath (Vol. 2). Princeton: Princeton University Press, 1949.

Straus, E. Disorders of personal time in depressive states. Southern Medical Journal, 1947, 40, 254-259.

Templer, D. I. The construction and validation of a death anxiety scale. Journal of General Psychology, 1970, 82, 165-172.

Tillich, P. The eternal now. In H. Feifel (Ed.), The meaning of death. New York: McGraw-Hill, 1959, 30-38.

Tomkins, S. S. Affect-imagery-consciousness. (Vol. 1). New York: Springer, 1962.

Vischer, A. L. Old age, its compensations and rewards. London: G. Allen and Unwin, 1947.

Wallace, M. Future time perspective in schizophrenia. Journal of Abnormal and Social Psychology, 1956, 52, 240-245.

Wallace, M., and Rabin, A. I. Temporal experience. Psychological Bulletin, 1960, 57, 213-236.

Weisman, A. D. On dying and denying: A psychiatric study of terminality. New York: Behavioral Publications, 1972.

Whyman, A. D., and Moos, R. H. Time perception and anxiety. Perceptual and Motor Skills, 1967, 24, 567-570.

Wilen, F. Apparent time acceleration with age. Science, 1943, 98, 301.

Winer, B. J. Statistical principles in experimental design. New York: McGraw-Hill, 1962.

Withey, S. B. Sequential accomodations to threat. In G. H. Grossner, H. Wechsler, and M. Greenblatt (Eds.), The threat of impending disaster: Contributions to the psychology of stress. Cambridge, Mass.: Mass. Institute of Technology, 1964, 105-114.

Wohlford, P. Extension of personal time, affective states, and expectation of personal death. Journal of Personality and Social Psychology, 1966, 3, 559-566.

Zilboorg, G. Fear of death. Psychoanalytic Quarterly, 1943, 12, 465-475.

Zuckerman, M. The development of an affect adjective check list for the measurement of anxiety. Journal of Consulting Psychology, 1960, 24, 457-462.

APPENDIX

APPENDIX A

MEASURES EMPLOYED IN THE STUDY

Please check the following words which describe how you feel <u>at this moment</u>.

____ panicky
____ terrified
____ secure
____ fearful
____ steady
____ upset
____ tense
____ thoughtful
____ nervous
____ pleasant
____ frightened
____ calm
____ afraid
____ contented
____ worrying
____ desperate
____ joyful
____ shaky
____ loving
____ cheerful
____ happy

Please mark each of the following scales according to how you feel at this moment. If you feel that the phrase "the way I feel at this moment" is very closely related to one end of the scale, you should place your check-mark as follows:

anxious ___X___ _____ _____ _____ _____ _____ _____ calm

OR

anxious _____ _____ _____ _____ _____ _____ ___X___ calm

If you feel that the phrase is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

anxious _____ ___X___ _____ _____ _____ _____ _____ calm

OR

anxious _____ _____ _____ _____ _____ ___X___ _____ calm

If the phrase seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

anxious _____ _____ ___X___ _____ _____ _____ _____ calm

OR

anxious _____ _____ _____ _____ ___X___ _____ _____ calm

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the phrase. If you consider the phrase to be neutral on the scale (both sides of the scale equally associated with the phrase), then you should place your check-mark in the middle space:

anxious _____ _____ _____ ___X___ _____ _____ _____ calm

Place your check-marks in the middle of spaces, not in between spaces. Be sure to check every scale; do not omit any. Never put more than one check-mark on a single space.

the way I feel at this moment

calm	___	___	___	___	___	___	___	anxious
	1	2	3	4	5	6	7	
relaxed	___	___	___	___	___	___	___	tense
	1	2	3	4	5	6	7	
undisturbed	___	___	___	___	___	___	___	disturbed
	1	2	3	4	5	6	7	
unafraid	___	___	___	___	___	___	___	afraid
	1	2	3	4	5	6	7	
restful	___	___	___	___	___	___	___	nervous
	1	2	3	4	5	6	7	
quiet	___	___	___	___	___	___	___	upset
	1	2	3	4	5	6	7	

Please list twenty important experiences of your life. These may be experiences you have had, you are having, or you expect to have. You only need to write a few words for each experience, and you may list your experiences in any order you wish. Some examples of important experiences are: getting married, fourth birthday party, freshman year in college, vacation next year, leaving home, birth of first grandchild, going to Disneyland, learning to swim, etc.

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

_____ 6.

_____ 7.

_____ 8.

_____ 9.

_____ 10.

_____ 11.

_____ 12.

_____ 13.

_____ 14.

_____ 15.

_____ 16.

_____ 17.

_____ 18.

_____ 19.

_____ 20.

Now that you have listed twenty experiences, please study the time zones shown below:

Time Zones

1. Distant Past
2. Near Past
3. Present
4. Near Future
5. Distant Future

Now, take each experience and decide if it has occurred, is occurring, or will occur. Then choose the number from the time zone list that best represents the time of the experience and write this number in front of the experience. Do this for all twenty experiences.

An experience that you have listed may be so general that it is possible to assign to the experience several time zones. Choose one and only one time zone that best represents the time of the experience.

You are going to see a series of pictures, and your task is to tell a story that is suggested to you by each picture. Try to imagine what is going on in each picture. Then tell what the situation is, what led up to the situation, what the people are thinking and feeling, and what they will do. In other words, write as complete a story as you can -- a story with plot and characters.

You will have 20 seconds to look at a picture and then 4 minutes to write your story about it. Write your first impressions and work rapidly. I will keep time and tell you when it is time to finish your story and to get ready for the next picture.

There are no right or wrong stories, so feel free to write whatever story is suggested to you when you look at a picture. Spelling, punctuation, and grammar are not important. What is important is to write out as fully and quickly as possible the story that comes into your mind as you imagine what is going on in each picture.

There is one page for writing each story. The questions you are expected to answer are printed below and at the top of each page.

1. What is happening? Who are the persons?
2. What has led up to this situation? That is, what has happened in the past?
3. What is being thought? What is wanted?
4. What will happen? What will be done?

Story I

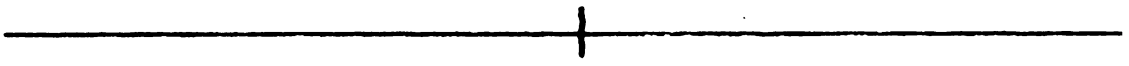
1. What is happening? Who are the persons?

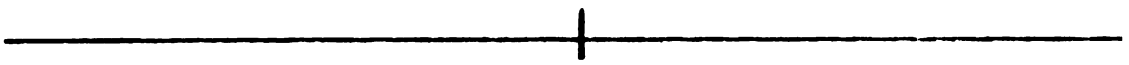
2. What has led up to this situation? That is, what has happened in the past?

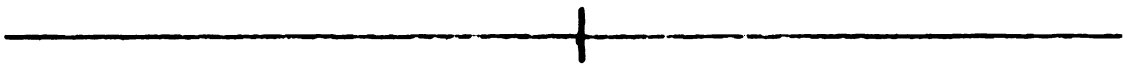
3. What is being thought? What is wanted?

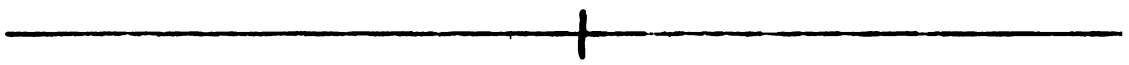
4. What will happen? What will be done?

Four lines are presented below. For each story, please represent where you feel the story begins and where it ends by marking off two points to the left and to the right of the midpoint, respectively. Consider the midpoint as the present time in which the story itself is taking place.

Story I 

Story II 

Story III 

Story IV 

Think of the past, present, and future as being in the shape of circles. Arrange these circles in any way you want that best shows how you feel about the relationship of the past, the present, and the future. You may use different size circles. When you have finished, label each circle to show which one is the past, which one is the present, and which one is the future.

Please answer the following questions with a response of "true" or "false." (T= True, F= False)

_____ I am very much afraid to die.

_____ The thought of death seldom enters my mind.

_____ It doesn't make me nervous when people talk about death.

_____ I dread to think about having to have an operation.

_____ I am not at all afraid to die.

_____ I am not particularly afraid of getting cancer.

_____ The thought of death never bothers me.

_____ I am often distressed by the way time flies so very rapidly.

_____ The subject of life after death troubles me greatly.

_____ I am really scared of having a heart attack.

_____ I often think about how short life really is.

_____ I shudder when I hear people talking about a World War III.

_____ The sight of a dead body is horrifying to me.

_____ I feel that the future holds nothing for me to fear.

Please answer the following questions.

The film I saw was:

_____ very anxiety-arousing.

_____ somewhat anxiety-arousing.

_____ not anxiety-arousing at all.

My GPA is _____.

My age is _____.

Please rank the following items according to the degree of anxiety or fear they arouse in you, with 1 being assigned to the item which arouses the greatest degree of anxiety or fear.

_____ taking a classroom exam

_____ death of a stranger

_____ menstruation

_____ death of oneself

_____ giving birth to a child

_____ cancer of the breasts

_____ death of a loved one