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THE UNIVERSITY OF ALBERTA

SELF-ACTUALIZATION AND THE PERCEPTION OF TIME

BY

(C) CHERYL H. CUCHERAN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF EDUCATION

IN

COUNSELLING PSYCHOLOGY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

FALL, 1987

ISBN 0-315-40891-X

THE UNIVERSITY OF ALBERTA

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TITLE OF THESIS: Self-Actualization and the Perception of Time.

DEGREE: Master of Education

YEAR THIS DEGREE GRANTED: 1987

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled "Self-Actualization and the Perception of Time" submitted by Cheryl H. Cucheran in partial fulfillment of the requirements for the degree of Master of Education in Counselling Psychology.

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Date : October 6 19 87

ABSTRACT

This study examined the relationship between self-actualization and the perception of time. The following measures were completed by 83 subjects: Personal Orientation Inventory (POI); Cottle's Circle Test; Future Prediction Inventory (FPI); and, Temporal Attitudes Questionnaire (TAQ). Based on their POI scores, subjects were assigned to low, moderate, or high self-actualizing group (LSA, MSA, HSA). In general, the HSA group was older and had more post-secondary education. It was hypothesized that the HSA group would demonstrate: 1) present-orientation; 2) greater integration of the temporal zones; 3) greater certainty, clarity, and optimism toward the future; and, 4) positive temporal attitudes.

Temporal orientation was assessed using the POI TC scale and the Circle Test dominance scores. Although the TC scores were higher for the MSA and HSA groups, indicating present orientation, there was no difference in present orientation using the Circle's Test. However, the LSA group rated the past as dominant more often than the other two groups to a significant degree. While temporal integration scores increased as the level of self-actualization increased, this finding was not statistically significant. There were no significant differences between the groups in their certainty, clarity, or degree of optimism toward the future as measured by the FPI. As indicated by significant differences in their mean total TAQ scores, the groups differed in temporal attitudes. The HSA group had the most positive temporal attitude and the LSA group had the least. However, the groups differed on only one factor -- time anxiety. Although the literature suggested that gender has significant effects on temporal experience, no gender

effects were found. There was a significant inverse relationship between age and temporal integration and younger subjects were more certain of the future.

These and other results from post-hoc tests are discussed. Implications for counselling and suggestions for further research are presented. Although not all hypotheses were confirmed, the researcher concludes that further studies examining the relationship between optimal psychological functioning and temporal experiences is necessary to further validate self-actualization theory and add to the literature on temporal experience.

ACKNOWLEDGEMENTS

This thesis is the result of the combined effort of a number of people. My deepest appreciation goes to the following people for their support and understanding:

To JoAnn McCarty, my mother and model of optimal psychological health. Your faith in me was often the inspiration I needed to write "just one more page".

To my dear friends who have "gone before me". Thank-you Dave, Marnie, Greg, and Lynda for normalizing this experience. A special thanks, Lynda Kordyban and Greg Pickering, for your objective yet loving editorial assistance.

To Dr. P Sartoris, my thesis supervisor, my sincere gratitude for your patience and encouragement. As well, I wish to thank Dr. A.M. Decore and Dr. P. Calder, my committee members, for your helpful comments.

To Dave Redekopp, for sharing your technical expertise with me.

To my subjects, for your kind assistance.

And finally, to Kim, Darlene, Barbara, and Laurie each of whom, in their own special way, help me to reach my goals.

Thank-you.

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CHAPTER 1

INTRODUCTION

Introduction to the Problem

Researching the experience of time is essential because studies of temporal phenomena contribute to our knowledge of human experience (Fenchel, 1985). Wessman (1973) comments that the "psychological investigation of the construction and organization of temporal awareness is necessary for understanding the complex cognitive-affective-symbolic processes regulating human activity" (p. 113). Much of the past research in this area attempts to relate specific personality traits to temporal experiences. For instance, the relationship between pathology and temporal experiences has been thoroughly examined. However, the relationship between perceptions of time and optimal psychological functioning has received limited consideration.

Although there is extensive literature on the subject of time, it is limited for a number of reasons. First, time perception is not easily measured (Gorman & Wessman, 1977). It is not clear whether an internal mechanism that measures time exists (Mashour & Rollenhagen, 1985). There may be a physiological mechanism which allows us to apprehend time stimuli, however the evidence is inconclusive. Second, the construct of time is multidimensional and researchers often emphasize different dimensions (Rappaport, Enrich, & Wilson, 1985; Trommsdorff, 1983). Third, there is some argument as to how temporal experiences are best studied. Some researchers suggest that qualitative or phenomenological methods are best suited to understanding the elusive experience of time (e.g., Dapkus, 1985; Martin, 1986; Minkowski, 1970).

Others (Block, Saggau, & Nickol, 1984; Shostrum, 1964) suggest that empirical information gathered from quantitative research is more generalizable to specific populations. Finally, the relationship between time experiences and pathological or abnormal experiences has received much attention from clinical psychologists and psychiatrists (Gorman & Wessman, 1977; Yonge, 1974). Thus, our understanding of the pathological experience of time is greater than our understanding of time as it is perceived by normal and self-actualizing individuals.

Nature and Purpose of the Study

The present study examines the relationship between the tendency towards self-actualization and a number of temporal variables. These variables will be described in Chapter 2. The rationale for this study is two-fold. First, temporal experience has been characterized as a specific and persisting personality trait (Gorman & Wessman, 1977; Orme, 1969). Thus, the experience of time is a justifiable construct for psychological research. Second, the temporal experience of individuals demonstrating optimal psychological health has not been clearly established (Yonge, 1975). Self-actualization theory is used in this study because it is one of the most comprehensive conceptualizations of optimal human functioning (Tageson, 1982). This chapter will introduce the literature on the relationship between time perception and self-actualization. Chapter 1 concludes with the implications and limitations of the present study.

Self-Actualization and Temporal Experiences

Gorman and Wessman (1977) suggest that differing motives and needs account for differences in temporal experiences. Maslow (1970, 1971) proposes that, due to a differing need structure, self-actualizing individuals experience time in a unique manner. Time becomes irrelevant, hampering, and even harmful to these individuals. They look to internal cues, rather than outer clock time, for guiding principles. Self-actualized individuals are detached and independent of time partially because they are more certain of the future (Goble, 1970).

Shostrum (1964), whose work is based in part on Maslow's writings, suggests that temporal experience is a dimension that discriminates between self-actualizing, normal, and non-self-actualizing individuals. He proposes that self-actualizing individuals are more "competent" in their use of time than those who score in the normal range of a self-actualization measure: Normal individuals are more time competent than non-self-actualizing individuals. Waser (1975) summarizes Maslow's and Shostrum's views. He states that self-actualized individuals:

> (1) feel that they comfortably control time with little experience of feeling at the mercy of time;
>
> (2) they seem to experience time as a lengthy continuum in which the past is actively involved with the future during the present;
>
> (3) they feel that as they direct themselves along time's continuum, they competently and proficiently use and experience the present; and

(4) over time they feel comfortable to react in consistent ways, ... full well knowing that they have the flexibility to change if such should become their desire. (pp. 38-39)

Although many elements within Maslow's theory imply a temporal dimension (i.e., motivation, creativity, becoming, and change), temporal experiences are not discussed in any comprehensive or systematic manner (Yonge, 1975). Maslow's description of the temporal experience of self-actualized individuals is vague and bears a surprising resemblance to descriptions of time as experienced in psychopathological states. These similarities will be discussed in Chapter 2. For these reasons, the exact nature of time as perceived by self-actualized individuals is unclear.

Additionally, there have been few empirical studies that have provided reliable data to confirm any of Maslow's hypotheses regarding time. Getsinger (1975, 1976) and Yonge (1974, 1975) do provide some information in this area although their research is limited to one or two dimensions of time. Specifically, studies relating to the subjective experience of time and temporal attitudes are lacking.

Part of the difficulty of researching the temporal experiences of self-actualized individuals is the problem of arriving at a standard definition and assessment procedure for the construct of optimal psychological functioning. Due to a lack of standardized definitions, studies are often not undertaken and comparisons between completed studies cannot effectively be made.

The following research will use the term self-actualizing to refer to those individuals who demonstrate more authenticity,

individuation, productivity, and maturity than others (Maslow, 1970). Self-actualization, in this study, will be operationalized with the Personal Orientation Inventory (POI) (Shostrum, 1966). The POI is the leading measure of self-actualization (Leak, 1984). Maslow (1970) comments on the POI, stating that

> "there is today a standardized test of self-actualization. Self-actualization can now be defined quite operationally, as intelligence used to be defined .... Most of what I was able to see intuitively, directly, personally, is being confirmed now with numbers and tables and curves" (p. 27).

In the present study, individuals at different levels of self-actualization will be compared on various dimensions of time. Thus, the term 'self-actualizing' will be used to denote relative levels of self-actualization, rather than the term 'self-actualization' which implies the categorical presence or absence of the state. 'Self-actualizing' will be used interchangeably with the term 'optimal psychological functioning'.

Implications

Maslow (1968) proposes that studying self-actualized individuals "can teach us much about our own mistakes, our shortcomings, [and] the proper directions in which to grow" (p.5). These individuals become the model or ideal against which we can measure psychological qualities. If time is a central construct in human functioning, then information regarding temporal experience in an optimal psychological state would be useful in diagnostic and clinical situations. For example, if it is found that individuals demonstrating optimal psychological functioning

experience the three temporal zones (past, present, and future) in a highly related manner, then an effort to help establish continuity between the zones in less self-actualized clients may be efficacious. Previous studies have been undertaken to elucidate temporal experiences in pathological states for therapeutic purposes. This study will provide additional data on the experience of time in relation to psychological health which may be used in therapy. Additionally, to demonstrate that such a relationship exists would be to imply that it is meaningful to investigate self-actualization in terms of temporality. Thus, the findings of the current study will provide additional theoretical information.

Limitations

The purpose of this study is to investigate the relationship between temporal experience and the tendency toward self-actualization. Because of the multidimensional nature of temporal experience some variables, such as time estimation ability, will not be examined. Additionally, although most researchers agree that the POI is the best measure of self-actualization, others have outlined its limitations. These limitations will be discussed in Chapter 3. Limitations also arise when considering the nature of a voluntary sample. However, the decision to use a voluntary adult sample of various ages was made for pragmatic reasons. First, due to the length of the measures used in this study, a request to the Edmonton Public School Board to use students was turned down. Plans were made to utilize a stratified sample within one occupational setting, but time limitations for completion of the study precluded this. Thus, efforts were made to form

a sample of equal numbers of men and women of various ages, occupational, and educational backgrounds. Nevertheless, care should be taken in generalizing these research findings to the general adult population. Descriptive statistics will be provided so that generalizability issues can be adequately addressed.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

The current chapter is a review of the literature on the relationship between the experience of time and self-actualization. Although there is extensive research which examines these constructs as separate entities (Zelkind & Sprug, 1974), there is limited research that relates temporal experience with self-actualization. The purpose of this chapter is to first identify and define the pertinent dimensions of temporal experience. Following this, each dimension will be discussed in relation to general personality traits, pathology, and then more specifically in relation to the process of self-actualization.

Most researchers agree that time is not one unitary construct; rather, it consists of many dimensions of experience (Rappaport et al., 1985; Trommsdorff, 1983). However, there is some disagreement as to what these dimensions are, how they should be labelled, and how they are best measured. Without standard definitions and assessment procedures, comparisons and synthesis of the research is difficult (Gjesme, 1983). Examination of the literature reveals three main dimensions of time worthy of investigation although other investigators have found two (Bjorkman, 1984) or four (Orme, 1969). These differences may be the result of the measures employed within each study (Rappaport et al., 1985). It would appear that the most often cited dimensions include temporal perspective, physical time, and the subjective experience of time.

Dimensions of Time

Temporal Perspective

Most researchers agree that the construct of time involves a dimension labelled temporal perspective (Gorman & Wessman, 1977; Martin, 1986; Rappaport et al., 1985). Temporal perspective involves the awareness of the past, the present, and the future. This dimension is important because the "detection of the overlap of events, the sequence of events, their relative duration, and the merging of events ... provide us with the experiences detectable by the human sensorium" (Couch, 1982, p. 2). Thus, the perception of the three zones and of the relationship between these zones constitute human awareness.

This construct is further delineated into two subconstructs: temporal orientation and temporal integration (Cottle & Klineburg, 1974). Temporal orientation is defined as the preference that individuals have for one zone over the other two. The degree to which individuals are involved in remembering the past, anticipating the future, or experiencing the present, is the degree to which they are oriented to the corresponding zone. Temporal integration involves the sense of continuity or relatedness between the three zones. At one extreme, the zones are perceived as discrete and unrelated. Individuals who perceive the time zones in this manner view past experiences as unrelated to the present and present activities as unrelated to future outcomes. At the other extreme, individuals perceive the zones as overlapping and connected. Both temporal orientation and temporal integration will be given further consideration in the following two subsections.

Temporal Orientation.

The division of time into three temporal zones appears to be a cross-cultural phenomenon (Getsinger, 1975). Research suggests that individuals utilize all three zones but tend to favor one zone over the others (Rappaport et al., 1985; Settle & Alreck, 1978). One of the problems of research in this area is that individuals may differ in their notions of how much time constitutes the past, present, and future (Cottle, 1976). For instance, an individual may report that the present exists for only a few seconds while another may view the present as encompassing months or years. Variables such as age, gender, intelligence, socioeconomic status, and other personality factors such as psychopathology and psychological health appear to influence one's temporal orientation.

Temporal orientation may be developmental in nature. Shifts in temporal orientation at different ages has been reported in the literature (Bortner & Hultsch, 1972). In his discussion of temporal orientation, Klineberg (1967) suggests that adolescents become increasingly future oriented because new cognitive abilities and role expectations force them to consider their future and issues of ego-identity bring the entire life span into awareness. Other research (Rappaport et al., 1985) concurs with this. College age subjects view the future as the most important time of their lives and the past as the least (Gorman & Wessman, 1977). Individuals at age 50 continue to view the future as most important, while at age 60, the past, present and future are equally salient (Bortner & Hultsch, 1972). By the age of 70,

the past seems better than the present; the present better than the future.

Gender also appears to be related to temporal orientation. In his research, Cottle (1976) found that while men emphasized future gratifications and de-emphasized the present, women emphasized immediate and direct gratification. He suggests that women may be socialized to view their expectations as a series of "interrupted presents" and as ends in themselves rather than as a means toward some future goal (p. 183). Thus, social roles as prescribed by gender may influence ones perceptions of time (Trommsdorff, 1983).

Research also indicates that temporal orientation is linked to personality factors (Orme, 1969; Gorman & Wessman, 1977). For example, Aaronson (1968) found that manipulation of the temporal zones through hypnosis alters personality. Expanding a subject's past through hypnosis causes subjects to appear happier while an expansion of the future produces mystical-like states. Extension of both the present and the future produces obsessive-like, overly philosophical behavior. Expansion of both the past and future produces schizophrenic behavior. Removal of the present causes a catatonic death-like state. Aaronson concludes that profound personality changes result from alterations in one's perception of the temporal zones.

Conversely, personality changes resulting from psychopathology appear to influence one's temporal orientation (Orme, 1969). For example, schizophrenics frequently confuse past, present, and future events (Gorman & Wessman, 1977). They do not use past information in the present, and exhibit less future extension of thought (Orme, 1969).

Depressed individuals view the past as remote and detached from the present. They view the future as hopeless, unrealizable, and threatening. Delinquents demonstrate reduced future extension. Some researchers suggest that this reduced extension may relate to impulsiveness and hence, delinquency (Orme, 1969). Thus, research suggests that psychological and behavioral disorders are associated with disturbances in temporal orientation.

Psychological adjustment has also been related to temporal orientation. Early research (Davids & Parenti 1958; Klineberg, 1967) suggested that during childhood, a present orientation may signify healthy adjustment, while in adolescence, a future orientation may reflect maturity and healthy emotional adjustment. Lessing (1972), using measures of life satisfaction and future orientation, found a negative relationship between these two variables for children and a positive one for adolescents. Lessing's conclusion, that children who are prone to unhappiness have a greater future extension, is consistent with earlier findings.

Researchers often assume that future orientation is characteristic of a well-adapted personality. This is particularly true in our society where delay of gratification, planning, problem solving, and achievement are valued (Trommsdorff, 1983). For example, early studies found that future orientation correlated with achievement (Knapp & Garbutt, 1958), happiness, decreased anxiety, empathy, and increased levels of responsibility (Epley & Ricks, 1963). A lack of future extension has been associated with career indecision (Savickas, Silling, & Schwartz, 1984), low socioeconomic status (Klineburg, 1967), poor

academic performance, anxiety, and depression. Rychlak (1972) concludes that projecting "intentions and aspirations seems a positive and healthy way of behaving for the human animal" (p. 78).

It has been suggested, however, that in order for future orientation to be deemed characteristic of psychological well-being, it must be viewed as instrumental in present acts; that is, the future must be related to present activities (DeVolder & Lens, 1982). Lessing (1972) found that among adolescents and young adults of highly diverse backgrounds, unhappiness and dissatisfaction are associated with a "reduced ability to make effective present use [underlining added] of images of the future" (p. 466). Additionally, studies examining the role of the future have not always considered qualitative differences in the future predictions of the subjects (Trommsdorff, 1983). Although the studies cited here have used various measures of psychological health (i.e., happiness, life satisfaction, achievement) and have been criticized for a number of reasons, the findings might be enlightening in regard to the relationship between optimal psychological health and temporal orientation.

One means of studying this relationship is to directly examine the temporal orientation of self-actualizing individuals (Getsinger, 1976). Theorists, such as Maslow (1971) and Perls, Hefferline and Goodman (1951), hypothesize that self-actualizing individuals are more present oriented. Self-actualized individuals live spontaneously in the 'here-and-now' (Shostrum, 1964). The present temporal zone is not preferred at the expense of the other two zones. Rather, in their daily temporal experience, self-actualizing individuals experience time in

which the "past exists now" and "the future also now exists" (1968, p.271). Kluckhohn (1961, cited in Cottle, 1976) suggests that individuals who emphasize the future have a 'becoming' orientation, while those who emphasize the salience of the present embody a 'being' mode wherein one invests all energies in present activity and less in preparation. Self-actualizers exist in a state of temporal completion: needs are gratified, and hopes, wishes, and dreams are realized (Maslow, 1962). Shostrum (1966) suggests that time orientation in self-actualizing individuals may be referred to as time competence.

According to Shostrum (1966), time incompetent individuals are those who focus on the past or the future. He suggests that individuals who focus on the past are "characterized by guilt, regret, remorse and resentments" (p. 13). These individuals may require a greater sense of predictability and control of their lives through time. Thus, they focus on the past and may tend to "believe that past events had a higher predictability than they in fact had .... [T]he past appears more structured and valid than it is" (Bjorkman, 1984, p.32).

Time incompetence can also take a future orientation in which individuals have idealized plans and excessive worries or fears about the future (Shostrum, 1966). Previous research (Gjesme, 1983) suggests that anxious persons who anticipate fearful events in the future exhibit less competent behavior. However, competence increases when individuals believe that they can in some way affect future outcomes without neglecting the present (Cottle, 1976). Because self-actualizing individuals are thought able to predict the future with greater accuracy (Goble, 1970), they may therefore be less concerned about the future.

Rokeach and Bonier (1960) found that some individuals who have a "more realistic feeling that they are masters of their own fate," are "more involved in the present" (p. 374). Decision making theory suggests that a present orientation is more functional in comparison to a future one (Bjorkman, 1984). Making decisions based on the future is akin to living "beyond one's own cognitive means" (p.47).

Past research supports the notion that temporal orientation can be used to distinguish between psychologically healthy and unhealthy populations (Getsinger, 1975). Getsinger compared 15 individuals with sociopathic personality disorders and 15 self-actualized male subjects. The latter group of subjects was determined using Block's Ego-Resiliency Scale. Getsinger found that the sociopathic group demonstrated a significant tendency to produce drawings reflecting dominance of the past. Also, the sociopathic group more often viewed the past as positive. The psychologically healthy group were both present and future oriented. These findings do not support the notion that the self-actualizing individuals live only in the present. The data suggest that a more complex relationship may exist between optimal psychological functioning and temporal orientation than is proposed by Maslow (1971).

Theoretically, temporal orientation for self-actualizing individuals is "ahistoric" (Maslow, 1962, p.65) in so far as they are less burdened by regret and resentment from the past and the future is often 'forgotten' because aspirations are tied meaningfully to present working goals (Maslow, 1970). However, present orientation, does not on its own indicate psychological well-being. A present oriented individual whose past does not contribute to the present and who has no

future plans is involved with "meaningless activity and unreflective concentration" (Shostrum, 1966, p.14). Rappaport et al. (1985) suggest that an ideal state of temporal orientation is one in which there is breadth and balance between all temporal zones. Thus, individuals functioning at an optimal psychological level are oriented in the present and tend to integrate the three zones into a meaningful continuity.

Temporal Integration.

Temporal integration, the relatedness between the three zones, is another aspect of temporal perspective. Relatedness and integration will be used synonymously in the following discussion. Cottle (1967) quotes Mowrer's description of temporal relatedness:

> Time binding, that is, the capacity to bring the past into the present as part of the total nexus in which living organisms act and react, together with the capacity to act in the light of the long term future - is the essence of mind and personality alike. (p. 59)

Individuals connect the three temporal zones to a greater or lesser degree (Cottle & Klineberg, 1974). Dapkus (1985), in a qualitative study, found temporal integration to be a naturally occurring category discussed by her subjects. Temporal integration is also a part of decision making theory (Bjorkman, 1984). We use information from the past to make decisions in the present which will ultimately affect the future. The recognition of the continuity between the three zones is an important part of planfulness (Savickas et al., 1984). Temporal integration, like temporal orientation, appears to

be a developmental trait dependent on certain factors such as gender, age, and psychological health.

Relatedness between the three temporal zones characterizes a more developmentally advanced stage than does non-relatedness (Shostrum, 1966). Klineberg (1967) found that as individuals pass from preadolescence to adolescence there is a profound shift in temporal perspective in which the present and future become increasingly integrated. Rappaport et al. (1985) found that young adults who had successfully achieved an integrated ego identity tended to integrate the three zones more than those who had not.

Gender and socioeconomic status also appear to be significant and interacting factors for temporal integration. Boys demonstrate more integration than girls, middle-class boys more than upper class boys, and upper class girls more than middle class girls (Cottle, 1969). Gender differences are reversed in adulthood as women tend to more often view time with a sense of continuity while men perceive it as discontinuous and fragmented (Cottle, 1976). Cottle also found that temporal relatedness is positively correlated with achievement needs and intelligence and negatively correlated with anxiety among naval personnel and university students.

Psychopathology and environmental disruptions (e.g., civil war, earthquake) are reported to disturb the perceived relatedness between time zones (Dapkus, 1984). Minkowski (1970) found that depressed individuals are unable to integrate past experiences into the present. Psychopathic personalities seem to be deficient in their awareness that future events result from present behavior. Getsinger (1976) found that

sociopaths perceived the time zones as more discrete than a group nominated by clinicians as psychologically healthy. Cottle (1969) concludes that anxious people seem less able to unite the three time zones. That is, "they reflect a temporal as well as personal disunity" (p. 542). Environmental variables such as social instability may also affect temporal integration through a "mutilation or destruction of time perspective" (Coser & Coser, 1963, cited in Cottle & Klineberg, 1974, p. 25)

While the lack of relatedness between the three temporal zones suggests less than adequate psychological adjustment, increased temporal integration has been related to various measures of psychological adjustment. A connection among the three temporal zones suggests a competence in one's ability to learn from the past, deal adequately with the present, and shape or plan the future (Cottle, 1969). Wessman (1973) found that those individuals who had a strong sense of continuity between the three zones also scored consistently high on measures of happiness and self-esteem, and experienced elated moods and considerable enjoyment and satisfaction within their lives. They were described as responsible individuals with well-integrated personalities and a well defined sense of self.

Optimal psychological functioning also appears to be related to temporal integration. Yonge (1975) found that individuals with high self-actualization scores on the POI viewed time as "fluid, dynamic, lasting, and integrated" (p.602). Additionally, they demonstrated faith in a stable future which was closely tied with present concerns. Getsinger (1975) also examined the relationship between temporal

integration and self-actualization among college students and found a positive relationship between the level of self-actualization and the degree of zone integration. These findings lend support to Maslow's (1971) notion that one's past and future are integrated into the present.

Temporal Perspective -- Conclusion.

The experience of time includes temporal orientation in which time is categorized into the three zones of past, present, and future. Individuals tend to emphasize one zone depending on their age, gender, socioeconomic status, and personality characteristics such as psychopathology or psychological health. The experience of time also includes the dimension of temporal integration which is the degree to which the three zones are related to one another. According to theory (Maslow, 1970) and research, well-adjusted and self-actualizing individuals experience time in which the present is the essential time frame but the past, present, and future are inextricably bound together. They are better able to predict the future. However, the research which supports this theory is biased in that it uses a college freshman sample. The present researcher assumes that an adult sample of self-actualizing individuals (both academic and non-academic) will likewise demonstrate a present orientation in time and demonstrate high degrees of temporal relatedness.

Physical Time

Priestly (1964) suggests that physical time, that is, outer or chronological time is another temporal dimension distinguishable in the literature. Physical time is defined as the awareness of the orderly

progression of time or of that which the clock measures. Over 1500 years ago St. Augustine asked if time has an objective existence and researchers continue to address this same question today (Gorman & Wessman, 1977). Duration experiments, which test subjects' abilities to estimate time in passing, attempt to assess the sense of physical time. Time estimation is a confused area of research in that different methodologies (i.e., verbal estimation vs. reproduced estimation and 'filled' time vs 'empty' time) and differing lengths of intervals (seconds vs. minutes or hours) yield conflicting results (Waser, 1975). Orme (1969) gives a more complete discussion of the methodological difficulties in this area. Despite the problems encountered in this area, research on the relationship between physical time sense and personality will be briefly discussed in this section. Although this dimension will not be investigated within the present study, two studies which directly examine the relationship between time estimation and self-actualization will be emphasized.

It is hypothesized (Miller, Hicks, & Willette, 1978) that the process of estimating time involves knowledge that a certain amount of information (mental content) corresponds with a unit of clock time. Thus, time is estimated by using the amount of information processed as a cue. Additionally, estimation of physical time is likely to be developmental in nature. Duration estimations become more accurate with age in children (Goldman & Everett, 1985). However, the research suggests that other personality factors interact with age to determine the accuracy of time estimation (Waser, 1975). For example, introverts are more accurate as a group in estimating filled time intervals than

extroverts (Waser, 1975). It has also been found that Type A individuals estimate the passage of one minute with shorter intervals than type B's (Yarnold & Grimm, 1982). Thus, the evidence suggests that certain personality traits are related to time estimation.

Research using estimation experiments indicate that pathological conditions impair the sense of physical time (Gorman & Wessman, 1977; Orme, 1969). Kahn (1966) found that the overestimation of time is associated with poor psychological development. Overestimations of time are also common among delinquents, hysterics, and psychopaths. Depressed individuals tend to underestimate time. Schizophrenics are generally inconsistent in time estimation tasks (Gorman & Wessman, 1977). Gorman and Wessman report that anxious and neurotic subjects are likely to estimate the passage of time as moving faster than clo me. For some individuals, such as those who display chronic schizophrenic symptoms, the disturbance of physical time is so extreme that they have no sense of aging because they perceive themselves as existing outside of the realm of physical time (Orme, 1969).

Based on his review of the literature, Ornstein (1969), like Gorman and Wessman (1977), suggests that under abnormal conditions of arousal, the physiological structures responsible for the awareness of time are altered to produce distortions in many cognitive processes including the sense of time. Thus, diminished psychological health has been related to loss of accuracy in time estimation. This may explain why temporal experiences are altered by psychopathology and drugs. Although there is plenty of literature on distorted time judgement, there is less on 'accurate' or 'healthy' time judgement. This gap in the literature has

been observed by others (Martin, 1986). Obendorf (1941) suggests that the accuracy of time duration is proportional to one's contact with reality and one's degree of purpose. This suggests that individuals with superior perceptual ability and clear purpose in their lives have a more accurate perception of time.

Three known studies have directly tested self-actualized individuals for their accuracy in time estimation. A study by Waser (1975) used long intervals of filled time while two studies by Getsinger (1975, 1976) used short intervals of unfilled time. Waser, who tested 223 undergraduate students, hypothesized that there would be a significant positive relationship between the degree to which one was self-actualized and the degree of accuracy in a verbal estimation of 19 and 38 minute intervals. He found that subjects were consistent in their two estimations (r (215) = .57, $p < .01$). However, with the shorter of the two intervals, self-actualization had almost no relationship to accuracy of estimation, while with the longer interval, there was a significant positive relationship between self-actualization and the degree of estimation error (t (214) = 2.23, $p < .05$) (p. 86). Thus, individuals who were more self-actualized were more inaccurate in time estimation trials than subjects who were less self-actualized.

Although Maslow (1970) proposes that self-actualized individuals have a more accurate perception of the environment, he also states that these same individuals become absorbed in the task at hand to such a degree that secondary environmental stimuli are ignored. There is often a disorientation in time and space in which the perceiver is not

conscious of the surroundings. Time is a part of these surroundings. C-cognition (i.e., cognition of self-actualizers) is outside of the realm of time and space. D-cognition (i.e., cognition of non-self-actualizers) includes a greater sense of being in time and space. Physical time is an element of the perceived environment. Less self-actualized individuals may be more conscious of the flow of time, and thus may be more accurate in estimating it.

Getsinger (1975) found that a relationship exists between temporal relatedness (which significantly correlates with scores on a measure of self-actualization) and temporal estimation. In a sample of 60 subjects it was found that individuals with high relatedness scores were less accurate in estimating six 30 second intervals than individuals with lower relatedness scores. Subjects high in relatedness tended to overestimate the passage of time. In his 1976 study, Getsinger found that sociopaths were significantly less accurate in estimating 30 second time intervals then self-actualized individuals (t (28) = 2.79, $p < .001$). Getsinger (1975) proposes that self-actualized individuals are more accurate in temporal estimation than sociopathic individuals but less accurate in time estimation than normals because they tend to integrate the temporal zones to a greater degree. The high degree of relatedness may lead to a confusion of the boundaries of temporal zones. Accurate estimation "necessitates marking the passage of time from the future into the past through the present." (p.408). Thus, subjects who confuse temporal boundaries are more likely to inaccurately estimate time.

While the previous studies used differing methodologies, the results suggest that self-actualization is inversely related to accuracy in estimating the passage of time. Replication with other adult populations is needed to further validate these findings. Also, other measures of psychological health such as self-esteem, happiness, and life satisfaction (Orme, 1969) should be examined in regard to the relationship to estimation accuracy. While self-actualizing individuals have a superior perception of reality, physical or clock time does not appear to be perceived with accuracy. It is likely that self-actualizing individuals view time as relative to the observer (Priestly, 1964) and to the activity in which one is involved. Their time reference may rely more on subjective cues than on physical ones. Subjective temporal experiences will be discussed in the following section.

Subjective Time

Research indicates that there is little relationship between physical time and subjective experiences of time (Gorman & Wessman, 1977). Individuals often sense that time passes more quickly or more slowly than clock time. Few researchers would suggest that the rate of time passing is perceived in a standard manner (Martin, 1986). Thus, the subjective experience of time is a dimension also worthy of investigation. This dimension has been variously labelled psychological time (Ornstein,1969; Priestly, 1964), lived time (Martin, 1986; Minkowski, 1970), and personal tempo (Dapkus, 1985). The term, subjective time, will be used in this study to identify this dimension. Numerous researchers (e.g., Cottle, 1976; Ornstein, 1969; Orme, 1969)

suggest that many factors influence one's experience of time. One's sense of time may be influenced by such things as gender (Block et al., 1984); age (Cottle, 1977; Kastenbaum, 1977); emotions and feelings (Maslow, 1968); the activity one is involved in and one's environment (Block et al., 1984); attention (Whitrow, 1980); drugs (Fraisse, 1964); and, psychological health (Orme, 1969). However, one of the difficulties in examining this dimension is finding a standard means of measuring one's perception of time passing.

Often the subjective experience of time is studied using qualitative and descriptive methods (Martin, 1986; Dapkus, 1985; Minkowski, 1970). Some qualitative studies have documented temporal experiences through the use of metaphor (e.g., time is drifting clouds as compared to time as a speeding train) (Gorman & Wessman, 1977). Another way of examining the subjective experience of time is to examine temporal attitudes. Individuals develop attitudes toward time based on their subjective experience of time. Thus, the subjective experience of time may be measured using one of several attitudinal scales developed to assess one's perception of passing time and the attitudes resulting from these perceptions (e.g., Calabresi & Cohen, 1967; Wessman, 1973). Subjective time, in this study, will be defined as one's attitudes in regards to time as measured by the Temporal Attitude Questionnaire (TAQ) (Calabresi & Cohen, 1967).

Gender differences in subjective temporal experience have been found in two large-scale studies. Block et al. (1984) report that females are more aware of or more sensitive to certain influences, such as change in activity, which may account for the gender differences in

subjective temporal experiences. Females report a greater belief that time passes in a constant progression rather than in discrete units than males. Women, more than men, report that time is cyclical. Block and his associates speculate that this may be related to the the menstrual cycle. Additionally, they find alertness to be more of an influence on subjective time experiences in females than in males. In another study (Calabresi & Cohen, 1967), women were found to be significantly more flexible in their time attitudes than men. Differences in subjective temporal experience may also be related to other variables, such as age, education level, socioeconomic status and personality traits (Dapkus, 1985).

Generally, the more an individual desires an interval of time to pass, the slower it appears to move (Rychlak, 1972). Thus, an anxious individual may desire time to move more quickly. As an individual approaches a goal, time is perceived as moving more rapidly. Time urgent experiences have been discussed in the literature (Yonge, 1973). Time appears to move faster to impatient individuals (Yarnold & Grimm, 1982). Those with a sense of being rushed by time have been described in the literature as Type-A individuals (Yarnold & Mueser, 1984).

The effect of disturbance in normal psychological functioning upon subjective temporal experiences and attitudes has been noted in the literature. Wessman (1973), using a sample of 17 individuals, found that those who had difficulty controlling emotional responses, were easily upset, and were often tense and disorganized, reported that time moved too swiftly. Hypomanics report that time seemed to go faster during the illness than when they had recovered (Orme, 1969). Depressed

individuals experience a slowing or arresting of the passage of time (Mezey & Cohen, 1961). Orme (1969) cites studies which suggest that drugs alter a person's perception of time. Generally, stimulants are associated with the experience of 'time dragging' or time passing slowly while sedatives are associated with 'time flying' or passing swiftly. Thus, as indicated by self-reports of individuals experiencing pathological and drug-induced states, decreased psychological health can alter the subjective experience of time.

Based on his interviews with optimally psychologically functioning individuals, Maslow (1970) proposes that self-actualized individuals have a unique subjective temporal experience. However, Maslow's description of subjective time in a self-actualized state is vague. These descriptions are similar to the descriptions of temporal experiences encountered in psycopathological states. Maslow (1961) suggests that individuals are disoriented in time (p. 65); that is, they transcend time and experience states in which time is forgotten. He proposes that they also experience states of timelessness. In the psychiatric literature, Arlow (1984) describes a female musician's pathological experience of timelessness in which she experienced, "a feeling that time and space had ceased to exist and that she was in some kind of eternity" (p.22). At another time she was disoriented in time; "probably in a state of mild depersonalization" (p.24). Maslow (1961) also proposes that time, in the self-actualized state, is eternal and universal in which "a minute is a day; a day is a minute" (p.65). Freedman (1974) describes a schizophrenic individual's report of his experience of time in which a "day might consist of weeks, or hours, of

a minute, or frighteningly, of not even a second" (p. 338). Finally, Maslow (1962) suggests that self-actualized individuals are ahistoric in their temporal orientation (p.65). Ahistoric time sense is also reported by individuals with character disorders in which there is "little realistic appreciation of his own doing or becoming in time" (Dapkus, 1985, p.418). Comparisons of these literatures would suggest that temporal experiences in the pathological condition and the self-actualized state are similar.

It is doubtful that Maslow intended that self-actualized individuals subjectively experience time in a manner similar to individuals with psychopathological conditions. Although descriptions of psychopathology and self-actualization in relation to temporal experience use the same terminology, it remains to be seen what factors allow for more optimally functional behavior. Until altered forms of consciousness became a legitimate area of study, it is likely that some mystical experiences were diagnosed as psychological disturbances. The nature of the subjective temporal experience of self-actualized individuals needs further study if distinctions between disturbed and healthy are to be clarified.

Research in the area of subjective temporal experience in normal and self-actualized populations is limited because of a lack of standardized measures. Thus, effective comparisons between studies cannot be made (Gorman & Wessman, 1977). Despite these limitations, some studies have examined the relationship between personality traits related to psychological functioning and the subjective experience of time.

Calabresi and Cohen (1967), using the Temporal Attitude Questionnaire, collected data from both normal and abnormal populations. The abnormal population consisted of 200 patients diagnosed with neurosis, psychosis, character disorders, or schizophrenia. The normal group consisted of 308 university students. The findings suggest that anxiety about the flow of time, a need to control and schedule time, and a fear of the lack of time are the predominant subjective temporal attitudes of those who feel frustrated, lack self-confidence and initiative, and are dependent on old habits. Conversely, those individuals who were more spontaneous and more comfortable with themselves and the environment demonstrated more flexible and accepting temporal attitudes. These qualities are often associated with self-actualization (Goble, 1970).

Wessman (1973) found that those subjects within her sample who had a relaxed and flexible attitude toward time were more likely to be relatively free from emotional tension, demonstrated a practical external orientation, were more likely to be oriented toward the here-and-now, and less dependent on cultural standards. These qualities reflect some of the traits of self-actualization (Goble, 1970). Those individuals who were more objective and logical tended to effectively and efficiently schedule their time. Wessman (1973) concludes that these individuals are confident, energetic, adventuresome, and "regularly experience peaks of tranquility and freedom from anxiety and worry" (p. 111). Although Wessman's study was an exploratory one due to the small and highly select sample, the findings suggest that

psychologically healthy personality traits are associated with relaxed and flexible attitudes toward time.

Yonge (1975), examined the relationship between self-actualization, as measured by the Personal Orientation Inventory, and subjective temporal experiences using a self-developed measure, the Inventory of Temporal Experiences. He found that self-actualization was related (.35) to the experience of time in which the past is open to redefinition, the present is a time for new choices, and the self-created future is open to alternatives. There was also a positive relationship (.29) between the feeling of being at ease with and not pressed for time and self-actualization. Those with high self-actualization scores viewed time as a source of freedom which is ever expanding and flexible. This group of subjects (i.e., those lower in self-actualization) tended to feel more comfortable with rigid schedules and disliked not knowing the time. For these individuals, time is experienced according to the clock and the calendar. Data from Ingram's (1979) clinical study confirm these findings. Ingram found that individuals who experience alienation may also become excessively reliant on clock time.

The three major studies discussed above used attitudinal scales which, although different, resulted in similar conclusions. Personality traits, particularly psychological health, appear to be related to the subjective experience of time. These studies are limited: They used only clinical and student populations and, the interaction of personality characteristics and other factors such as gender, age, and socioeconomic status with the variable of subjective temporal attitudes

was not adequately examined in all three. Nevertheless, the findings suggest that psychologically healthy and self-actualized individuals experience time in a way unique to them. Based on previous research and self-actualizing theory, the present researcher hypothesizes that self-actualizing individuals demonstrate more flexible temporal attitudes, and are less anxious and concerned with the flow of time than less self-actualizing individuals.

Conclusion

The literature cited in this chapter suggests the importance of temporal experience to psychological functioning. While it is clear that impaired psychological functioning disturbs temporal experience, there is less corresponding information on how individuals who demonstrate optimal psychological functioning perceive time in all its dimensions. The existing research suggests that optimal psychological functioning is characterized by the following: (a) a temporal orientation emphasizing the present; (b) a high degree of temporal integration; (c) realistic and confident attitudes toward the future; (d) less reliance on physical time with no rigidity toward it; and, (e) flexible attitudes towards time.

This study will examine temporal experiences of individuals who vary in their degree of self-actualization because, although temporal experience is central in self-actualization theory, the concept has not been fully examined. The guiding hypothesis for this exploratory research is that individuals who demonstrate greater degrees of self-actualization experience time, and the dimensions of time, in ways

unique to this group. This study will specifically investigate the following four sub-hypothesis:

1. Individuals who are more self-actualized demonstrate a greater tendency to orient themselves toward the present temporal zone as compared to those who are less self-actualized.

2. Individuals who are more self-actualized demonstrate a greater tendency to integrate the past, present, and future as compared to those who are less self-actualized.

3. Individuals who are more self-actualized demonstrate greater certainty of the future as compared to those who are less self-actualized.

4. Individuals who are more self-actualized demonstrate unique attitudes toward time as compared to those who are less self-actualized (i.e., their subjective experience of time differs on a number of variables from that of less self-actualized individuals).

The next chapter presents the methodology and the measures used to examine the above statements.

CHAPTER 3

METHODOLOGY

In this chapter the methodology used to examine the relationship between self-actualization and the variables of temporal experiences will be discussed. The chapter is divided into the following five sections: 1) subjects; 2) procedure; 3) description of tests; 4) research questions; and, 5) analysis.

Subjects

Data for this study were collected in April and May of 1987 in Edmonton and Calgary, Alberta. Subjects were 83 adults between the ages of 20 and 45 who agreed to fill out The Adult View of Time Questionnaire (see Appendix A). They completed the questionnaire at their leisure and returned it to the researcher through the postal system or in person. The questionnaire included a covering letter which detailed the purpose of the study and ensured anonymity so that respondents would answer the questionnaire honestly.

A convenient sampling method was employed. This method involves identifying criteria to be met and then finding the appropriate sample members (Slavin, 1984). Although this sampling method does not ensure randomness, it was used because of the pragmatic considerations as outlined in Chapter 1. Additionally, it was felt that an adult sample which included a wide range of characteristics (i.e., age, level of education) would yield the most provocative results for an exploratory study.

The study is in part exploratory as it is the first known study to examine temporal attitudes in relation to self-actualization. To the researcher's knowledge, such a study has not been undertaken with the

measures used in this study. As well, the study replicates previous studies (i.e., Getsinger, 1975, 1976) with the difference of using a normal adult sample of various ages and levels of education. This type of sample was chosen because previous related studies are limited due to their exclusive use of college freshmen. Demographic characteristics such as age, gender, and educational level were included in the study because they may have an effect on the level of self-actualization (Maslow, 1971) and how individuals view time (Dapkus, 1985). Descriptive data on the sample group will be provided in Chapter 4 so that generalization questions can be adequately addressed.

Procedure

All subjects completed the questionnaires which were scored by the researcher and computer. Based on their POI Inner-Direction (ID) scores, subjects were assigned to one of three groups. A comparison of three rather than two groups was chosen because it was felt that the most disparate groups would be necessary to decrease the influence of the standard error of measurement. The groups were chosen in relation to two criteria. First, the natural groupings within the distribution of scores were considered. Second, Shostrum's (1966) norms were used as a guide for mean group scores. Individuals were assigned to the high self-actualizing group (HSA), the moderate self-actualizing group (MSA), or the low self-actualizing group (LSA). These groups are not categorical representations of self-actualized, normal, and non-self-actualized individuals as suggested by Shostrum. The independent variable in this study is the tendency toward self-actualization. Data from the other measures were then analyzed

within and between these groups. The data analysis will be described further in this chapter.

Description of Test Instruments

Demographic data were obtained along with data from the following four measures: the Personal Orientation Inventory (POI) (Shostrum, 1966); Cottle's Circle Test (1967, 1969); the Future Prediction Inventory (FPI); and, the Temporal Attitude Questionnaire (TAQ) (Calabresi & Cohen, 1967). The measures were administered to subjects in the following order: Circle Test; POI; TAQ; and, FPI. The questionnaire was arranged so that the two longest of the four were presented in the middle of the questionnaire. The following subsections include descriptions of each measure and reliability and validity information where applicable.

Personal Orientation Inventory.

Humanistic psychology has been criticized for its lack of scientific rigor in operationalizing and objectively measuring its constructs (Leak, 1984). Thus, the Personal Orientation Inventory (POI) (Shostrum, 1964, 1966) has been developed to measure the construct of psychological health. The POI is currently the leading measure of self-actualization (Leak, 1984). This self-administered measure consists of 150 forced-choice items. Subjects are asked to choose the statement which is true or mostly true as it applies to them. Although scores are obtained for 13 subscales, only scores from two subscales, inner direction (ID) and time competence (TC), were used in this study. There is no item overlap between these subscales. The ID scale is the best global index of self-actualization (Bloxom, 1975; Leak, 1984).

This scale, which is composed of 127 items, assesses an individual's tendency to generally act on and be guided by his or her own principles and motives rather than responding to other's approval or expectations.

Leak (1984) found that the ID scale measures some, but not all, of the characteristics inherent in self-actualization. Specifically, it measures aspects related to self-esteem, empathy, positive attitude towards others, optimism, and the absence of anxiety and rigidity. He concludes that realistically and practically, one scale cannot measure a construct as rich and complex as self-actualization. The TC scale, composed of 23 items, purports to measure the degree to which one is "present" oriented (Shostrum, 1966). The scores from this scale were used in this study as one measure of temporal perspective.

The normative data presented for adults is somewhat biased toward college populations (Bloxom, 1975). Although, normative data is presented for "normal" adults, a description of this group and the sampling method used in gathering this data is not provided. Despite these weaknesses, normative data from the manual were helpful in determining membership to the HSA, MSA, and LSA groups.

The reliability data (as reported in the manual) using test-retest methods for the ID and TC scales are .77 and .71 respectively (p.33). According to Helmstadter (1964), these values are moderate in relationship to other personality tests. Construct validity of the POI is well documented (Bloxom, 1975). Scores tend to be higher for subjects identified by clinical psychologists as relatively self-actualized and they tend to increase as a result of therapy (Coan, 1975). ID scores have been negatively correlated with neuroticism, and

dogmatism and positively correlated with extraversion, college grades, and creativity measures.

The POI is not without criticism. Coan (1975) proposes that there is a strong emphasis on individual autonomy and extraversion. He suggests that these characteristics can be more abundant in an individual than is required for optimal psychological functioning. Another weaknesses inherent in the measure is the use of forced choice responses (Coan, 1975). Because statements are expressed in categorical form, the subject's choice may not accurately reflect his or her true attitudes. Also, due to the obvious nature of the construct being measured, sophisticated testees may bias their results in favor of self-actualization. Evidence for this is presented by Leak (1984) who found that scores on the ID scale correlated to a relatively high degree (.23 and .48) with two social desirability scales. Thus, contamination due to sophistication may account for some of the response variance.

Despite its limitations, the POI continues to be one of the best measures of self-actualization (Leak, 1984) and two considerations justify its use in this study. First, sample members are equally subject to most of the limitations of the scale. Second, in the present study, groups were chosen on the basis of their ranking in the total sample. Certainly, the quantitative difference between the groups is likely to represent a qualitative difference in the psychological functioning of the individuals in the groups. However, the discriminatory ability of the scale is not known. Due to the inherent weaknesses in the scale, the categorical rating of self-actualized, normal, and non-self-actualized cannot be made with complete certainty.

Cottle's Circle Test.

As discussed above, temporal perspective was examined using the POI TC scores. In addition to this, scores from Cottle's Circle Test (Cottle, 1967, 1969, 1976, 1977) were also used to measure this variable. Cottle's Circle Test was developed to assess one's perception of the relationship between the past, present, and future and to identify the salience or importance of any one zone for an individual (1967). To achieve this, Cottle felt that an individual "needs to be able to play with time zones, to arrange them 'in an order', and more importantly to 'structure in space' their fundamental relatedness as he perceives it" (1967, p.60). Subjects are given the following instructions:

> Think of the past, present and future as being in the shape of circles. Now 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.

Two sub-variables, relatedness and dominance, are scored. A third variable measured by this test, temporal development, was not used in this study as the other two zones were deemed to be related to self-actualization theory while the third was not. Relatedness is operationalized as the degree of proximity of the circles. A total score is obtained by the summation of scores from all three sets of

potential borders (past-present, past-future, present-future). Separation between any two circles is scored 0. Circles that touch are scored 2 and circles that overlap are scored 4. Complete projection (one circle inside of another) is scored 6. Relatedness scores can range from 0 - 18. Cottle also uses a categorical rating to assess this dimension but the ratings were not used in this study because score data are more amenable to statistical analysis.

Temporal dominance is operationalized as the degree to which circles differ from one another in size. The larger the relative circle size, the more dominant it is in relation to the other circles. This variable is scored by giving an arbitrary score for each zone. A circle is assigned a score of 0 if it is the smallest, 1 if it is smaller than one circle yet larger than the other, 2 if it is the largest, and 3 if there is no difference between the circle sizes.

To validate the assumption inherent in the scoring technique, Cottle (1967) interviewed 530 sample members. Results of these interviews confirmed that size was meant to demonstrate importance or significance of the corresponding zone. The conceptualization and scoring technique for the relatedness variable were also verified.

However, when the results from the Circle Test were compared to a measure also devised by Cottle which linearly depicted the duration of the time zones, little relationship was found (Cottle, 1976). Thus, it is possible that the mechanics of the test force an individual to think about time in an artificial manner (Rappaport et al., 1985). The Circle Test may be a simplistic typology that does not take all necessary variables into consideration. Nevertheless, it is one of the few

measures that examines the integration and dominance of the three temporal zones. Because it functions in this capacity it has been chosen for inclusion in this study.

Future Prediction Inventory.

This inventory was designed as a means of assessing expectations for the future. The literature on studies of the future suggests that when examining the role of the future, researchers must take into account not only the quantitative results but also the content of those answers (Rappaport et al., 1985; Trommsdorff, 1983). Thus, in this study, three dimensions of future perception were taken into consideration; specifically, certainty, clarity, and the general nature of the future expectations.

The directions for this inventory are two-fold. First, subjects are asked the following:

> In a few sentences describe what your life will be like in 5 years (job, relationships, etc.). How will it differ from your life now?

After completing this task subjects are asked to consider the degree of certainty of their expectations in the following manner:

How certain are you that your life will be as you imagine it? (Check one)

0 - 10%	( )	50 - 60%	( )
10 - 20%	( )	60 - 70%	( )
20 - 30%	( )	70 - 80%	( )
30 - 40%	( )	80 - 90%	( )
40 - 50%	( )	90 - 100%	( )

The same questions are asked of the subjects for a 10 year period.

Each protocol contains two paragraphs; one for a five year period and one for a ten year period. Each paragraph was scored on the three identified dimensions. The ratings of two independent markers were used to determine the reliability for the test and scoring methods.

The first dimension, degree of certainty, is defined as one's degree of certainty that the future will occur as predicted. This is operationalized as the percentage level of certainty designated by each subject. Clarity, the second dimension measured, refers to the capacity to clearly perceive and communicate the structure of the future. This variable is measured by the number of words written for each of the paragraphs. It is assumed by the researcher that individuals with a clear conception of what the future has in store will write about it using more words as opposed to someone with a less clear conceptualization. Contracted words have been counted as two words and all symbols (e.g., +, &, @) and numerals are scored as one word.

Finally, the general nature of each paragraph was scored in relation to degrees of optimism and pessimism. Optimism refers to the expectation of the best possible events or outcomes while pessimism

refers to expectations of the worst possible outcome or events. Individuals were rated on a five point scale with a score of one indicating definite optimism in all areas of one's life and five indicating definite pessimism in all areas of one's life. Thus, increasing scores indicate increasing degrees of pessimism. To determine interrater reliability, 33 protocols were chosen at random and independently rated by an individual not previously involved with this study. On the dimension of optimism, interrater agreement for the five and ten year period was 72.7% and 82% respectively.

Time Attitude Questionnaire.

The Time Attitude Questionnaire (TAQ) consists of 41 statements which are specifically pertinent to subjective temporal experiences and attitudes (Calabresi & Cohen, 1967). Scores from this measure were used to explore subjective temporal experiences in the form of attitudes. Subjects are given the following instructions:

> The following 41 items include statements about time. There are no "correct" or "incorrect" answers, so just respond to each item in accord with your feelings about time. After reading each statement, mark the corresponding answer on the computer scoring sheet. The answer scale used for this section is as follows: 1 = strongly agree 2 = agree 3 = not sure 4 = disagree 5 = strongly disagree

From data collected within three large scale factor analytic studies involving 580 psychiatric patients and college students (Calabresi & Cohen, 1967), the following four factors were derived: time

anxiety, time submissiveness, time possessiveness, and time flexibility. Time anxiety, the largest and most meaningful factor, is characterized by anxiety about the flow of time and the need to control it. The clinical sample scored significantly higher on this factor than the student group. As well, time anxiety was negatively correlated (-.34) with education. The authors report an alpha reliability of .79 for this factor.

Time submissiveness, a second factor, reflects "an extremely dutiful and conforming attitude toward time" (p. 435). Scores on this factor were significantly higher for less-educated sample members but did not distinguish between clinical populations and students to a significant degree. This factor is reported to have an alpha reliability of .56.

Time possessiveness suggests a "possessive and greedy attitude toward time." (p.435). Individuals with high scores on this factor are disturbed by the rapid flow of time. Those who experience emptiness, frustration, low self-confidence, dependency on old habits, and seek direction from others tend to score higher on this factor. The student and patient samples were differentiated by this factor to a significant degree. Reported reliability for this factor is .47 (p.435).

The fourth factor, time flexibility, is characterized by an accepting and flexible attitude toward time in which the present is enjoyed and losing track of time does not provoke anxiety. This factor differentiated the clinical and student populations and a gender effect was noted. Female students scored consistently higher than males. Although a total score was not computed in the original study, it was

felt by this researcher that a total score might represent a general positive or negative attitude toward time and thus it was included as a crude measure of temporal attitudes.

A separate study (Wessman, 1973) of temporal attitudes using the Temporal Experience Questionnaire (TEQ) reported similar findings. The TEQ, consisting of 80 items, was administered to 110 students. Using in-depth personality assessments of 17 of these subjects over a three year period, Wessman found that the "personal experience of time has features that are significantly related to individual psychodynamics" (p. 112). The four factors identified in this study were found to roughly correspond to the factors identified by Calabresi and Cohen (1967). This separate study provides some construct validity for the TAQ.

Calabresi and Cohen (1967) conclude that attitudes toward time, as measured by this scale, reflect basic personality differences. Although the TAQ appears to be useful in distinguishing a clinical from a more normal population, it is unclear as to whether it has finer discriminating power within a normal population of adults. In the present investigation, the scale will be used to examine any significant differences in the attitudes towards time with adults who are self-actualized to a greater or lesser degree.

Research Questions

In order to examine the sub-hypotheses listed in Chapter 2, the following research questions were proposed:

1a. Is there a significant difference between the POI TC (present orientation) scores for each group (HSA, MSA, LSA)?

1b. Does the HSA group demonstrate a present dominance on the Circle's Test more often than the other two groups to a statistically significant degree?

2. Does the HSA group have statistically higher scores on the relatedness variable of the Circle's test?

3a. Does the HSA group have significantly higher certainty ratings on the Future Prediction Inventory than the other two groups?

3b. Do subjects' descriptions of the future differ in relation to group membership (clarity, nature)?

4. Do the groups' total and factor scores on the TAQ differ significantly from each other?

Analysis

As mentioned previously, three groups were determined on the basis of their POI ID scores. Descriptive statistics will be presented for each group on the following variables: age, gender, and education level. Reliability data for the POI will be provided. The following analyses were used to answer the above questions. For question 1a, an analysis of variance was perfomed on the groups POI TC means to determine if the level of self-actualization was directly related to present orientation. For question 1b, chi-squares were used on data from Cottle's Circle Test to determine if the frequencies of dominance ratings for the past, present, and future were greater than chance for any of the groups. The groups' mean relatedness scores were subjected to an analysis of variance to determine if the degree of self-actualization was related to temporal integration as measured by the circle drawings. To answer question 3a, two 3 X 10 chi-squares were

computed to determine if the frequencies of certainty on the FPI five and ten year predictions were greater than chance for any group. Additionally, the five and ten year predictions were examined for their clarity and general nature. The former dimension was determined by a one-way analysis of variance for the groups' word means and the latter was determined by a chi-square. Finally, the total TAQ score and each of the TAQ factor scores was analyzed by an analysis of variance to determine if group means differed significantly on any factor.

CHAPTER 4

ANALYSIS OF DATA

This chapter is a report of the data gathered to investigate how temporal experience relates to various levels of self-actualization as measured by the POI. The chapter is divided into four major sections which include: 1) description of the sample and sample groups; 2) frequencies and tests of statistical significance for the dependent variables; 3) post hoc analyses; and 4) summary.

Description of the Sample and Sample Groups

The following is a description of the subjects who participated in this study. Because the total sample was broken into three comparison groups based on POI ID scores, a description of the POI ID range and mean for the total group as well as for each comparison group is provided. Finally, each comparison group is described using collected data on gender and education level.

A total of 83 subjects participated in this study. All subjects completed the POI. The POI ID scores ranged from 47 to 110. The possible range of POI ID scores is 0 - 127. Based on the norm data and the distribution of scores, which in this study resembled a normal distribution, and based on the natural breaks in the distribution, three groups were formed. The group means were compared to the normed data and it was found that the group means for the high and low self-actualization groups fell outside of the norm group means plus or minus the standard error of measurement (7.0). The standard error of measurement was computed using the reliability (.71) and the standard deviation of the total POI scores (12.96) found in this study. The

relative size of the comparison groups in this study are almost identical to the relative size of Shostrum's (1966) comparison groups.

Subjects who scored between 47 and 73 were placed in the lower self-actualizing group (LSA). This group included those who scored at or below the 15th percentile. The mean POI ID score for this group was 66.31. Those who scored between 75 and 94 were included in the moderate self-actualizing group (MSA). This group included those who scored between the 16th and 80th percentile. The mean POI ID score for this group was 85.15. Subjects who scored between 95 and 110 were placed in the higher self-actualizing group (HSA). The mean score for this group was 98.94.

The LSA group was comprised of 13 subjects. Of the 13 subjects, 4 were female and 9 were male. Ages ranged from 21 to 38, with a mean age of 29.5. Of the 54 subjects included in the MSA group, 32 were female and 22 were male. Ages ranged from 20 to 45, with a mean age of 31. The HSA group was comprised of 10 females and 6 males. Ages in this group ranged from 23 to 39, with a mean age of 31.8. The groups did not differ statistically to a significant degree in terms of age and gender. However, a chi-square test of independence indicated that the groups differed in regards to educational level (chi-square = 28.01, df = 10, p = .001). The relationship was such that the HSA group had more subjects with a university graduate degree. Information pertaining to education level for each group is presented in Table 1.

TABLE 1 Education Level By Group

Education Level	Group LSA	MSA	HSA	Row Totals
Less than high school	1	0	0	1 1.2%
High school	4	10	2	16 19.3%
Technical training	1	13	0	14 16.9%
College	1	11	1	13 15.7%
University undergrad degree	5	11	3	19 22.9%
University graduate degree	1	9	10	20 24.1%
Column Totals p = .001	13 15.7%	54 65.1%	16 19.3%	83 100.0%

Note. Row and column percentages are given under each row and column frequency total.

Analyses using gender and age as independent variables were also carried out. The total sample was grouped into three age categories after determining the natural breaks in the distribution. Twenty-seven subjects were included in the youngest group. Ages in this group ranged from 20 to 27 years with a mean age of 25.07. The middle group consisted of 37 subjects who ranged in age from 28 to 35 with a mean age of 30.78. The eldest group ranged in age from 36 to 45 years with a mean age of 42.71. This group consisted of 19 members. The analyses which used age and gender as independent variables with the temporal variables will be discussed within the next section.

Frequencies and Tests of Statistical Significance For Dependent Variables

Discussed below are the frequencies and the tests of statistical significance between groups for the temporal experience variables included in this study. Frequency scores and statistical tests will be discussed within the following subsections: temporal orientation analyses; temporal integration analysis; dimensions of future prediction analyses; and, analyses of temporal attitudes. The level of statistical significance used in all analyses was .05. All chi-square and analysis of variance statistics will be presented for the LSA, MSA, and HSA groups but only those chi-squares that reached levels of significance will be presented in tabular form. Only those tests of significance that reached statistical significance using gender and age will be reported.

Temporal Orientation Analyses.

In order to determine if individuals who demonstrate a greater tendency towards self-actualization are more present oriented, data from the POI TC subscale and Cottle's Circle Test were analyzed. First, the POI TC scores were compared between groups. TC scores for the LSA ranged from 7 to 19, with a mean of 13. The MSA group TC scores ranged from 10 to 21, with a mean of 17.11, while the HSA group TC scores ranged from 15 to 21 with a mean of 18.81. A one way analysis of variance was performed. The results (F (2, 80) = 20.55, p = 0.000), indicated that there were significant differences between the groups. A Scheffe test was run to determine which groups differed significantly. Levels of significance were found between the LSA and MSA, and LSA and

HSA groups. No statistical significance was reached between the HSA and MSA groups. There were no gender or age differences between the groups.

Temporal orientation was also assessed using the temporal dominance scores of the Circle Test. Temporal dominance was scored by rating the relative size of each circle. Table 2 presents the descriptive data for temporal dominance. The data are presented in percentages of group members who demonstrated dominance for each zone. Three points are of particular interest. First, at least 50% of the subjects in each group viewed the future as most dominant. Second, there was little difference between groups in regards to the dominance of the present. Third, the past appeared to be dominant for more members in the low self-actualizing group as compared to the other two groups.

TABLE 2 Dominance of Temporal Zones for Groups in Percentages

	Temporal Zone		
Group	Past	Present	Future
LSA	25	16.7	50
MSA	1.9	17	67.9
HSA	6.3	18.8	56.3

Note. Row percentages do not add up to zero because some subjects in each group demonstrated no temporal dominance.

A chi-square test of independence was performed for each of the three temporal zones. Table 3 is a three by four frequency table for dominance scores by group for the past temporal zone. The chi-square was statistically significant (chi-square = 13.26, df = 6, p = .04). The nature of the relationship is such that the LSA group demonstrated a greater trend toward rating the past as most dominant than either of the MSA and HSA groups. The LSA group was almost 12 times as likely as the MSA group and four times as likely as the HSA group to rate the past as the most dominant zone. A chi-square test of independence demonstrated that level of education did not have a significant effect on the dominance of the past temporal zone (chi-square = 7.9, df = 15, p = .93). Although women tend to list the past as the least dominant zone more often than men, the chi-square did not reach levels of statistical significance (chi-square = 5.69, df = 3, p = 0.13). There was no significant age effect for past dominance. As seen in Table 2, there was little difference between the dominance of the present and future zones between the groups. The chi-square performed on present dominance by group was not statistically significant (chi-square = 5.37, df = 6, p = .50). The nature of the relationship is such that level of self-actualization did not effect dominance ratings for the present. Additionally, education level, gender, and age did not appear to have a statistically significant effect on present zone dominance.

TABLE 3 Dominance of Past Temporal Zones by Group

	Group			
Dominance	LSA	MSA	HSA	Row Totals
Least	5	35	10	50 61.7
Moderate	4	8	3	15 18.5
Most	3	1	1	5 6.2
No difference	0	9	2	11 13.6
Column Totals	12 14.8	53 65.4	16 19.8	81 100.0
p = .04				

Note. Row and column percentages are given under each row and column frequency total.

Future dominance was also subjected to chi-square analysis. Although the chi-square was not statistically significant (chi-square = 10.49, df = 6, $p = .11$), there was a greater trend toward future orientation for the MSA and HSA groups as compared to the LSA group. Education level, age, and gender did not have a statistically significant effect on future zone dominance.

Temporal Integration Analysis.

Temporal integration was assessed using score data from Cottle's Circle Test. The mean relatedness score for the LSA, MSA, and HSA groups were 6.17, 7.51, and 7.88 respectively. An analysis of variance indicated that there was no significant difference between the group means (F (2, 78) = 0.34, $p = 0.71$). Male subjects demonstrated a higher

relatedness mean (8.69) than the female subjects (6.39). This difference reached levels close to significance (F (1, 79) = 3.32, p = .07), but was not statistically significant at the .05 level. There was a significant age effect (F (2, 78) = 5.18, p = .0077) in which the eldest group showed significantly less relatedness than the two younger groups.

Dimensions of Future Prediction Analyses.

The Future Prediction Inventory was used to assess the role of the future along the following dimensions: certainty; clarity; and, overall nature. Two chi-square tests of independence were used to determine if any group was more or less certain than another group of their five and ten year predictions. Neither chi-square was statistically significant. The chi-squares for the five and ten year projections were, chi-square = 17.04, df = 18, p = .52, and chi-square = 15.31, df = 16, p = .50 respectively. Because many of the cells had frequencies of zero, the certainty categories were collapsed into the following three categories: 0 - 40%, 40 - 70%, and 70 - 100%. The chi-squares for the five and ten year projections with the collapsed categories were chi-square = 1.86, df = 4, p = .76 and chi-square = 2.08, df = 4, p = .72. Again, neither reached levels of significance.

Differences in frequencies for future predictions were also examined by gender and age. Using the collapsed certainty categories, neither the five nor ten year projection chi-squares reached levels of statistical significance for gender. However, the chi-square for age and future certainty at the five year level did reach levels of significance (chi-square = 13.79, df = 4, p = .008). Table 4 is a three by three frequency table depicting the pattern of frequencies for these

variables. The relationship is such that the youngest group showed greater tendencies toward high degrees of certainty for their five year projections than the older two groups. Significance was not reached for the ten year predictions.

TABLE 4 Certainty of Five Year Future Prediction by Age

	Age Group			
Certainty	Youngest	Middle	Oldest	Row Totals
0 - 40%	1	5	1	7 9
40 - 70%	1	14	6	21 26.9
70 - 100%	23	17	10	50 64.1
Column Totals	25 32.1	36 46.2	17 21.8	78 100.5

p = .008

Clarity of future predictions was determined by comparing the number of words written for each prediction. The mean number of words written by the groups for the five year predictions were 36.92, 39.04, and 32.44 for the LSA, MSA, and HSA respectively. An ANOVA was computed to determine if there were any significant differences between the groups' means. The results $F(2, 77) = .83$, $p = .44$, indicated that there were no significant differences between the groups. The group means for the ten year predictions were 28.23, 30.54, and 23.63 for the LSA, MSA, and HSA groups respectively. The results $F(2, 76) = .89$, $p = .41$ indicated that there were no significant differences between groups for the ten year period as well. No statistically significant

differences were found between males and females nor between the different age groups at either the five or ten year period.

The nature of the five and ten year projections, based on optimism, was scored on a one to five point scale with one being most optimistic and five being most pessimistic. The chi-square for the five year period, chi-square = 2.92, df = 6, p = .82 was not statistically significant. The chi-square at the ten year period, chi-square = 8.01, df = 6, p = .24 was also not significant. Thus, the relationship is such that level of self-actualization is not a factor in general optimism for the future. There were no statistically significant gender effects at either the five or ten year range. An analysis of variance indicated that there was a significant age effect (F (3, 76) = 3.96, p = .01). The relationship is such that those individuals who expressed greater levels of pessimism in regard to the future tended to be older (mean age was 41.5) than the group who expressed the greatest degree of optimism (mean age 28.62). All age groups were more optimistic for the ten year prediction.

Analyses of Temporal Attitudes.

A total score, indicating a general attitude towards time, as well as scores for the following four factors were derived from the Temporal Attitude Questionnaire: time anxiety; time submissiveness; time possessiveness; and, time flexibility. A series of ANOVAs were computed for each of these varibles to determine if degree of self-actualization, gender, or age had any relationship to differences in temporal attitude. Table 5 displays the means for the total and factor scores by group, gender, and age. Gender and age appeared to have no significant effects

on the scores for any of the five variables. The total score and one factor, time anxiety, reached levels of significance in relationship to level of self-actualization.

TABLE 5 Mean Scores for Temporal Attitude Questionnaire by Group, Gender, and Age

	Factor				
	Total Score[a]	Time Anxious[b]	Time Submissive	Time Possessive	Time Flexible
Group					
LSA	57.58*	43.67*	20.08	17.17	23.33
MSA	66.98*	51.15	19.04	17.96	20.96
HSA	75.25	56.31	21.63	18.81	21.5
Gender					
Female	67.49	51.41	19.76	18.18	21.62
Male	66.89	51.61	19.64	17.81	21.16
Age					
Youngest	67.88	52.35	19.15	18.73	22.35
Middle	67.5	51.11	20.5	17.36	21.15
Oldest	65.79	49.21	18.95	18.26	20.63

[a]An increase in scores indicates a concomitant increase in positive attitudes toward time. [b]There is an inverse relationship between mean scores and the level of the factor being measured (ie., the higher the mean score, the less of the level of the measured variable)
*$p < .05$

The results of an analysis of variance for the total group scores, F (2, 79) = 13.3, p = .0001, suggested that there were differences in general attitudes toward time between the self-actualizing groups. A post-hoc analysis using the Scheffe test was performed. Each group was significantly different from each other. Another analysis of variance indicated that there was a significant difference between groups on the factor of Time Anxiety (F (2, 79) =

10.03, p = .0001). A Scheffe test confirmed that the LSA group differed significantly from the MSA and HSA group but the latter two groups did not differ statistically from each other. The nature of the relationship was such that the LSA group demonstrated higher levels of time anxiety than the other two groups.

The Time Submissiveness mean scores were subjected to an analysis of variance which demonstrated that there was no statistically significant relationship between degree of self-actualization and time submissiveness (F (2, 78) = 2.12, p = .13). The ANOVA for Time Possessiveness, F (2, 78) = 1.14, p = .32, also indicated no statistical significance. Finally, although it was hypothesized that the HSA group would score higher on time flexibility, an ANOVA found no statistical significance for this variable (F (2, 78) = 2.07, p = .13).

Post-hoc Analyses

Based on the previous findings, post-hoc analyses which compared time anxiety scores with other temporal variables were undertaken. These analyses were undertaken because the literature suggests that anxiety about time is related to differences in temporal orientation (Cottle, 1969), temporal integration (Getsinger, 1975), and future perspective (Rychlak, 1972). Since there was a significant difference in time anxiety scores between the lower self-actualizing groups and the other two groups, the relationship between time anxiety and other temporal variables was explored using various statistical methods.

The relationship between time anxiety and temporal relatedness was examined using the Pearson Product Moment Correlation statistic. The findings, r = .25, p = .011, suggests that there is a small, inverse

relationship between time anxiety scores and relatedness scores such that, as anxiety increases, relatedness decreases. The coefficient is positive because there is an inverse relationship between time anxiety scores and anxiety about time.

The ranked time anxiety scores were divided into three groups so that the relationship between temporal anxiety and categorical certainty ratings of the future might be examined. Subjects who scored one standard deviation below the mean on the time anxiety factor were placed in the high time anxiety group and scores one standard deviation above the mean were placed in the low time anxiety group. A chi-square test of independence computed for time anxiety and certainty of future was not significant for either the five or ten year predictions. However, the chi-square test for time anxiety and the nature of future predictions was significant at the five year level (chi-square = 18.91, df = 4, p_o = .004). The relationship was such that as anxiety about time increases, future predictions for a five year period become less optimistic. This relationship did not hold for the ten year level.

A second group of post-hoc analyses carried out involved covariance of the level of education. The effect of education was partialled out because there was a significant main effect of education on the level of self-actualization. Analyses of covariance were computed for the dependent variables of TC scores, dominance of past scores, and time anxiety and the independent variable of level of self-actualization with the effects of education level partialled out. These dependent variables were chosen because there were statistically significant findings for each by level of self-actualization.

The analysis of covariance for level of self-actualization and the three dependent variables mentioned above demonstrated that education was not a significant factor except in the case of dominance of the past (F (2, 79) = 3.87, p = .05). Thus, the level of education has a main effect upon the role of the past in that lower levels of education are related to an increased dominance of the past temporal zone. Caution must be used when interpreting these results because education and self-actualization are themselves related according to theory (Maslow, 1970). The statistical relationship between these two variables, computed using the Pearson Product Moment Correlational statistic, was .30. Thus, in partialling out the effect of education, an inherent aspect of self-actualization may also be partialled out.

Summary

This chapter presented the various data from this study. A total of 83 subjects were compared on the dependent variables in relation to level of self-actualization, gender, and, age. In general, the group with the highest level of self-actualization was older. This group also had more formal post-secondary education than the other two groups to a significant degree. This summary will present the findings according to the following dimensions: temporal orientation; temporal integration; role of the future; and temporal attitudes.

Temporal Orientation.

This variable was assessed using the POI TC scores and the dominance scores from Cottle's Circle Test. It was hypothesized that as the level of self-actualization increased, the TC scores of the POI

would similarly increase. This was confirmed by the findings. These findings suggest that as one becomes increasingly self-actualized, one becomes more present oriented. The lower self-actualization group differed significantly from the two higher ones while there was no statistical difference between the TC scores for the moderate and high self-actualizing group. Education level did not have an effect on this relationship to a significant degree. The two gender groups differed in that the female mean TC score was higher, however, this did not reach levels of significance. Age was a factor in that the older subjects had higher TC scores but again this did not reach levels of significance.

Temporal orientation was also assessed by Cottle's Circle Test dominance scores. The lower self-actualization group tended to rate the past as more dominant than the other two groups to a significant degree. However, education level did have a main effect on this relationship in that the higher the education level, the less dominant the past becomes. With the effects of education partialled out, there was no significant relationship between level of self-actualization and dominance of the past. Because of the relationship between education and self-actualization, this last finding should be viewed with caution.

There was no difference in the dominance or salience of the present zone between the groups suggesting that there is no relationship between level of self-actualization and present orientation as measured by the Circle Test. The two higher self-actualization groups tended to view the future as most dominant in comparison to the lower self-actualization group but not to a statistically significant degree. Men tended to demonstrate past dominance more than women but not to a

statistically significant degree. Although no significant age effects were noted, the youngest age group was more future oriented, the middle age group demonstrated more present orientation, and the eldest group demonstrated more past orientation. However, at least 50% of each group demonstrated future dominance.

Temporal Integration.

The relatedness variable for Cottle's Circle Test assesses the degree of integration between the temporal zones. It was hypothesized that as the level of self-actualization increased, so would the degree of integration between the time zones. Although the mean relatedness scores increased as the level of self-actualization increased, there was no statistically significant difference between the three groups. Males demonstrated more relatedness than females but not to a statistically significant degree. There was a statistically significant age effect in which the eldest group demonstrated lower degrees of relatedness than the other two groups. There was a small inverse relationship found between relatedness scores and time anxiety in that six per cent of the variance in temporal relatedness is accounted for by anxiety about time variance.

The Role of the Future.

The role of the future was examined on three dimensions using five and ten year predictions. The first dimension was certainty of future predictions. Based on the literature, it was hypothesized that higher levels of self-actualization would be related to greater levels of certainty. For the five and ten year predictions, there were no significant relationships between degree of certainty and level of

self-actualization. Gender did not have a significant effect on future certainty. Age had a significant effect on the degree of certainty in that the youngest group was significantly more certain of their five year future predictions than the two older groups. This relationship did not exist for the ten year predictions.

The second dimension measured, clarity about the future, was assessed by the mean number of words written for each prediction. It was hypothesized that the high self-actualizing group would use the most words to describe their future. In contrast, this group used the fewest words in their predictions, although not to a level of statistical significance. Gender and age had no relationship to clarity of future predictions.

The third variable measured was the general nature of the predictions. There was no demonstrated relationship between the level of self-actualization or gender, and the degree of optimism about the future. However, those who were most pessimistic tended to be older. The results of this analysis must be viewed with caution because there were only a few sample members in the most pessimistic group. A post-hoc analysis demonstrated that as anxiety about time increased there was a significant decrease in optimism for the five year prediction.

Temporal Attitudes.

It was hypothesized that as the degree of self-actualization increased, in general, attitudes toward time would become increasingly more positive. Specifically, time anxiety, submissiveness, and possessiveness would decrease and time flexibility would increase. The

data suggested that individuals with higher levels of self-actualization did have a more positive general attitude toward time. In regards to the time attitude factors, the only relationship that reached levels of statistical significance was self-actualization and time anxiety. The hypothesis that as levels of self-actualization increased, anxiety about time would decrease was confirmed. The low self-actualization group differed significantly from the two higher groups. Level of education did not significantly affect this relationship. Gender and age had no significant effect on temporal attitudes.

Conclusion.

Based on the tests of significance performed on the self-actualization groups, there appeared to be some distinguishable quality between the lowest self-actualization group and the two other groups but little between the two upper groups. Chapter 5 will discuss some of the reasons for this, the implications of these findings, and directions for future research.

CHAPTER 5

SUMMARY, DISCUSSION, AND CONCLUSIONS

The central focus of this study was the relationship between self-actualization and a number of temporal variables. The data were gathered in order to clarify self-actualization theory in regard to temporal experience. Level of education, gender, and age were also examined in relation to the temporal variables. These findings contribute to the large body of time research. This chapter is divided into the following three major sections: 1) interpretation of findings; 2) implications for counselling; and, 3) recommendations for further research.

Interpretation of Findings

This section is divided into three subsections. First, the data resulting from the Personal Orientation Inventory are examined because weaknesses inherent to this measure may have affected the findings in this study. Second, temporal experience and self-actualization are discussed in relation to the data, self-actualization theory, and other research. Third, significant gender and age effects evident in this study are examined.

The Personal Orientation Inventory Data.

Eighty-three subjects completed the POI. Based on the resulting distribution of POI ID scores and norm data, the total group was divided into three groups representing three levels of self-actualization. The groups did not differ in age. Although age means increased to a small degree as the level of self-actualization increased, the findings do not provide conclusive support for Maslow's (1970) contention that the likelihood of

self-actualization increases with age. However, the level of education increased as the the level of self-actualization increased. This finding supports theoretical speculations that self-actualization is related to higher levels of education. Although earlier research also found a significant relationship between level of education and self-actualization (Shostrum, 1966; Waser, 1975), the findings must be used with caution. Waser's research suggests that a third, unknown factor may have confounded the results. Unfortunately, this factor was not specified.

The total distribution of the POI ID scores resembled a normal distribution. The mean ID scores for the three groups were 66.31, 85.15, and 98.94. Although the sample was a voluntary one, it was not essentially different from Shostrum's (1966) norm group in which the means for three comparison groups were 75.8, 87.2, and 92.9 (p. 24). The sample in this study may have been somewhat unique in that it had many subjects who had post-secondary education. Many of these subjects were currently participating in an academic program although descriptive data of this nature were not collected.

Shostrum labelled his comparison groups as non-self-actualizing, normal adult, and self-actualizing. Little information regarding these groups -- in which there were fewer than 35 in the two most disparate groups -- was presented except that they were nominated by clinicians. The obvious weakness here is that 'non-self-actualizing' may refer to individuals with serious psychiatric disorders or it may refer to less than optimally functioning individuals. As well, the normal adult group is not defined, nor is the method used to select this group described.

In the norm data, significant differences are reported on 11 of the 12 POI subscales between the non-self-actualizing and self-actualizing groups. No differences were found between the normal group and the other two groups. Similarly, this study found that although the high and low self-actualizing groups were significantly different on four dependent variables, the middle group was found to be significantly different from the high self-actualizing group on only one of them (i.e., total temporal attitude score).

These findings, as well as the norm data, suggest that the scale has some distinguishing power for individual's who score in the upper and lower ends of the psychological health continuum. However, it lacks the discriminating power to differentiate between "normal" and self-actualized individuals. Maslow (1971) suggests that some individuals are "closer to full humanness" than others and that this is quantifiable (p. 28). What is most evident from the data is that the POI lacks fine discriminating power to capture these finer distinctions. As well, a standard error of measurement of 7.0 is relatively high when the mean difference between the low and moderate self-actualizing groups was 18.84 and 13.79 between the moderate and high groups. This may have resulted in finding fewer significant results than had been hypothesized.

Self-Actualization and Temporal Experience.

Temporal orientation, that is, the preference for the past, present, or future, was assessed using the POI TC scores and Cottle's Circle Test dominance scores. The two higher self-actualization groups were more present oriented according to the score data of the POI.

However, these groups did not demonstrate more present orientation on the Circle's Test. Although the test constructors define temporal orientation in a similar manner, the inconsistency of these findings may be an indication that these questionnaires measure different constructs. Results from an earlier study (Platt, De Lisser, Eisenman, & Darbes, 1971) demonstrated that measures of temporal dominance have little in common and are not necessarily comparable. These researchers concluded that temporal orientation is a poorly understood construct. Specifically, living in the present appears to be a poorly understood phenomenon and needs further clarification and standardization in assessment.

Analysis of the POI TC scores indicate that the two highest self-actualization groups were more time competent than the lowest group. Again, the means for the three groups were similar to means of the norm data (Shostrum, 1966). According to Shostrum, time competence is equated with present orientation, thus, the two higher groups demonstrated a greater preference for the present zone. The subscale did not, however, discriminate between the two higher groups. The heterogeneous content of this subscale, resulting in relatively low internal consistency, is likely to contribute to the lack of power to make fine discriminations between relatively healthy adults (Yonge, 1974).

The results of the Circle's Test did not indicate that those individuals with increased self-actualization were more present oriented. Rather, the relationship was such that subjects in this study who were the less self-actualized were more likely to view the past as

dominant. The direction of the results of this study are similar to those found by Getsinger (1976). In his study, Getsinger found that a sociopathic group demonstrated more past dominance than a self-actualized group. He suggests that the sociopathic group yearns for the "good-old-days" (p. 401). Although the least self-actualized group in this study is not comparable to a sociopathic group, these findings, as well as Getsinger's, suggest that less psychological health is associated with an orientation toward the past.

Like Getsinger's (1976) research, the data from the present study do not provide support for the notion that self-actualization is accompanied by a greater dominance of the present. However, the findings suggest that increased self-actualization corresponds with a decreased emphasis on the past. This relationship is likely to be influenced by higher levels of education. In the present study, when the effects of education were removed, there was no difference in past dominance between the groups. Getsinger (1976) does not mention the education level of his subjects but this might have been a contributing factor in his findings. As well, the reliability of the measure is likely to be quite low, therefore these results must be viewed with caution.

The relationship between the role of the past and psychological health may be more complex than is proposed by Maslow (1971) and Shostrum (1966). To suggest that a focus on the past relates to less psychological health may be too simplistic a conceptualization (Getsinger, 1976). Strack, Schwartz, and Gschneidinger (1985) found that happiness and life satisfaction are dependent upon the quality of

the past events as they are remembered and not simply the focus on the past. If past events are viewed as negative by the subject, then present events may seem better by comparison. If it is assumed that there is a positive relationship between self-actualization and life satisfaction, then memories may play an important role and should not be viewed as negative or less than healthy.

Self-actualization theory suggests that self-actualized individuals are more present oriented. This hypothesis was not consistently confirmed by the data in this study. It may be the case that self-actualized individuals fully experience the 'here-and-now' only in peak experiences and since they may -- according to theory -- have more peak experiences than others, they experience the 'here-and-now' more often than those who are less self-actualized. Research suggests that this may be the case. Cottle and Klineburg (1974) note that in times when humans are "emotionally driven", as in peak experiences, individuals may be liberated from the past and future. This allows for intense absorption on the present. However, Aaronson (1968) doubts that living with an expanded present could be sustained for any length of time because the experience may be too fatiguing. Thus, <u>true</u> present orientation may be a fleeting and extraordinary experience.

All groups placed the future zone in the most dominant position. Some theorists and researchers speculate that futuristic orientation is the naturally occurring orientation in Western industrialized societies (Cottle & Klineburg, 1974; Dapkus, 1985). In these societies, the notion that changes in present activities can change life conditions

reinforces a futuristic orientation in which anticipations and expectations determine present behavior. However, theory suggests that self-actualized individuals do not live mainly in the future. Because, as proposed by Maslow (1970), self-actualized individuals are able to transcend cultural prescriptions, they may not be as future oriented as others within the same cultural milieu. The data from the present study suggest that the more self-actualized group is equally influenced by cultural factors as the less self-actualized subjects.

Shostrum (1966) suggests that a future orientation is manifested as obsessive worries about idealistic and rigid goals and therefore is related to decreased psychological health. However, a future orientation may contribute to psychological health in the sense that it provides direction for one's life. May (1953) proposes that a future orientation might be manifested as hope.

> Hope, ...whether it is hope for religious fulfillment or for a happy marriage or for achievement in one's profession - can and should be an energizing attitude ... by anticipation, we are more alive and more able to act in the present (p.262).

The future is important insofar that hope provides purpose (Fraisse, 1964) and purpose is tantamount to self-actualization or psychological well-being (Frankl, 1963; Maslow, 1970).

In the present study, the role of the future was investigated in relation to certainty, clarity, and optimism. There were no differences in the degree of certainty about the future between any of the self-actualization groups. This appears to contradict what Goble (1970)

proposes. He hypothesizes that self-actualization is accompanied by greater degrees of certainty for the future. Due to greater levels of certainty, self-actualizers experience less anxiety about the future. However, definitions of certainty differ. The FPI required individuals to predict concrete occurrences in the future and then specify their level of certainty in regards to their predictions. Maslow (1971) suggests that a less fully-functioning individual plans and predicts the future. He states that this type of person "prepares for future threats and dangers, which he doesn't trust himself enough to meet unprepared when the time comes." (p. 95). Thus, self-actualized individuals are not prescient; rather, they are more trusting in their capabilities of meeting the future head-on. It is possible that they may be less comfortable in predicting specific occurrences for the future.

The mean clarity scores would suggest that high self-actualizing individuals do not experience the future in terms of specific realities. In both the five and ten year predictions, the highest self-actualization group had lower mean word scores than the other two groups. Although these results were not statistically significant, they hint at a possible relationship. It may be the case that self-actualized individuals are unwilling or unable to predict what the future holds for them. Further research on the hypothesis that self-actualized individuals are more reluctant or unable to predict the future is needed with more reliable instruments.

Although self-actualized individuals may be more trusting in their future conditions, they do not appear to be more optimistic about it according to the findings in the present study. They appear to have

similar misgivings and apprehensions about the future as those who are less self-actualized.

A review of the self-actualization literature suggests that self-actualized individuals view the past, present, and future as a connected and integrated whole, or a "gestalt in time" (Maslow, 1968, p. 14). Although the relatedness scores in the present study increased as the level of self-actualization levels increased, the relationship was not statistically significant. The data from Cottle's Circle Test did not conclusively confirm this aspect of the theory although previous research has (Yonge, 1975).

Finally, the relationship between self-actualization and attitudes regarding time were examined. It was found that in general, the groups differed in their attitudes towards time. The high self-actualizing group demonstrated a more positive attitude toward time than the other two groups based on the total TAQ score. The lowest self-actualizing group demonstrated a less positive attitude toward time. However, when the total score was divided into the four factors, it was found that the groups differed on only one of the factors. The two higher self-actualization groups were less anxious about time. Although the test developers (Calabresi & Cohen, 1967) found that education level and anxiety were negatively related, education level had no significant effect in this study. It was hypothesized in this study that the lower self-actualization group would also be more submissive and possessive about time. Maslow (1971) describes how less self-actualized individuals are submissive and guided by time as follows:

> The experientially empty person, lacking these directives from within, these voices of the real self, must turn to outer cues for guidance, for instance eating when the clock tells him to, rather than obeying his appetite .... He guides himself by clocks, rules, calendars, schedules, agenda, and by hints and cues from other people. (p. 32)

This proposition was not confirmed with the TAQ data.

The higher self-actualizing group was not more flexible with time than the other two groups as expected. It is possible that the low reliability and poor discriminatory powers of both the Time Attitudes Questionnaire and the POI affected these results.

Gender and Age Effects on Temporal Experience.

No significant gender differences were found from the data in this study. The lack of significant relationship between gender and temporal orientation is at odds with previous research (Cottle, 1976). Cottle found that women tended to emphasize the present while men tended to emphasize the future. The women in this study were as likely to emphasize the future as much as men. The differences in the findings may be due to women's changing roles within the last ten years. Women, who have entered the work force in great numbers in the last ten years, may be becoming more future oriented. As well, the lack of gender differences may be due to differences in the level of education of the subjects within each study. Cottle suggested that greater intelligence for women was associated with greater preference for the future. The subjects in this study were more likely to have post-secondary education

than Cottle's female subjects so it may be assumed that they are more future oriented.

In regards to temporal attitudes, Calabresi and Cohen (1967) found that female college students had significantly higher scores on the time flexibility factor. They do not account for this difference. However, no gender differences were found for any of the temporal attitude factors in this study.

Age, as an independent variable, was also examined. The time literature suggests that with age, individuals focus less on the present and future and more on the past. Data from this study does not support this notion. Thus, the focus on the past is not necessarily dependent upon the sheer quantity of memories. This finding is not conclusive though as the age group used in this study was restricted to individuals between the ages of 20 and 45. Individuals within this age range are likely to continue planning for the future. Thus, the future continues to play an important role for most subjects in this study.

In terms of the relationship between age and the temporal variables, two findings were significant. A significant inverse relationship was found between age and relatedness. The eldest group demonstrated a significantly lower relatedness score than the two younger groups. The literature suggests three possible reasons for this finding. First, temporal relatedness has been demonstrated to be positively correlated with achievement needs (Cottle, 1969). It is likely that the younger subjects in this study are more achievement oriented than their older counterparts. Because they are making more plans for the future, the present behavior of the younger subjects is

motivated to a large degree by the future. Thus, at the very least, their present and future are bound together.

The lack of relatedness may also be due to an unpleasant evaluation of the future. Examination of the results indicate that the most pessimistic ratings of the future were given by older subjects. Thus, if future prospects are limited or bleak, zone relatedness may disintegrate. Cottle and Klineburg (1974) suggest that an "unhappy future may then be actively excluded from consciousness and relegated to a realm of pure subjectivity, safely unconnected with current realities" (pp. 23-24). These results must be interpreted with caution however, as there were only a few subjects in the most pessimistic group.

A third possible factor that may account for less connection of the time zones for the eldest subjects may be anxiety in regards to time. Cottle and Klineburg (1974) suggest that anxiety about the flow of time and temporal integration are inversely related. In this study, the eldest group demonstrated higher degrees of time anxiety than the younger groups although not to a statistically significant degree. Thus, if this study was replicated with more reliable measures of anxiety or with more subjects, this relationship may be clarified and the hypothesis supported.

A second significant age related finding was that the youngest group demonstrated more certainty of their five year future predictions. This may indicate a less realistic appraisal of the future or it might suggest that younger individuals, who are more involved with planning the future, view time in terms of future potentialities.

Implications for Counselling

Progress, change, and growth are inherent notions of psychotherapy. If psychotherapy is an attempt to move individuals from a less healthy to a more healthy psychological state, it is imperative that we be able to conceptualize optimal psychological functioning. Self-actualization theory and the research which supports this theory can be used as a theoretical framework by which to set goals for psychotherapy. Although not all findings reached levels of significance, the data from this study, as well as past research and theory, suggest that there is an optimal or healthy relationship with time (i.e., present oriented, integrated temporal zones, a future which is open to possibilities, a positive general attitude toward time, and less temporal anxiety). This relationship can become one therapeutic goal. As well, the temporal experiences of the client may be an important component in the therapeutic process.

First, therapists must be aware that their client's experience of time may differ from their own. Identifying a client's temporal orientation early in therapy may help determine the initial therapeutic approach to be taken (Martin, 1986). Using a psychoanalytic approach which is based on the past may not fit with a client who demonstrates preference for the present or future zone. Likewise, a Gestalt approach may not be initially appropriate for a client who orients experiences in the past or future. Matching a therapeutic approach to the client's preferred temporal zone initially in therapy uses a framework which is familiar to the client. Such a procedure may help to build rapport.

A combination of many approaches could be used so that all time zones are examined and utilized. Awareness and utilization of all time zones may free an individual who is stuck in time because of a focus on one zone. By examining the progression of time, an individual may come to trust the process of change that occurs over time.

A general goal of therapy might be conceptualized in terms of comfort of the self in time. This means that an individual is able to experience each zone without anxiety. The past can be remembered without guilt or regret and the future can turn to the future without overwhelming fear. The present might be directly expanded. This may be accomplished through a number of approaches. Gestalt therapy might be useful as it allows an individual to experience in the present. Cognitive techniques such as cognitive thought stopping and rational emotive therapy (Ellis, 1985) could be used to discourage a focus on past regrets and future worries. Hypnosis could be effective in directly expanding the present zone as Aaronson (1968) did in his research. The data from this study indicate that there is an inverse relationship between relatedness and anxiety about time so by increasing the continuity between the time zones, anxiety about time may decrease.

Theory, past research, and the direction of the findings in this study suggest that increased levels of psychological health are associated with integration of the past, present, and future. One of the goals of therapy would be to have clients integrate the three temporal zones into a continuous progression. A client could examine how the past may provide useful instruction for present behavior. For example, focussing on past success in overcoming earlier obstacles may

help an individual overcome a present obstacle. Likewise, an individual can explore how the future is linked to the present through planning. Another goal might be to have the client trust in the future and trust in the ability to face the future. Trust may be more effective than trying to control or predict the future.

Past negative temporal experiences (e.g., parental preoccupation with punctuality, missing deadlines) may result in negative attitudes toward time, which in turn may result in anxiety about time. The data from this study indicates that higher levels of self-actualization are related to decreased anxiety about time. Therapy may involve exploring how time was viewed in the family of origin. How one uses time and one's personal limitations due to time might be an issue to consider. One may explore how to make the best use of time. Planning and setting goals may be appropriate. Also, an examination of leisure time and unstructured time may be useful. The above considerations may help identify anxiety about time and provide insight for the client and therapist as to how to decrease this anxiety.

To summarize, in therapy, time can be viewed as a way to build rapport and lessen anxiety by integrating the time zones and realistically structuring time. Living more often and more fully in the present may provide an individual with more spontaneous and fulfilling experiences.

Further Research

Although not all hypotheses were confirmed in this study, the present researcher considers further research into the temporal experiences of self-actualizing individuals necessary to validate

self-actualization theory. The results do not definitively confirm the hypotheses based on Maslow's (1971) theory, however, they have not disproved Maslow's hypotheses regarding time and the process of self-actualization.

It may be the case that optimal psychological functioning is a highly individualized concept and that individual differences are an inherent aspect of it. If this is the case, then norm referenced testing and research may not be the best or most appropriate means of furthering our knowledge. Other investigative methods such as phenomenological research methodologies might be more suited to the task. Recent research (e.g., Dapkus, 1984; Martin, 1986) has indicated that individuals can clearly articulate their experience of time and this information will add to our general knowledge about time. Additionally, time use studies which document how self-actualized individuals use their time may provide practical and interesting information.

One of the difficulties in the present study was identifying psychologically healthy subjects. Future research may choose subjects suited for self-actualization research according to a number of criteria. First, through indepth interviews, it could be determined if individuals meet a number of criteria as set out by Maslow (1970). This method of subject selection would be similar to Maslow's own method. Another means of identifying these individuals would be to have trained psychotherapists nominate individuals who seem to them to be models of psychological health. Intuitive methods, although not empirically reliable according to conventional research methodology, could yield

useful information. Another method of identifying psychologically healthy individuals would be to have subjects self-select themselves. A research design that incorporated as many of the above selection procedures along with a standardized measure (e.g., POI, MMPI) would probably be the most reliable of all methods.

In regards to the temporal experience of self-actualized individuals, once chosen, case studies or phenomenological inquiry could examine how these individuals use and experience time. This might help to overcome some of the weaknesses in measures of temporal experience as discussed earlier in this chapter. This researcher feels that the following questions are worthy of scientific inquiry.

1. Does time seem to move along swiftly at an even pace for self-actualized individuals or does it vary in its tempo? If the latter is the case, what seems to determine at what tempo time moves?
2. Do self-actualized individuals carefully plan their time or do they loosely structure their time allowing for more spontaneity?
3. How much time do self-actualized individuals actually allocate to work and leisure activities?
4. What does the "present" mean and how much time does it encompass?
5. What are the roles of the past and future?
6. How does a self-actualized individual's notion of time change over time (i.e., with age)?

These questions, and others that arise from them, may help clarify the experience of full humanness. This is desirable so that we, within the discipline of psychology, may ourselves aspire to higher levels of self-actualization, and through education and psychotherapy, help others to do the same..

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APPENDIX 1: AN ADULT VIEW OF TIME QUESTIONNAIRE

Dear Participant,

I am conducting a study related to how individuals between the ages of 20 and 40 view time. Although you may or may not have thought much about this subject, your ideas, opinions, and beliefs will be helpful in my research. I will be using this data to complete my Master's degree in Educational Psychology. It is important that you answer each question completely and honestly. Therefore, I have taken every precaution to ensure that your identity remains anonymous. I ask that you to provide some personal information prior to filling out the questionnaire. This information will be used for statistical purposes only.

There are four parts to this questionnaire. In part 1 you can complete the task on the questionnaire paper itself. Parts 2 and 3 require that you use a computer scoring sheet. Please ensure that your answer numbers correspond to the correct question. Part 4 will require you to write a couple of short paragraphs on the question sheet. The questionnaires take about one and a half hours to complete. <u>There are no right or wrong answers.</u>

When you have completed answering the questionnaire please put it in the accompanying envelope and leave it with the person you received it from or send it to me by posting it. Envelopes are already addressed and stamped. Please return the completed or incompleted questionnaire within a week's time of receiving it.

I thank you for your consideration in assisting me with this project. If you have any questions concerning the study or the questionnaire please feel free to contact me at 487-4930.

BACKGROUND INFORMATION

Note: All information given here will be considered strictly confidential. Please check the appropriate answer on the computer scoring sheet.

Gender Male ( ) Female ( )

Age _____

Highest Attained Educational Level

Less than high school ( )

High school ( )

Technical training ( )

College diploma ( )

University undergraduate degree ( )

University graduate degree ( )

PART 1

The Circles Test

Think of the past, present and future as being in the shape of circles. Now 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.

PART 3

TIME ATTITUDE QUESTIONNAIRE

The following 41 items include statements about time. There are no "correct" or "incorrect" answers, so just respond to each item in accord with your feelings about time. After reading each statement, mark the corresponding answer on the computer scoring sheet. The answer scale used for this section is as follows:

1 = strongly agree 2 = agree 3 = not sure
4 = disagree 5 = strongly disagree

151. It makes me a little uncomfortable to think about my future.

152. When I am by myself, my thoughts often drift back to the past.

153. Looking back at my life, I don't know where all the years went.

154. I find it difficult to keep track of time when I can't keep my usual routine.

155. I avoid people who make demands on my time.

156. Twice a year the change to and from daylight saving time throws me off and it takes a while for me to get used to it.

157. When I was a child many more things seemed to happen in a year than happen in a year now.

158. I find waiting in line, even for a short time, very annoying.

159. I get almost panicky when I don't have enough time.

160. It upsets me when I have to postpone things I planned.

161. It is often hard to keep track of whether something happened a week ago or a few weeks ago.

162. When you are waiting, time seems to just drag on and on.

163. The moments I feel like my true self are when my mind is full of thoughts of my past and future.

164. I envy people who can do things on the spur of the moment without a lot of planning.

165. I would rather see a TV show about the olden times than a show that takes place now.

166. I hate to make any sort of definite plans weeks or months in advance.

167. I am almost never late for work or appointments.

168. I would rather come early and wait than be late for an appointment.

169. If the only way that I can get to an appointment is by rushing, I rush.

170. I like to have a definite schedule and stick to it.

171. It is important to make good use of your time.

172. I do not put things off to the last minute and then rush to get them done on time.

173. I rarely feel like killing time.

174. I would be lost without a watch.

175. It bothers me to think how fast time goes.

176. Time spent sleeping is wasted time.

177. People who always talk about the 'good old days' are a nuisance.

178. I wish I would live long enough to see what the world will be like 100 years from now.

179. I try to save minutes during the day by rushing.

180. I would like the kind of job where I could make my own schedule.

181. It is fun to talk over your younger years with friends.

182. I could spend hours working at a pastime, like a puzzle or a workshop project, and lose track of time.

183. It is fun to plan for the future even though the plans may not work out.

184. There are days that go so fast it's hard to figure out where all the time went.

185. When one single thought lingers on my mind I lose all sense of time.

186. Instants of happiness make up for months and years of drudgery.

187. I work at my best when I have to meet a deadline.

188. When I am on a vacation I like the luxury of forgetting about time.

189. I try to find time for more things than I can do.

PART 4

In a few sentences describe what your life will be like in **5 years** (job, relationships, etc.). How will it differ from your life now?

How certain are you that your life will be as you imagine it? (Check one)

0 - 10%	( )	50 - 60%	( )
10 - 20%	( )	60 - 70%	( )
20 - 30%	( )	70 - 80%	( )
30 - 40%	( )	80 - 90%	( )
40 - 50%	( )	90 - 100%	( )

In a few sentences describe what your life will be like in **10 years** (job, relationships, etc). How will it differ from your life now?

How certain are you that your life will be as you imagine it? (Check one)

0 - 10%	( )	50 - 60%	( )
10 - 20%	( )	60 - 70%	( )
20 - 30%	( )	70 - 80%	( )
30 - 40%	( )	80 - 90%	( )
40 - 50%	( )	90 - 100%	( )