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THE EFFECT OF FAILURE ON FUTURE TIME PERSPECTIVE
IN OPEN AND CLOSED BELIEF SYSTEMS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
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By

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*****

The Ohio State University
1961

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CHAPTER I

THE PROBLEM

"What is time? If no one asks me I know; if I wish to explain it to him who asks, I know not."

St. Augustine

I. INTRODUCTION

No experience is more universal or more baffling than the experience of time. We have no sense organs for its discrimination, yet we sense it as immediately as we do light and heat and sound. It has no physical properties, but we speak of it in spatial metaphors, and although it cannot be seen or heard or smelled, it is still compellingly real in our experiences.

Recently, the experience of time has become a subject of interest to psychologists and to other social scientists; and of the segments into which we customarily divide time—the past, the present, and the future—it is the future which has been uniquely stimulating to their inquiry. For the future alone has not happened yet, and one can do little more than imagine what it will hold. At most, the present and the past can realistically project only the faint outlines of what is to come on an otherwise blank screen. Whatever else is seen there, however the vague outlines are filled in, is but the prefiguring of one's own conscious or unconscious mind. It is almost natural, then,
that psychologists would investigate the relation of present psychological states to an individual's view of his future.

Underlying the psychologist's study of the future is the assumption that an individual's view of the future has certain identifiable characteristics whose configuration is relatively continuous over time. This configuration of characteristics of an individual's future is what is meant by future time perspective. No systematic description of the characteristics of future time perspective has been made yet, but such factors as the intensity of concern for the future, how far into the future the concern extends, and the affect associated with the future have been singled out by most investigators for investigation.

It is important to psychological investigators that future time perspective is continuous over time, but, at the same time, that it is only relatively continuous. If there were no continuity, if future time perspective were an ephemeral, here-today-gone-tomorrow phenomenon, there would be little point to studying it from the point of view of finding regularities in it. Yet, changes over time, both small and large, are to be expected in an individual's view of his future. As yet, little research has been devoted to studying the conditions under which future time perspective is modified, although the rationale and the methods for bringing modification about are already implicit in the literature.

The present study is primarily an attempt to demonstrate that modification of at least one characteristic of future time perspective,
concern for the future, is associated with the affective consequences of failure on an ego-involving task, and secondarily, that the nature of the change is related to the nature of the individual's belief system.

II. REVIEW OF THE LITERATURE

An anthropologist has written that there are a limited number of basic human problems facing all people at all times which require some solution (Florence Kluckhohn, 1956). One of those few problems is an orientation to time.¹ Yet, time orientation has never been a popular topic, neither among psychologists nor among anyone else.

Psychology's concern with time, which began early and intensively in Wundt's laboratory, was with establishing psychophysical laws of time estimation. Despite decades of failure to approximate anything so satisfying as a Weber's Law for the judgment of time intervals, experimental work on time estimation continues actively, if on a small scale. Though psychologists' interest in time has been narrow, they have nevertheless accumulated a substantial and methodologically interesting list of publications (e.g., Wallace & Rabin, 1960). Publications on time orientation, on the other hand, are of more recent vintage, are sparse and scattered, and emanate as much from the armchair as from the laboratory.

¹Time orientation usually refers to the emphasis which an individual or a social unit places on the past, the present, and the future. Time orientation encompasses future time perspective, but also past and present time perspectives.
The substance of our understanding of time orientation comes not only from outside the laboratory, but outside of psychology, itself, e.g., from anthropology, history, and literary criticism. While psychologists have pressed for rigor in their investigations of restricted aspects of time orientation, the others, free from any obligation to quantify and to verify their pronouncements, have been roaming more widely and with less discipline. From their writing emerges the broader picture of time orientation, impressive in its breadth, but to the research psychologist, sparse in its detail.

Meyerhoff (1955) has presented a clear, succinct statement of time orientation in modern times, which he culled from his informed reading of literature and philosophy. His point of view about time is close to that of the existentialists, that "From birth to death, human existence, self-conscious human existence, unfolds and manifests itself under the two conditions of temporality and of man's foreknowledge of death" (p. 138). The burden of Meyerhoff's message is that with the revolutions—intellectual, philosophical, social, and economic—that marked the transition from the feudal ages to modern times, time concepts were revolutionized, too. Time had possessed a certain unity; the present had provided some sense of continuity with the past. But in the new era, the temporal perspective shrank; the present came to dominate man's concern while the sense of continuity with the past became more diffused and the past, itself, more meaningless. Not only is there a diminished identity with the past; even identity in the present is something sought rather than attained, for this "foreshortening of
the past" has left man bereft of any dependable sense of where he has come from, a sense which had always been a substantial basis for the establishment of identity. But of even greater importance, Meyerhoff holds, is that the debasement of time—the decline of regard for the past and the future—has debased the value and status of man, himself.

Meyerhoff singles out of the multitudinous causes for these changes one of particular importance—the development of the market mentality.

Time was the essence, and of supreme value, because it produced things of value in terms of the market and the material conditions of life. Time was an indispensable instrument for the production of goods in an ever expanding market. Thus time itself came to be looked upon as a precious commodity, because it alone made possible the production of all other commodities. We still say: Time is money. It is equated with money because the commodities produced in time mean money. (p. 106)

Time came to be measured by things done in time, and the value of time became a function of the values produced and consumed in time. Time could be saved or wasted, but once it had gone, it had lost its productive value. This trend was intensified with more recent technological developments, especially in transportation and communication, that expanded man's control over space. With the increased rapidity of getting from here to there, time is even more severely foreshortened and man is increasingly bound to the momentary present:

Although any experience anywhere is accessible to the human mind, its impact is quickly exhausted and dissipated. It has become more and more difficult to establish a relationship, or significant connection, by which the individual is constantly bombarded and to which he submits by adopting the modern cult of seeking experience, any experience, for its own sake. In terms of his own life, the individual experiences the technological unity of the world under the
aspect of disunity and disorganization, as a series of
temporal flashes and successions dissipated and dis-
integrating within the moment. (p. 110)

And of ultimate consequence for the individual is the connection
between his experience of time as a commodity and his evaluation of him-
self in terms of his productivity, his achievement, or, more crudely,
what he is worth in the marketplace. The belief that he is of value be-
cause he exists, and not because he is productive, has become so ves-
tigial that it is most often met with bewilderment and disbelief when it
is stated nowadays.

In the "stream of consciousness" technique which has emerged in
modern literature, Meyerhoff finds both the manifestation of the frag-
mentation of experience characteristic of our time and the restitutive
attempt at overcoming the chaos by showing that even in the fragmen-
tation there is something of duration and continuity.

Meyerhoff's picture of modern man's (time) experience as anxious,
lost, fragmented, and badly needing the glue of identity to weld it to-
gether, is a far cry from the picture that has been painted of the
time orientations of persons in other cultures and in other times. The
ancient Greek, for example, was encapsulated in the present, too, but
not in the same way that the modern American is. The Greeks quested
for what was fixed and immutable; what existed then, and what would
exist in the future, had always been in existence. The Greek present
was dictated and fixed by the past, and the future held nothing new.
Driver (1960) holds that for the Greeks, time was essentially cyclical, its geometric representation being the circle:

We may say that the Greek image of time as a repetitive circle, and the subordination of time to space, resulted in an attitude which found the future essentially closed, the present not unique, all time essentially past. If time brought any change, it was destructive, and one looked for salvation in being delivered from its endless repetitions. (p. 30)

Spengler (1929), in his analysis of the "Apollonian" culture of ancient Greece and Rome, stresses the dread with which it viewed distance in all its aspects, spatial or temporal. He even interprets Pericles' ban on naturalistic astronomy as an act symbolizing the banishment of distance, and in the sudden change from the funerary of the Mycenaen age to the preference of the Hellenes for cremation, he discerns "the ceremonial completion of death and denial of all historic duration" (p. 13).

Driver, who believes that the Greek solution to the problem of time was negative because it foreclosed the emergence of novelty, attributes that solution to the agricultural basis of the Greek economy. The impermanence, the unreliability of nature stimulated the Greeks to seek something beyond the ephemeral; they sought eternal, changeless forms on which they could depend. The Greek emphasis on the present, then, was not the same as modern man's. The Greek built the present and clutched the past as a bulwark against change; modern man, in his never ending search for the new, has set himself adrift from his past into a highly disorganized, undependable sea of momentary experiences.
Time for the ancient Hebrews was something else again. Spengler writes that care is the counterpoise of distance, and what he called the "Magian" epoch, of which the early Hebrews were a part, was characterized by care. Past and future were represented in the present, but were not its determinants. The Hebrews were historic in a way that was foreign to the Greeks. Greek history was held in check by the desire to see the permanent structures in temporal events. Thucydides, Driver tells us, "finds in history... not a significance inherent in historical development itself, or inseparable from it, but rather illustrations of permanently valid political wisdom" (p. 34). And Herodotus was impressed more with the power of destiny over individuals and nations than with the events he had seen and heard. But for the Hebrews, concern with the past was with a view to seeing its relation to the present, and so the past had continually to be revisited and reinterpreted. It had lessons to teach, not eternal truths to dictate.

The characteristic present of Israel was a 'historical present' made up of memory, anticipation and responsibility. The characteristic present of Greece was an 'eternal present,' directed toward perceiving the changeless, recurrent, and eternal in the fleeting kaleidoscopic now. (p. 56)

The Egyptian culture was part of the Magian epoch, too, in Spengler's analysis of history, and a somewhat similar time orientation to the Hebrews characterized it. Spengler, who believed that it was the meaning intuitively attached to time that distinguished one culture from another, saw the prevalent time orientation of every culture as
being represented throughout the culture, whether one looked at art or
politics or even the materials the craftsmen used:

The Egyptian culture is an embodiment of care—care for
the future expressed in the choice of granite or basalt as the
craftsmen's material, in the chiselled archives, in the
elaborate administrative system, in the net of irrigation
works, and necessarily, bound up therewith, care for the
past. (p. 12)

But from a number of sources we are informed that we need not
even look so far into history for differences in time orientation. Even
a study of contemporary cultures shows marked differences in orien-
tation to time. Our South American neighbors, Florence Kluckhohn tells
us (1956), are so fatalistic and passive in relation to natural forces,
that they pay little attention to the past or the future. The notion
that progress is possible from today to tomorrow, so endemic in our own
culture, is foreign to the Spanish American.

Smith (1952) equates time orientation with ego-extension, and
finds among the Coast Salish Indians of British Columbia and Washington
that there is hardly any ego-extension at all. The Coast Salish manifest
little concern with the past or future. Their ego-extension seems to
be lateral rather than temporal, for what is important to the Coast
Salish is their relation to the non-human, spiritual world.

We have thus far been talking within the framework of our usual
way of conceiving time. It is a natural thing to do, for it is not
really true that the only way to think about time is as a line of in-
finte extension which can be divided into equal units of arbitrary
size, from seconds to centuries? Each unit in the past is old and gone;
each unit in the future is new, unused. Within this possibility for
the new, as time progresses, is encompassed the potentiality for change and for progress.

The Hopi Indians of the American Southwest differ not only with respect to time orientation, but with respect to their entire conception of time. If time were not the way we in the contemporary United States think of it, we should be forever "stuck" with the past; there would be nothing new, only what has always been, carried over into some later time. We should have to abandon our whole scheme of thinking about time as divided into past, present, and future, and experience only a "getting later" of what has always been. There would be no idea of progress, nor would there be much use for history, for the assumption on which history is written is that there are events of significance that happened in the past, that are finished, and that must be recorded to be remembered and interpreted. But if there were only a "latering" of what is, then whatever exists now would have its history bound up inside of it, and would not be new.

This is precisely the Hopi time experience as it has been described by Whorf (1956), and, he holds, it is closer to an actual subjective experience of time than our own linear-metric conceptualization carries us.

For if we inspect consciousness we find no past, present, future, but a unity embracing complexity. Everything is in consciousness, and everything in consciousness is, and is together. The sensuousness of consciousness is present; memory is past; foresight is future . . . Yet sensation, memory, foresight, all are in consciousness together—one is not 'yet to be' nor another "once but no more." Where real time comes in is that all this in consciousness is 'getting later;' changing certain relations in an ir-
reversible manner. In this 'latering' or 'durating' there seems to me to be a paramount contrast between the newest, latest instant at the focus of attention and the rest—the earlier. (p.144)

It is the structure of our language, Whorf argues, that conditions us to think of time in the objective terms we do. Our language permits us to say "ten days" in precisely the same way that we can say "ten bottles" despite the noticeable difference that ten bottles can be accumulated at the same place at the same time, while ten days cannot. Our language also utilizes three tenses, past, present, and future, without which our Newtonian conceptualizations of time, space, and matter would be impossible. The Hopi language, in contrast, uses none of our spatial metaphors to indicate time. The provisions of their language for the expression of time are in much closer accord than ours with a subjective experience of time. Thus, the Hopi tends to think more in terms of "latering" and "durating." Whorf believes that the Hopi would understand our expression, "Well begun is half done," but that he would not know what to make of the saying, "Tomorrow is a new day." For the Hopi, a "new" day is the old day; only a little changed.

The broad, cross-cultural, historic, and linguistic approaches suggest a complex network of social and economic factors as the totality within which time orientation is imbedded. Yet, there is sufficient internal inconsistency within these approaches to warn the psychologist who would borrow from, and integrate his work with them, to exercise caution and to keep a sharp, evaluative eye on what he reads. Is he, for example, to believe Florence Kluckhohn (1956) when she says of the
Chinese that their ancestor worship and strong family tradition imply an orientation to past events, or is he to believe Smith (1952) who says of the Chinese that "In terms of ego extension, past and future tend to merge so that neither is so different from the other as both are from the present"? (p. 398) Are Americans as bound to a fragmented present as Meyerhoff suggests, or are they as oriented to the future as Kluckhohn and Smith believe? Kluckhohn distinguishes between the time orientations of Americans and Europeans, the latter being more tradition oriented in her view, while Smith holds that "It is this concern with the future which is characteristic of most present day western European and American concepts" (p. 396). Meyerhoff neither implies nor is explicit about such a distinction.

The broad-stroke picture, it seems, must not be approached too closely lest the inconsistencies begin to stare out glaringly. Obviously, part of the problem of portraying time orientation is semantic. The language of time orientation, itself, is not standardized, and the translation of subjective time experience into meaningful linguistic symbols presents obstacles which we have not yet even begun to overcome. Also, some of the seemingly conflicting conclusions about time orientation may come from different or incomplete sets of observations, and more complete studies of cultures may be required before consistent interpretations of their time orientations can be made. Smith (1952) even admits that the generalizations she makes are not entirely justified by the present state of our knowledge.
But perhaps the consideration that time orientations are not simple is the most important one. There may be within a culture an identifiable mode of time orientation that dominates but is not a "pure type." An adequate description of time orientation would involve a more complex, more concrete conceptualization than we are now able to provide. We must not only be willing to entertain the possibility that there are qualitatively different present or past or future orientations, but to enlarge our concepts to include "strange" inconsistencies in time experience such as those of the Loango. They appear to experience mythical events of the past as presently effective, and believe that an evil thought may be temporally identical with the evil deed, which, in our time scheme, follows it (Werner, 1948).

Whatever the present shortcomings of the study of time orientation on the grand scale might be, the "big picture" provides a backdrop against which observations of time orientation in our own culture may be viewed. We might be impressed, for example, with how much weight both Meyerhoff and Driver allow to the economic basis of cultural differences in time orientation, and we might start from there to look for differences between the socioeconomic classes within our own culture.

Davis' analysis (1950) of the differences in motivation for school achievement between lower-class and middle-class children centers largely on the differences in their orientations to the future. The economic insecurities of middle-class persons seem to manifest themselves in the tendency to seek immediate gratifications of their physical needs. Not being certain what tomorrow will bring with it,
members of the lower-class satisfy themselves as best they can today. Middle-class persons, on the other hand, are more likely to plan ahead, and to be guided by their future needs as well as the momentary ones. They value, and practice, the delay of impulse gratification to an extent that is alien to the lower-class group.

Some empirical evidence for the validity of this position has been provided by LeShan (1952) who postulated that the differences in tension-relief sequences among lower-, middle-, and upper-class children would be manifest in present, future, and past time orientations, respectively. He tested his hypothesis only on lower- and middle-class children from eight to ten years of age. He had the children tell him stories, determining the span of time their stories covered. He found that stories told by lower-class children encompassed a shorter time span than those told by middle-class children. He concluded that the lower-class children showed less concern for the future. What LeShan seems really to have tested is time span, however, rather than time orientation or concern for the future.

At the end of his paper, LeShan speculated that there might be differences in time orientation between psychopaths and non-psychopaths from the same social class based upon the differences in their reinforcement histories. He had accounted for the differences between the time orientations of lower-class and middle-class persons in terms of the suddenness and unpredictability of the major changes in the lives of the former. He also inferred that what lower-class children learn is often acquired without close parental supervision. Hence, lower-
class children do not receive as consistent reinforcement, one way or the other, as do middle-class children who tend to stay within the sight of their parents. Middle-class children, then, have more adult help in controlling their impulses, while lower-class children are more on their own. Lower-class children would then be characterized by a lesser development of the superego. But the reinforcement histories of children within the lower class might vary, too, those with the least superego development showing psychopathic behavior.

Barndt and Johnson (1955) took LeShan's suggestion and a modified version of his storytelling technique, and looked for the differences in the time spans covered in the stories of delinquent and non-delinquent boys from the lower class. Their results were in accord with their predictions, the delinquent boys telling stories that encompassed a shorter span of time than the stories told by the non-delinquents. Unfortunately, the authors of the study had no case history material on their subjects, which would have given them some clue to whether differences in time orientation actually were related to differences in the pattern of reward and punishment they had experienced. The crucial test of LeShan's hypothesis has still to be made.

The shift away from culture and class to reinforcement history and superego signifies a change of focus from groups to individuals, from social to psychological determinants. When we study individuals, we must confront the problem of what is acquired of future time perspective and what is given through heredity.
Ames (1946), for example, says there is a maturational growth and patterning process that underlies the development of the time sense in humans. In her studies of children, she observed that "tomorrow" and other future phrases and tenses come into use definitely before "yesterday" or phrases denoting the past, or prior to a marked and spontaneous use of the past tense. Contrary to this generalization, however, "last night" occurs before "tomorrow night" and "last year" before "next year."

Ames' findings are in contrast to those of Sturt (1925) who found that the earliest time distinction is not between the present and the future, but between the present and a historical past "which is as different as possible from the present" (p. 61). This inchoate past, she found, is considered simply as negating existing practices. Not until about age 11 does a positive judgment of the past appear. Both Sturt and Piaget (1955) supply evidence for the greater importance to children of space over time concepts.

The differences in Sturt's and Ames' findings well may be a function of their methods, Sturt's observations being more naive, less systematic, and less well controlled. Yet (we seem never to leave social factors behind entirely), Ames' young subjects were from average to superior in intelligence, and were probably all at least from middle-class families. Sturt makes no mention of who her subjects were. If the different findings in the two investigations are in some way connected to differences in sampling, then even the "maturational ground-plan" of which Ames writes may be in part socially determined. What is
measured in these studies, too, is a linguistic expression of concern with certain segments of time. Since the linguistic equipment of the young child is quite limited, we should not rest secure that it is doing an adequate job of expressing what is being experienced in connection with time. Beyond childhood it becomes even more difficult to sort out the genetically "given" from the acquired. Still, observed consistencies between a person's changing time orientation and other evidences of development throughout his life span may suggest lawful relations between such events. What are needed most are what we have least of—longitudinal studies.

We do have cross-sectional studies, however, which have provided valuable information, even if their findings are not altogether consistent. Eson (1951), for example, tested Lewin's hypothesis that the ranges of the time perspective increase in the directions of both the past and the future in fairly equal proportions with the advance of age. Subjects whose ages ranged from nine to 69 years were assigned to one of five age groups. Each was asked to list his thoughts and conversations for the previous two weeks, and to rate each item as to its importance at the time it occurred and as to the pleasantness of the feeling-tone it aroused. All of Eson's groups gave more attention to the future than the past, and there were no significant differences between the groups with respect to distance, i.e., near or far future or past. For the groups taken as a whole, the order of representation of the time divisions was (1) near future, (2) near past, (3) distant future, and (4) distant past.
Kastenbaum (1959) studied the future time perspective of adolescents, and especially the phenomenal time span which separated them from death. He found that adolescents generally had a very low tolerance for acceptance of death-connoting experiences, and an extreme, active rejection of the time field, the distant future, in which death is included. Regarding future time perspective in general, Kastenbaum concluded that the adolescent lives primarily in an intense present; that very little structuring is given to the remote future, and that more explicit structuring is given to the past. However, both the past and the future are vague and confusing, unsafe and risky places for the adolescent mind to wander. The adolescent's present, on the other hand, is associated with fullness, activity, and reality. Kastenbaum explains his results this way:

The adolescent in his transitional, search-for-identity state, is uncomfortable with his memories of a past in which he lived a role that he is now trying to transcend. He remembers himself as confused, inept, undifferentiated, bound to the wishes of others. As he attempts to repress these unacceptable aspects of his past, the feelings do not disappear but are available for displacement elsewhere, for other areas of expression. It would be difficult to imagine a more likely place for these feelings of cloudy dread and inadequacy to gather than in the subjective time field of the remote future. With all the realistic uncertainty surrounding it, the remote future stands as an unstructured 'temporal ink blot,' as it were, ready to receive those feelings the adolescent is trying to dislodge from consciousness. (p. 111)

Some corroboration for Kastenbaum's findings comes from a study by Davids and Parenti (1958) of differences in time orientation between normal and emotionally disturbed adolescents. The authors found that those normal adolescents who were rated high on positive traits such as
optimism and trust tended to show more present orientation, as measured by Barndt and Johnson's storytelling technique. Davids and Parenti concluded that to be future oriented at age eleven might not be the best thing.

Eson's time perspective questionnaire was used by Fink (1953), along with the Thematic Apperception Test, to which he asked institutionalized and non-institutionalized subjects of different age groups to respond by telling stories. Fink then counted statements in the TAT stories referring to the past, present, and future and found that institutionalization is a more potent factor than age in influencing time perspective. Age had little to do with concern with the past, present, or future, but institutionalization was associated with a channelizing of the time perspective into the past.

Psychoanalysts are a different breed of developmental psychologist from those who focus on overt behavior primarily and they have generally gone beyond the descriptive approach to time orientation to a consideration of other than strictly maturational factors. Psychoanalysts are known for the intuitive, artistic promptings in their formulations, promptings which sometimes are fanciful substitutes for solid observation and disciplined inference. Without being exposed to any examples of it here, the reader may rest assured that the psychoanalytic imagination has occasionally feasted on the idea of time. But most psychoanalytic writing about time has been relatively parsimonious. There seems to be general agreement within the discipline that the development of the sense of time is intimately connected to infantile
experiences, particularly to the earliest frustrations that are endured as the result of unfulfilled omnipotence fantasies. Omnipotence and time, write Bergler & Roheim (1946), are incompatible because fantasies of omnipotence are "in unalloyed accord" with the pleasure principle. They are of the primary process, and as such are timeless. The development of the sense of time is tied to the general process of the growth of the ego and the substitution of the reality principle for the pleasure principle. Although this main thesis seems to be generally agreed upon by psychoanalysts, some disagreement exists in its elaboration. For instance, Bergler & Roheim believe that it is the unconscious ego, under the influence of the superego, that guides time perception, while Schneider (1948) holds that it is the perceptual-conscious system which is the chronologist. Schneider's interpretation, shared by Gross (1949), seems more in line with the traditional psychoanalytic point of view. Gross points to the disruption of "real time" in dreams where the ego has relaxed its control and the primary process is given greater scope for expression. Under this condition, time becomes illogical, characterized by condensations, transpositions, and other kinds of distortion. Whatever the case, the infant's omnipotence fantasies inevitably end up broken on the rocks of the enforced delay he experiences in obtaining gratification. The delay intrudes an unwelcome time interval between the demand and its fulfillment, and the infant is forced to learn to anticipate tension reduction while he actually senses the tension of his needs.
Arieti (1947) believes that the development of anticipation—the capacity to foresee or predict future events—is an occurrence of the anal stage of development, when postponement of immediate pleasures is learned, and that its counterpart is not to be found in any other animal than man. He holds that lower animals show expectancy, a kind of anticipation which acts only in the immediate presence of the stimulus. It is expectancy which infants manifest during the first year of life. In this development of the potential for delay there is both a positive and a negative side; a reward to be gained, a price to be paid. It is in this early and systematic imposition of the basic disciplines, and the elaborations in behavior that they make possible, that Frank (1939) sees the possibility for the development of an orientation to time:

Here then begins the characteristically human career of man, who, not content to be ruled by hunger and other physiological functions, transforms them so that hunger becomes appetite, bladder and rectal pressures become occasions for modesty, cleanliness, etc., and later sex becomes love. This transformation of naive behavior into conduct involves the acceptance of values, or, more specifically, necessitates value behavior and time perspectives wherein we see the individual responding to present, immediate situation-events (intra-organic or environmental) as point-events in a sequence the later or more remote components of which are the focus of that conduct. (p. 295)

But to learn the disciplines is not a simple matter. The infant might be content to be ruled by hunger, but the representatives of the real world are obdurate. The infant fights to maintain his (illusion of) omnipotence, and it is not until the child is able to internalize the prohibitions, and to begin to regulate himself, that the coercion can cease. Until that time, the struggle is an emotionally laden one,
and it is no wonder that the sense of time which is compounded in this crucible is colored with strong affective components. The transformation of naive behavior into conduct yields values, but it also yields anxiety.

The perils of having to wait run the gamut from the innocuous to the tragic. The infant who is not required to endure beyond his small capacity will come off well in the struggle. But the child who is forced to wait too long, Yates theorizes (1935), may lose control, experience acute and prolonged exhaustion, and suffer a sense of self-annihilation. Time may be "put out of joint," and all subsequent satisfaction is too late; the bodily upset of waiting causes the food to be indigestible, and the experienced anxiety state makes the food given a thing full of danger from an angry parent. The solution to enforced delay, Yates holds, may be neurosis, withdrawal from reality, or "controlling" inside and outside time by actually, or in fantasy, having the parents available at all times.

It is not difficult to surmise from the foregoing that time, in psychoanalytic theory, is inextricably bound up with the fortunes of the libido. It is Schilder's contention that "we experience time as an expression of our strivings and that every change in the libidinous situation changes the time experience" (1936, p. 536). Time, because it is so intimately associated with those crucial early experiences which are the foundation of character structure, carries with it a heavy symbolic burden. Time has very personal meaning to most; it is not a neutral experience.
Schilder points out that obsessionals neurotics and anal characters may be as parsimonious concerning time as concerning faces, and that there is a close relation between the idea of time and anal eroticism. Meerloo (1954) explains that the compulsively punctual individual manifests the effects of the tyrannical imposition of schedules early in life. Yates (1935) sees a relation between the psychological function of the rhythm of music, in one of his patients, and her need to seek out dependability in time. "Killing time," says Obendorf (1941) is a suspension of purpose, representing an immediate or transient defiance of the directing function of the mind and of purposive thinking. It serves as a rejection of life, itself.

Time disturbances are even more manifest in the more serious psychic disorders. The defense mechanism of isolation, Bissler holds (1952), always involves a concomitant fragmentation of time. Emotions exist in time; to experience time as only bits and pieces is to preclude the experience of emotion. Obendorf (1941) writes of depersonalization in the same vein. It leaves the individual without any meaningful temporal experience because the element of emotion is withdrawn from action.

The disturbance of time is particularly apparent in schizophrenia, where time, like all other perceptions, is highly autistic. Meerloo (1954) even speaks of a "schizophrenic time experience":

Present in schizophrenia is a division between ego time and the time of the world. To schizophrenic patients, the past is something demonic. The feeling of unbroken continuity with the past has been lost. Long before the outbreak of their psychoses, they already indulge that feeling of detachment from the world.
and their fellow beings . . . But especially in the acute phase, when these patients feel that world and reality evade them and when they have to construct for themselves a phantom world, time to them becomes infinitely arid. One then hears: "I do not live any longer, the day seems endless to me, the world clock stands still." (p. 59)

And Schilder writes, "It seems as if the schizophrenic in his regression would lose the inner relation to the time experience. Time experience becomes senseless when libido is withdrawn from the world" (1936, p. 533).

The general psychoanalytic point of view about time disturbances is helpful in understanding disturbances in future time perspective in particular. Freud, who had little to say about time per se, wrote, "For it has long been known, the fate we expect to treat us so badly is a materialization of our own conscience, of the severe super-ego within us, itself a residue of the punitive function of our childhood" (1941, p. 96).

In an extremely insightful and important paragraph, Schilder has elaborated this observation into a clear and meaningful statement of the psychoanalytic theory of future time perspective:

It is a matter of course . . . that symbolic transformations, condensations and transpositions, are most important parts of expectations in the future. It is even impossible to imagine approximately what it will be to be married, to be in love, to have a child, to be betrayed by somebody whom one loves, to be rich, to be poor. All these expectations are merely symbolic expressions of the present libidinous situation. . . . Words without definite contents, merely the product of the emotion of others and oneself loaded heavily with prejudices and unanalyzed feeling, become the sign-posts for actions. The better educated a person is, the more his conception of his future is a product of vaguely understood words which are the carriers of unanalyzed symbolic expectations. (1936, p. 543)
The present, as it embodies the lessons learned in the past, is where the psychoanalyst looks for an understanding of how an individual perceives his future. In Lewinian field theory, there is a dual point of view. It is not only that the present influences the view of the future; it is also the view of the future, and the past, that condition how one feels in the present.

The behavior of an individual does not depend entirely on his present situation. His mood is deeply affected by his hopes and wishes and by his views of his own past. The morale and happiness of an individual seem to depend more on what he expects of the future than on the pleasantness or unpleasantness of the present situation. (Lewin, 1951, p. 75)

One of Lewin's students, M. Farber, tested this hypothesis in two studies. In the first (1944), he found that neither the length of time a prisoner had served nor the length of his sentence were significantly correlated with how much he was suffering. What was highly associated with the amount of suffering was the time a prisoner expected to serve, his future time perspective in other words. In the other study, Farber (1953) asked college students to rank the days of the week in the order of their preference for them. Saturday, to no one's surprise, was the most preferred day and Monday showed up at the bottom of the list. But Friday, a work day, the results showed, was preferred to Sunday, a leisure day. The future time perspective on Friday included a two-day respite, while the outlook on Sunday included returning to work on Monday. Some substantiation of this interpretation was afforded by the results of the ratings of those students who had classes on Saturday. Those students rated Friday lower than did those
who did not have Saturday classes. "The present study, taken together with previous research," Farber concluded, "would seem to suggest, with increasing confidence, that man's feeling tone or mood is determined less by his present activities than by his future time perspective. Western man, at least, seems indeed a creature governed by hopes and anxieties" (p. 256).

But laborers in the Lewinian vineyards have also been toiling on the other side, too, attempting to answer Lewin's question, "What changes in the perceived structure of the psychological present lead to a change in the structure of the psychological future, and what are the laws governing the interdependence of these two parts of the psychological field?" (1951, p. 55). Lippitt (1940) went at least a little way toward answering the question in the course of his study of democratic and authoritarian group atmospheres. The groups of boys were engaged in making masks, but one group was to arrive at the means to the goal democratically, the other through a more authoritarian structuring. Lippitt interpreted his study from the standpoint of the future time perspectives of the boys in the groups and concluded that:

The future, in terms of the general steps from the present to the group goal, existed quite clearly in the cognitive structure of each democratic group member . . . after the general explanation of mask-making by the leader. Also the first step of that locomotion had been structured by discussion into a number of different possible steps from which the member might choose his own activity goal. For the authoritarian member the future perspective ended almost entirely with the immediate activity of that particular club meeting. . . . The future remained unknown, in the possession of the leader, and even the structure of the immediate situation was rigid, for the leader directed each member toward a particular activity goal which he structured for the member. (p. 118)
Lewin, from his observations of children (1942), had concluded that a feeling of insecurity and frustration would diminish future time perspective. He found that if free play activity were interfered with, the child's average level of productivity would likely regress significantly and that the regression would be closely related to the change in the child's future time perspective. The child, now aware that the powerful adult might interfere at any moment, is paralyzed as far as long range planning is concerned.

It is difficult, in a study of the relation of future time perspective to academic achievement by Teahan (1958), to tell which is the chicken and which the egg. Teahan found that, given the same level of intelligence, high achievers had longer future time perspectives than low achievers. He concluded that having meaningful subgoals on the way to the final goal (of vocational success) was important to academic success. However, it would seem to be just as plausible to interpret the results as meaning that academic success generates optimism and a longer future time perspective, while school failure generates pessimism and a truncated future time perspective. Teahan believes future time perspective influences present performance, but all he has done is to demonstrate a relation between the two, and not which is cause and which is effect.

Lewinian theory has hardly concerned itself with personality processes and emotional disturbance, and psychoanalysts have offered no empirical evidence for their theory beyond their rather unsystematic observations. In fact, not very much has been done at all to demon-
strate the relation between emotional disturbance and time disturbance in a conclusive way. The first systematic observations on this subject were made relatively recently, during the 1930's, by Israeli. His writings have a certain pioneer crudeness and freshness, and one would not want to put too much stock in his conclusions, based as they were on rather crude and imprecise methodologies. His major contribution was a book (1936) written under the auspices of the Social Science Research Council, in which he compiled data he collected at a number of mental hospitals in the United States and Great Britain. He wound up the book by rejecting most of the then current theories that related time to abnormal personality.

Israeli did find, however, that paranoid schizophrenics differed from melancholics in their outlooks upon the future. Melancholics were more depressed about the future; paranoids were limited in their outlook (span) and "Certain paranoid schizophrenics have an exotic outlook reflecting expectancy of endless success and a strong attraction for future goals" (p. 116). He also found that melancholics tend to view the past, present, or future as having no personal significance, and that patients with a limited outlook either had the least number of recoveries or took the longest time to recover.

Without a theory to bind his findings, Israeli was unable to present a cohesive picture of what lay behind the symptoms he observed. Probably his most important contribution to the study of future time perspective, besides his enthusiasm for it, is the future autobiography,
a methodological tool neither he, nor his successors, has exploited fully.

More recently, and with more sophisticated tools at their disposal, Davids and Parenti (1958) sought to establish a relation between emotional disturbance in children (seven to thirteen years of age) to their time orientation. The story completion technique devised by Barndt and Johnson was used to measure time orientation. Their hypothesis that disturbed children would be more present-oriented in fantasy than normal children was not confirmed, nor did they find, as was indicated earlier in this section, that "positive personality traits" and future time orientation were correlated.

In a study of future time perspective in schizophrenics, Wallace (1956) defined future time perspective as "the timing and ordering of personalized future events" (p. 240). He singled out for examination, two dimensions: extension, the length of future time conceptualized, and coherence, the degree of organization of the events in the future time span. He hypothesized that if future time perspective were significantly affected by mental disturbance, then schizophrenics would differ from normals on these two dimensions. His prediction was supported by his data on both counts. Extension scores for his normal group were higher than for the schizophrenic group, and despite some inconsistent results as far as coherence was concerned, Wallace concluded that normals were superior to schizophrenics with regard to the ability to order the contents of the future time span logically and meaningfully.
Lipman studied the relations between anxiety, defensiveness, and future time perspective. He utilized the Taylor Manifest Anxiety Scale and the K scale of the MMPI to measure anxiety and defensiveness, respectively, and a questionnaire of his own construction to measure future time perspective which tapped what Lipman considered to be nine conceptually distinct subvariables.

A cluster analysis of responses to all three measures yielded three clusters: (1) exaggerated goal frustration fears (chronic anxiety about reaching distant goals); (2) dismal unclarity (the inability to see future goals clearly), and (3) anxiety. Both of the first two clusters were highly related to anxiety, the third. Lipman explained his results in terms of a "two-factor" theory of the relation of anxiety to future time perspective. The individual who suffers from exaggerated goal frustration fears manufactures his anxiety, so to speak, out of his overconcern with the future. The person who manifests dismal unclarity, on the other hand, has had his future time perspective disorganized by his anxiety.

Bonier (1957) studied future time perspective in persons who differed in their belief systems. He used groups of "open minded" and "closed minded" college students (as defined by their scores on a scale designed to measure dogmatism, which Rokeach had devised) and had them tell stories to five cards from the Thematic Apperception Test. As his criterion of concern for the future, he used the proportion of future tense verbs to the total number of verbs each subject had used in his stories. His results suggested that his closed minded subjects
were more concerned with the future than were his open minded subjects. He also found that both on the Taylor Manifest Anxiety Scale and on ratings of the TAT stories, the closed minded subjects were more anxious than the open minded subjects.

Bonier interpreted his results along the line suggested by Rokeach (1960). The closed minded group, almost by definition in greater need of cognitive structure than the open minded group, reduces the ambiguity of the future by imparting to it a structure that it does not have. Both the concern of the closed minded persons for the future and the high level of dogmatism are related to their anxiety and can be interpreted as means of defending themselves against threat. Since the present study is in direct descent from Bonier's, a fuller consideration of the theory which underlies it will be presented in the following chapter.

III. THE PROBLEM

Within the literature which has been reviewed resides the general theoretical and empirical background for the present study. In this section, the specific rationale and the hypotheses it generates will be presented.

Theoretical Background

The view of future time perspective taken here is that the future is, in Kastenbaum's phrase (1959) "a temporal inkblot" onto which we are both free and forced to project. The process of projection is
assumed to include both cognitive and affective elements. The less possibility there is for cognition to enter into a perception, the more decisive are the affective components in determining what the perception will be.

Since the future is a vague region of the time span, and it is impossible actually to know what will happen, the view an individual has of his future is symbolic of his present situation, especially his "libidinal situation" (Schilder, 1936). Wishes, fears, anxieties, frustrations, conflicts, longings, hostilities, and all other manner of strivings enter into the determination of the individual's future time perspective.

The particular dimension of future time perspective which is being investigated in this study is intensity of concern for the future. Bonier (1957) has already demonstrated that individuals with greater anxiety manifest more intense concern for the future, and Lipman (1957) has shown a relation between anxiety and two forms of disturbed future time perspective which he called "dismal unclarity" and "exaggerated goal frustration fears."

It should be noted, however, that concern for the future is probably not unitary, e.g., it may be assumed to have "normal" and "disturbed" aspects. Different kinds of concern, arising out of distinct sources, can and must be distinguished in the interest of conceptual clarity. On the one hand, there is concern for the future that is relatively free from anxiety, which occurs as a normal and necessary anticipatory function. While it still may be generated by anxiety,
it is an accepted, culturally-prescribed anxiety, motivating but not incapacitating. The middle-class values of making plans for one's education and vocation, for financing one's children's education and one's own old age—even making plans for one's own death—are within this normal realm.

On the other hand, there is a concern for the future that is not so constructive, borne of the threat that its essential ambiguity poses for the individual. Attempts to make the future more definite than it is, to provide it with a structure it does not possess, and to know it better than it can be known are symptomatic of this other kind of concern. It is with this anxious peering into the future that the present study is concerned.

Were an attempt made to induce change in future time perspective through change in affect, it is likely that, in a randomly selected population of subjects, some might intensify their concern with the future while others would decrease in their intensity of concern for the future. Whether the individual increased or decreased his concern might depend not only on the change in affect but on the total cognitive-affective organization within which the change takes place. Rokeach (1960) has published theoretical and empirical findings that offer a framework into which anxiety, future time perspective, and general cognitive functioning can be fitted. Because the theory is important to this study, a short summary of it follows.

Rokeach's theory deals with beliefs and disbeliefs. Beliefs include anything that an individual holds to be true; disbeliefs include
what he holds to be false. Beliefs and disbeliefs may be held consciously or unconsciously, as expectancies or as implicit sets. The total belief-disbelief system "would thus be an organization of verbal and nonverbal, implicit and explicit beliefs, sets, or expectancies" (p. 32). Any individual's belief system, which includes both beliefs and disbeliefs, may be located somewhere along a continuum that stretches from open to closed. Rokeach defines a belief system as being open or closed on the basis of "the extent to which the person can receive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside" (p. 57). Examples of irrelevant factors are power needs, irrational ego motives, and unrelated habits, beliefs, and perceptual cues. The most important irrelevant factor, as far as this study is concerned, is anxiety. An individual who has a strong need to allay anxiety is more likely than one with only "normal" anxiety to act on received information in terms of his anxiety. One who does so is more likely to be closed minded; that is, prone to distort the import of the information he receives.

A belief system serves a dual function. First, it provides a needed cognitive framework for knowing and understanding. Second, it serves as a defense against threatening aspects of reality. Both needs, in varying proportions, are represented in all individuals. It is when one or the other predominates markedly over the other that a system of belief can be recognized as open or closed. The open system can be identified by a predominance of the need to know and to understand. It
is relatively free to deal with information on its own merits. The need to ward off threat is subservient. Closed systems of belief are exemplified by the reverse situation. The need to protect oneself against anxiety is so great that it overshadows the need to know and to understand. But the closed minded individual does not feel closed minded. On the contrary, he sees himself as being just as open minded as anyone else, a self-perception which is part of the total defensive posture; for if he did not feel that he knew, he would experience the anxiety he seeks to escape.

In the background of closed minded individuals, Rokeach sees feelings of aloneness, isolation, helplessness, and, hence, anxiety about what the future holds for them. Indeed, concern for the future, anxious concern, is one of the dimensions along which belief systems may be analyzed. An overconcern with either the past, the present, or the future is seen as incompatible with the evaluation of information on its own merits. Time perspective, for Rokeach, consists of the attention which is paid to these three time divisions, and it may be characterized as broad or narrow, depending on how inclusive of the three is the individual's concern. Infants and psychopaths, for example, are assumed to be narrowly engaged by the present, while older people and reactionary political movements are assumed to be concerned beyond what Rokeach considers to be proper proportion with the past.

It is the belief system that focuses on the distant future, however, which engages Rokeach's attention most; for the future, by its nature, may not be known. The "normal" time perspective, according to
Rokeach, is the one which allows for the evaluation of information on its own merits. It is an orientation "with both feet in the here and now" (p. 63), but includes some "disciplined" concern with the immediate future and the immediate past. Such concern can be helpful in understanding the present. The remote regions of the past and future, however, offer no such help.

The distant future becomes important in the study of belief systems because in closed belief systems, there is a lack of distinction between the immediate and the remote future. The remote future is "safe" for the closed minded individual because what he predicts cannot be refuted. While the open belief system uses the immediate future to confirm what is believed in the present, the closed belief system uses the present to "confirm" what will happen in the remote future. "For this reason, a narrow, future-oriented perspective, rather than a more balanced conception of the past, present, and immediate future in relation to each other, is also seen to be a defining characteristic of closed systems" (p. 64). The closed minded individual is concerned with the future because its vagueness is anxiety-provoking. The need to know is endangered by the open-ended future in which there is nothing definite that one can depend on. The closed minded individual reduces his anxiety by making it more "known" to himself than it can possibly be.

The present writer is largely in accord with Rokeach's analysis, but makes this amendment. It seems capricious of Rokeach to stigmatize concern for the distant time regions as being unrelated to the present. Whether it be the past or the future, the remote reaches of a phenomenal
time span would seem to have much to offer anyone who could make good use of his concern with them. Rokeach's own values about concern with past, present, and future are not shared by others. Kastenbaum (1959) for example, implies that those adolescents in his study who did not vigorously reject the remote future, which included death, would be more adapted to the idea of dying in their old age than the adolescents who shied away from such thoughts. Kastenbaum believes that the remote regions of the future frighten most adolescents, so that their lack of concern with it is defensive rather than natural, as Rokeach would seem to have it. The results of Bonier's investigation (1957) of differences between open minded and closed minded subjects in their concern for the near and distant future turned up no significant differences, and no support for Rokeach's theory.

Rationale

If one attempts to predict how a person will respond to a change of affect—in terms of his anxious concern with the future—one may take into consideration the total belief system within which the subject's concern for the future is embedded. In the present study, it is predicted that open and closed minded individuals will respond differently, in terms of the changes each shows in concern for the future, when a change of affect is induced.

Experimental Manipulation

In this experiment, a change in affect is to be brought about by subjecting open and closed minded subjects, i.e., high and low scorers,
respectively, on Rokeach's (1960) dogmatism scale, to a failure experience on a task in which it is assumed they will be ego-involved.

**The dependent variable.**—Anxious concern for the future is the dependent variable. Measurement of anxious concern for the future is to be made both before and after the failure experience, Bonier's method (1957) being used to compute the proportion of future tense verbs used in the stories told to Thematic Apperception Test cards.

**The task.**—An ego-involving task will be used to elicit answers to "dummy" questions about the second set of TAT cards. The subjects will be told that intelligent people, and people who understand each other very well, tend to agree on what the answers to the questions should be.

**The failure condition.**—As one experimental manipulation, a "failure" experience is presented to one group of subjects. Failure is expected to induce a syndrome of feelings including anger, frustration, depression, self-reproach, and anxiety. Thus, the subject's confidence is to be shaken with an intended threat to a positive self-concept, and reinforcement for a negative self-concept. It is assumed that such feelings will elicit the subjects' typical cognitive responses to threat. A control group of subjects will also answer the questions about the TAT cards, but will not "fail" them. It is assumed that they will not be threatened by this treatment.
The belief condition.—Closed minded persons are assumed to possess a cognitive structure which is already organized not so much about the cognitive as about the need to defend itself against anxiety. One way in which the closed minded person defends himself against anxiety is to maintain vigilance in regard to the future, and to "know" it. With a sudden increase in threat, the closed system, if it does not fall apart (and it is assumed that the threat generated will not be sufficient for that to happen) should close even more and manifest an intensified vigilance, and, hence, an increase in anxious concern for the future.

Open minded individuals, on the other hand, are assumed to have a cognitive system which is more truly cognitive and less a defense against anxiety. While this is a sign of the strength of the system for handling cognitions, it is not necessarily a strength for coping with anxiety when it arises. In fact, because it is not a system which typically defends against anxiety, it is more likely to be disrupted by anxiety when it is faced with it. Possibly the price paid for an open belief system is its relative vulnerability to anxiety-provoking stimuli. For the open minded person, disruption of the cognitive system should entail a decrease in anxious concern for the future, and what Lipman (1957) called "dismal unclarity." As a second experimental manipulation, then, open and closed minded subjects will be selected for the experiment.
Relational Proposition

It is the fundamental proposition of this investigation that if a person's future time perspective and affect are interrelated aspects of his psychological activity, then a change in his affect will be associated with modification of his perspective of the future.

Hypotheses to be Tested

The specific hypotheses to be tested in this study are these:

a. For open minded subjects, failure, as compared to non-failure, will be positively associated with greater decrease in anxious concern with the future.

b. For closed minded subjects, failure, as compared to non-failure, will be positively associated with greater increase in anxious concern with the future.
CHAPTER II

METHOD AND PROCEDURE

I. SUBJECTS

Fifty-six subjects were chosen from a pool of 332 female students in introductory psychology classes at The Ohio State University who had filled out Rokeach's dogmatism scale (1960) during their first week of class. Twenty-eight students whose scores were at the extreme high end of the distribution, and 28 whose scores lay at the extreme low end of the distribution were selected to comprise the closed and open groups, respectively. Each group was then divided into an experimental and a control group with 14 members in each. The experimental and control groups at each extreme were chosen so as to equalize their mean dogmatism scale scores. Thus, the following four groups were formed: closed experimental; closed control; open experimental, and open control. The mean dogmatism scale scores and the standard deviations for each of the four groups, as well as the parent population from which they were selected, appear in Table 1.

II. MATERIALS USED

A. Six cards from the Thematic Apperception Test (TAT) were chosen by the experimenter on the basis of his judgment of the cards' appropriateness for eliciting fantasies from the subjects. The six cards were randomly divided into two sets of three each. Set A
TABLE 1
MEAN DOGMATISM SCALE SCORES AND STANDARD DEVIATIONS
FOR ORIGINAL EXPERIMENTAL AND CONTROL GROUPS,
AND POPULATION FROM WHICH THEY WERE DRAWN

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed Experimental</td>
<td>14</td>
<td>188.79</td>
<td>8.78</td>
</tr>
<tr>
<td>Closed Control</td>
<td>14</td>
<td>187.71</td>
<td>11.07</td>
</tr>
<tr>
<td>Open Experimental</td>
<td>14</td>
<td>100.95</td>
<td>10.33</td>
</tr>
<tr>
<td>Open Control</td>
<td>14</td>
<td>104.50</td>
<td>9.01</td>
</tr>
<tr>
<td>Total Population</td>
<td>332</td>
<td>144.20</td>
<td>23.05</td>
</tr>
</tbody>
</table>
consisted of Cards 1, 4, and 14. Set B consisted of Cards 2, 8GF, and 17GF.

B. For each of the six TAT cards, the experimenter prepared a spurious four-choice "test" consisting of ten items related to the situation depicted in the drawing (See Appendix A). In the judgment of the experimenter, there are no objective answers to these questions.

C. Actually to take the tests, subjects used a self-scoring testing and teaching device, one of the early teaching machines, which provides immediate feedback about the test performance. It was devised by Sidney Pressey at The Ohio State University for more benign, educational purposes than the one to which it was put in this experiment. The device is a 3" x 4" punchboard with numbers of test items running vertically down the left side of the board, and four holes, labelled "a," "b," "c," and "d" next to each number. The subject answered each test question by putting the point of her pencil in the hole corresponding to the letter of her choice next to the number of the test item she was working on. A scoring key, covered over by a blank sheet of paper, was placed directly beneath the holes in the punchboard (for the experimental subjects, only. No scoring key was used for the control groups). If the subject's answer was "correct," her pencil went through the hole in the scoring key. If she was "wrong," there was not a hole for her pencil to go through and it was stopped.

The keys in this experiment were so constructed that the items the subjects answered correctly or incorrectly were predetermined by
the experimenter who had either punched out no holes next to the item number, or had punched out all of them. For each of the three tests each experimental subject took, she was "wrong" on either eight, nine, or all ten of the test items.

D. A post-session questionnaire (see Appendix B), designed as a check of the efficacy of the failure experience in eliciting the desired affective reaction, was administered to each of the subjects at the end of the experiment. The first two questions of the questionnaire were intended to tap the subject's usual level of confidence in herself and how she felt, relative to that level, when she came for the experiment. Questions 3, 4, and 5 were designed to elicit the direction and the extent of the subject's feelings in connection with the experimental treatment (of failure or non-failure). Question 3 asked whether the subject's general feeling state was better, the same, or worse; Question 4 asked about the subject's feelings concerning her intelligence and her ability to understand people; and Question 5, about the effect on the subject's feelings of what the experimenter said and did.

The last two questions, 6 and 7, were designed to obtain a crude measure of the subject's ego-involvement in the task and her motivation. Question 6 asked for the subject's feelings about the importance to the subject of the task of answering the test questions. Question 7 was intended to determine how hard the subject worked at the task, regardless of how important it was to her.
III. GENERAL DESIGN OF THE EXPERIMENT

All subjects were seen individually. Each subject began by telling stories to either Set A or Set B of the TAT cards. Nothing preceded this storytelling except some general introductory remarks, designed to interest the subject in the experiment and to elicit cooperation and motivation (see next section). Subjects in the experimental groups were then given the three tests for the set of TAT cards they had not yet told stories to. This testing, together with the remarks of the experimenter, constituted the failure experience for these groups. The open and closed control subjects underwent a parallel experience of answering the questions, but the situation was structured by the experimenter as an investigation of preferences, not a test, and the punchboards, with the scoring keys removed, were used only to record answers. After answering the questions, all subjects told stories to the second set of TAT cards. When they had completed their stories, the subjects were asked to complete the questionnaire.

It was the experimenter's intention to counterbalance the sets of TAT cards, half of each group getting Set A first, and the other half Set B first. His own clerical negligence, however, resulted in a lop-sided counterbalancing. The order of presentation of cards within each set was varied randomly and the number of items missed on each of the tests, either eight, nine, or all ten, was also varied among subjects and TAT cards. Figure 1 is a schematic representation of the experimental design.
Experimental Groups

Tells-Stories  
A or B  
Tell Stories  
B or A  

Failure Tell Stories  
B or A  

Control Groups

Tell Stories  
A or B  
Non-failure Tell Stories  
B or A  

Fig. 1.—Design of the Experiment

IV. DETAILS OF THE PROCEDURE

Pre-test.—Each subject was seen individually in the experimenter's office. Immediately upon entering the office, the subject was seated at the experimenter's desk, and the following was read to her:

I want to thank you for coming in and for the cooperation I know that you will give me throughout the experiment. What you do here today is very important to the research I am working on so you must listen carefully to everything I say. In this experiment I am interested in exploring the processes through which people come to understand each other. I am going to ask for your full cooperation on a couple of tasks that will give me some important information about this.

Right now, I am going to show you a series of pictures, one at a time, and I want you to tell me a story about each picture. The first thing I will ask you about each picture is, "What is going on at the present time?" When you have finished telling me that, I will ask you, "What happened in the past to lead up to this situation?" Finally, I will ask you, "What will happen in the future?" In this way, we will get a rounded story to each picture. Do you have any questions?

All stories were tape recorded to insure that the stories would be uninterrupted and that they would be faithfully transcribed.

A word might be in order at this point about the seeming impropriety of a procedure for obtaining TAT stories such as is described above, a procedure which allows such drastic control over his subjects'
responses to the experimenter. By many conscious and unconscious techniques, the experimenter could get more or less of whatever he was looking for in the stories. What necessitated the structuring of the storytelling procedure in the first place was the finding (in a pilot study) that stories given to the simple instruction, "Tell me a story," were, more often than not, rather short. Since in this experiment the increase or decrease in percentage of verbs is the criterion measure of the dependent variable, it was necessary to do something to insure that there was sufficient "floor" for the percentages to decrease. Equally important was the matter of the confidence that could be put in small changes in the numbers of verbs when the original number was small. Structured stories would contain more verbs, but spontaneity was reduced and artificiality introduced. It was seen to be the lesser of two evils. The problem of controlling the experimenter's bias was handled in two ways. First, the experimenter compiled a master list of subjects as soon as they were selected, and deleted all information identifying them as being open or closed subjects. In addition to this precaution, the experimenter adopted a code of uniform behavior which included keeping a pokerface throughout the storytelling and waiting before going on to the next section of the story, or the next card, until the subject had indicated by definite word or gesture that she was through with the section she was working on.

When the subjects had finished telling the third story of the set, the experimenter said, "That was fine. Now we are going to do something different for the next three pictures." At this point, the procedures
for the experimental and control groups diverge, and they are presented separately.

Experimental treatment - Experimental groups. - The following was read to each experimental subject:

Before you tell stories to these next three pictures, I want you to try to answer some questions about them. There will be ten questions for each card, and each question has four choices. (The sheet of questions was then placed in front of the subject.) You are to answer these questions by means of this punchboard. (The punchboard was presented to the subject.) Have you ever used one of these before? (If the subject said, "Yes," the experimenter said, "Then you will remember that . . ." and went on with the explanation given to the subjects who were unfamiliar with it. To the unfamiliar subjects, the experimenter explained:) These are the numbers of the test items down the side, and next to each number are four holes that correspond to the choices for each question. You are to read each question, decide which of the four choices is correct, and insert the point of your pencil in the proper hole. If you are correct, your pencil will go through the paper; if you are wrong, it will not go through the paper. In this way you will know the results of the test immediately. You have only one chance to answer each question. If you answer an item incorrectly, you must go on to the next question immediately. Do you understand what you are to do?

Some of these questions may seem foolish to you, and you may wonder how anyone could ever do more than guess at them. But research has shown that people who are intelligent and who understand other people very well strongly agree on the answers to these questions. The most intelligent and the most perceptive people are the ones who give the most right answers, so in a way you are competing with these very bright people on these tests. I should tell you that it is not common for anyone to miss more than five questions on any one of these tests.

We have found that people do best when they answer with the first thing that they think is right; so for each ten questions, you will be given only one minute and one-half, or nine seconds per question. That means you have to hustle. The items you do not complete will be subtracted from your score. Do you have any questions? Go ahead.
The experimenter used a stop watch ostentatiously and reminded the subject of how much time remained every thirty seconds. After the first test, the experimenter said in a disturbed voice:

I don't think I've ever seen anyone do as badly as this on one of these. This is very surprising. There must be something wrong. (Checks the scoring key.) Let's try another and see if you can do better.

After the second test, the experimenter said:

You didn't do any (or much) better on this one. This is about the worst performance I've had on these so far. Try this last one and let's see if there's any improvement.

After the third test, the experimenter said:

You seem to have had a lot of trouble with these things. Maybe there's something about these pictures that disturbs you. The stories you tell about them may tell us what's wrong here.

Experimental treatment - Control groups.—The following was read to each control subject:

Before you tell stories to these next three pictures, I want you to help me with some questions I have made up about each picture. What I am trying to find out is whether a number of people like yourself can agree on the answers to these questions. There will be ten questions for each card, and each question has four choices. (The sheet of questions was placed in front of the subject.) I would like you to tell me what you think the right answers might be to these questions by using this punchboard. (The punchboard was presented to the subject.) Have you ever used one of these before? (If the answer was "Yes," the subject was told: "Then you will remember that . . . ," and the same explanation as given to subjects unfamiliar with it was given. To the unfamiliar subjects the experimenter explained) These are the numbers of the test items down the side and next to each number are the four holes that correspond to the choices for each question. You are to read each question, decide which of the choices you prefer, and insert the point of your pencil in the proper hole. If this were a real test, your pencil would go through the paper if your answer was right, but would not go
through if it were wrong. However, this is not a test. There are no right or wrong answers, so your pencil will go through the paper every time. This is just a way of recording your choices. I am interested in finding out if people tend to make the same choices.

Some of these questions may seem foolish to you, and you may wonder if you are doing anything more than guessing at them. I can assure you that I had something serious in mind when I made up the questions, and even if they do not seem sensible, your answers to them will be very helpful to me.

I would like you to answer these questions with the first thing that comes to mind, since that is probably your truest reaction. Therefore, I am going to ask that you move through these questions very rapidly and take no more than one minute and one-half for all ten, or nine seconds per question. Do you have any questions?

No stop watch was used with control subjects, nor were any comments made, except that when all three tests were completed, the experimenter said, "Thank you. This has been very helpful to me. Now we can go ahead with the stories."

Post-test.—Directly following the answering of the questions, all experimental and control subjects were handed the first TAT card about which they had answered the questions, and the experimenter asked: "What is going on at the present time?" The procedure was the same in this phase of the experiment as it was in the pre-testing. However, the experimental subjects, when they were handed each card, also heard the experimenter make a remark about their performance on the test. The experimenter either said, "You did extremely poorly on this one," "This one gave you the most trouble," or "You really failed badly on this one."
Post-session questionnaire.—As soon as she had finished telling
her last TAT story, each subject was given a post-session questionnaire,
told to read the directions at the top and to fill it out.

V. SCORING OF THE STORIES

The criterion of concern with the future was the proportion of
future tense verbs, based on the total number of verbs given to all
three of the TAT cards in each set. Categorizing verbs as either past,
present, or future was not entirely objective, and a set of rules
(Appendix C) had to be devised to insure as great a reliability as
possible. The rules arrived at by the experimenter on the basis of a
number of pilot study stories he listened to were applied to the stories
in the experiment proper, and the numbers of past, present, and future
tense verbs were recorded. A judge, pretrained to use the scoring rules,
independently scored 37 stories given by eight subjects out of a total
of 334 stories given by 56 subjects.

There was 94 per cent agreement between the experimenter and the
independent judge in classifying individual verbs. Percentages of
past, present, and future tense verbs were also computed, either for a
full set of three cards, only one card, or two of the cards combined so
that a total of 39 comparisons between the percentages arrived at by
the experimenter and the judge could be made. The mean difference in
percentage between the two sets of comparisons was 2.5. The range of
differences was from zero (in one-third of the comparisons) to seven
(in one-tenth of the comparisons). Although even higher reliability
might have been desirable, the level which was attained was deemed sufficient for the purposes of this experiment.

VI. ANALYSIS OF THE DATA AND EXPERIMENTAL HYPOTHESES

Three percentage scores—past, present, and future—were derived for each subject for each of the sets of TAT cards. The percentage scores were arrived at by totaling the number of past, present, or future tense verbs for the three stories within the set, and dividing each of those sums by the total number of verbs—of all tenses—in the three stories. These percentage scores are the basis of the comparisons made in testing the hypotheses and of the exploratory analyses made supplemental to the central hypotheses.

Since the exact counterbalancing of Sets A and B of the TAT cards which had been planned was not carried out, an initial analysis was made of the differences between Set A and Set B in eliciting past, present, and future tense verbs. Only the pre-test percentage scores were used in the analysis. The Mann-Whitney U-Test (Siegel, 1956) was used to test for the significance of the differences. No hypotheses were entailed in this analysis, and so two-tailed tests of significance were made.

An analysis was also made of the pre-test differences between groups in their usage of past, present, and future tense verbs. The differences were tested for significance by the Mann-Whitney U-Test. Only one prediction about the direction of difference was made in this analysis. It was hypothesized that the closed groups would have signif-
icantly higher percentage scores of future tense verbs than the open
groups, a finding that would be in accord with Bonier's (1957). A one-
tailed test was made for this hypothesis; two-tailed tests were made for
the differences between groups on past and present usage.

It was supposed that any significant changes in concern for the
past, present, or future from the pre- to the post-test would depend
upon the efficacy of the experimental treatment in bringing about a
change in affect. To assess how much change there was, and to gain
additional understanding of the nature of the changes, responses to the
post-session questionnaire were analyzed. Responses to each of the
questions, originally in either four or five choices, were reduced to
two categories appropriate to each question:

Question 1: I usually feel: (+) confident; (-) unconfident.

2: When I came for the experiment I was feeling:
(+) the same or better than usually; (-) worse
than usually.

3: Now, after giving my answers to these questions,
I feel: (+) the same or better; (-) worse.

4: About my intelligence and my ability to understand
people, I now feel: (+) the same or more confi-
dent; (-) less confident.

5: What the experimenter said and did made me feel:
(+) no differently or better about myself; (-)
worse about myself.

6: As I was answering the questions, I felt that what
I was doing was: (+) important; (-) unimportant.

7: As I was answering the questions, I felt that I
was: (+) trying hard; (-) not trying hard.
(Only three subjects indicated that they were not
trying hard on this question, and so no analysis
was made for it.)
The category to which each choice was assigned is indicated by the appropriate symbol next to it on the sample of the questionnaire in Appendix C. The Chi Square Test (Siegel, 1956) was used to test the differences between groups when the N was sufficiently large to justify its use. When single groups were compared, the Fisher Exact Probability Test (Siegel, 1956) was used, since the minimum expected frequency of five in each of the cells of the contingency table could not usually be met. Exact probabilities for the Fisher Test were not computed; instead, significance levels were read from a table of critical values. (Siegel, 1956)

A prediction of the direction of the differences between the experimental and control groups on Questions 3, 4, and 5 of the post-session questionnaire was implicit in the experimental design, and one-tailed tests of significance were applied for those questions. Supplemental analysis was made of the other questions, using the same statistical techniques but applying two-tailed significance tests since no hypotheses were involved.

The reporting of the results in the chapter to follow may be anticipated here by revealing that the analysis of Questionnaire items 3, 4, and 5 indicated that the experimental treatment was far from uniform in its effects. Some of the experimental subjects experienced the failure situation without any reported change in their affect, while a number of control subjects reported feeling worse after their non-failure experience.
Logic dictated that in addition to reporting the analysis based upon the original groups of experimental and control subjects, another analysis be made, this one based upon a reconstitution of these groups to reflect the phenomenal effect of the experimental treatment on the individual subjects. Thus, a parallel set of analyses has been made of the data based upon what will be called affected and unaffected groups.

A subject was assigned to either the open affected or closed affected groups if she had made one or more (−) responses to the questionnaire items 3, 4, and 5. Subjects in the open unaffected or closed unaffected groups had made (+) responses to all of the same items, thereby indicating that she had experienced no change in affect. Thus, an analysis of the data in terms of the differences in operations to which the experimental and control groups were exposed will be presented along with the analysis in terms of the phenomenal effects of the operations on the affected and unaffected groups.

Which analysis—by operation or by effect—is the more relevant test of the central hypotheses? It would seem that if the operations were imperfect in bringing about the desired changes, then an analysis by effect is a more accurate test of the hypotheses. Because the operations do not coincide with the effects, however, an analysis by effect is post hoc and its results must be accepted with caution. A rigorous test of the hypotheses, then, has not been made in this study, but will have to wait upon a study in which definable operations yield the predicted effects.
Two tests of the central hypotheses were made, one in terms of the original, the other in terms of the reconstituted groups. To test the hypotheses, the data were analyzed in terms of the difference scores between the percentage of future verbs in the pre-test and the percentage of future verbs in the post-test. The difference scores were arrived at for each subject by subtracting the smaller of the two percentages from the larger and affixing the appropriate sign to indicate whether the change from the pre- to the post-test was an increase or a decrease.

For the original experimental and control groups, the experimental hypotheses tested were these:

1. There will be a difference between the difference scores for the open experimental group and the open control group, the difference scores for the open experimental group showing greater decrease in the proportion of future tense verbs.

2. There will be a significant difference between the difference scores for the closed experimental group and the closed control group, the difference scores for the closed experimental group showing greater increase in the proportion of future tense verbs.

For the reconstituted affected and unaffected groups, the experimental hypotheses tested were:

1. There will be a difference between the difference scores for the open affected group and the open unaffected group, the difference scores for the open affected group showing greater decrease in the proportion of future tense verbs.

2. There will be a significant difference between the difference scores for the closed affected group and the closed unaffected group, the difference scores for the closed affected group showing greater increase in the proportion of future tense verbs.
The Mann-Whitney U-Test (Siegel, 1956) was used to test for the significance of the differences between the difference scores. A one-tailed test was made for the differences in future tense verbs. Supplemental analyses of the differences in past and present tense verbs were also made using the U-Test and applying two-tailed tests of significance.
CHAPTER III

RESULTS AND DISCUSSION

I. ORIGINAL EXPERIMENTAL AND CONTROL GROUPS

Comparison of Set A and Set B of the TAT cards.—The data in Table 2 suggest that there is no significant difference between Set A and Set B in eliciting future tense verbs. This makes it possible to perform a single analysis, combining both sets, as far as the future tense is concerned. There is a difference, however, between the two sets of cards in the proportions of both past and present tense verbs that they elicit. Set A evokes more past tense verbs than Set B, while Set B evokes more present tense verbs than Set A. Although the differences in two instances of the comparison are not great enough to reach statistical significance, in both cases the direction of the difference is consistent with these differences which are significant, and the trend is unmistakably strong. In view of these differences, all subsequent data for past and present tense verbs will be analyzed for each set of TAT cards separately.

Pre-test concern with past, present, and future.—None of the analyses of differences between groups in regard to their pre-test concern for the past, present, and future is significant except for that between the total open and total closed groups in their use of the future tense (Table 3). This difference was predicted on the basis of Bonier's findings (1957). The difference here is not as pronounced as
TABLE 2

MEAN PERCENTAGES AND MANN-WHITNEY U-VALUES FOR THE DIFFERENCES BETWEEN PERCENTAGES OF PAST, PRESENT, AND FUTURE TENSE VERBS ELICITED BY TAT SETS A AND B IN THE PRE-TEST.

<table>
<thead>
<tr>
<th>Groups Compared</th>
<th>N</th>
<th>PAST</th>
<th></th>
<th></th>
<th>PRESENT</th>
<th></th>
<th></th>
<th>FUTURE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>U</td>
<td></td>
<td>Mean</td>
<td>U</td>
<td></td>
<td>Mean</td>
<td>U</td>
</tr>
<tr>
<td>Total A</td>
<td>35</td>
<td>24</td>
<td>224b</td>
<td>50</td>
<td>515a</td>
<td>27</td>
<td>363</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total B</td>
<td>21</td>
<td>17</td>
<td>57</td>
<td>57</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed A</td>
<td>16</td>
<td>24</td>
<td>52a</td>
<td>48</td>
<td>59</td>
<td>29</td>
<td>98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed B</td>
<td>12</td>
<td>17</td>
<td>55</td>
<td>55</td>
<td>28</td>
<td>28</td>
<td>98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open A</td>
<td>19</td>
<td>24</td>
<td>63</td>
<td>51</td>
<td>44a</td>
<td>25</td>
<td>75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open B</td>
<td>9</td>
<td>17</td>
<td>60</td>
<td>60</td>
<td>23</td>
<td>23</td>
<td>75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:

All tests of significance are two-tailed.

*Significant at .05 level.

bSignificant at .02 level.

cSignificant at .01 level.
### TABLE 3

Comparison of Percentages of Past, Present, and Future Tense Verbs Used by Groups in the Pre-Test

<table>
<thead>
<tr>
<th>Groups Compared</th>
<th>TAT Set A</th>
<th></th>
<th>TAT Set B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>U</td>
<td>N</td>
</tr>
<tr>
<td><strong>Past</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total open</td>
<td>19</td>
<td>24</td>
<td>145</td>
<td>9</td>
</tr>
<tr>
<td>Total closed</td>
<td>16</td>
<td>24</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Open experimental</td>
<td>9</td>
<td>23</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>Open control</td>
<td>10</td>
<td>25</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Closed experimental</td>
<td>8</td>
<td>21</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td>Closed control</td>
<td>8</td>
<td>27</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td><strong>Present</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total open</td>
<td>19</td>
<td>51</td>
<td>126</td>
<td>9</td>
</tr>
<tr>
<td>Total closed</td>
<td>16</td>
<td>48</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Open experimental</td>
<td>9</td>
<td>50</td>
<td>39</td>
<td>5</td>
</tr>
<tr>
<td>Open control</td>
<td>10</td>
<td>51</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Closed experimental</td>
<td>8</td>
<td>49</td>
<td>31</td>
<td>6</td>
</tr>
<tr>
<td>Closed control</td>
<td>8</td>
<td>47</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td><strong>Future</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total open</td>
<td>28</td>
<td>24</td>
<td>392</td>
<td>14</td>
</tr>
<tr>
<td>Total closed</td>
<td>28</td>
<td>28</td>
<td>85</td>
<td>14</td>
</tr>
<tr>
<td>Open experimental</td>
<td>14</td>
<td>25</td>
<td>83</td>
<td>14</td>
</tr>
<tr>
<td>Open control</td>
<td>14</td>
<td>24</td>
<td>83</td>
<td>14</td>
</tr>
<tr>
<td>Closed experimental</td>
<td>14</td>
<td>29</td>
<td>85</td>
<td>14</td>
</tr>
<tr>
<td>Closed control</td>
<td>14</td>
<td>27</td>
<td>85</td>
<td>14</td>
</tr>
</tbody>
</table>

Note:

Except for the comparison between the total open and total closed groups, for which a one-tailed test of significance was made, all tests of significance are two-tailed.

*aSignificant at the .05 level.
pronounced as the one he found (his open and closed minded groups did not overlap at all in their use of the future tense), but that any difference at all manifested itself, in the face of the tightly structured storytelling situation in the present experiment, is a tribute to the reliability of the phenomenon.

The post-session questionnaire.—Table 4 summarizes the responses to the post-session questionnaire. Questions 3, 4, and 5 are the crucial ones since they were designed to measure the effect of the experimental treatment, and it is upon the efficacy of this treatment that subsequent interpretation of the data depends. It is evident that not all of the experimental subjects were bothered by their failure experience, and that some of the control subjects were disturbed even by their non-failure experience.

However, Table 4 does not clearly show how many subjects in each group gave a (-) answer on any one of the three questions, or a (+) response on all three. These data will be found in Table 5. Since change on even one of the questions indicates that the subject was feeling worse in one way or another, the experimenter deems it an acceptable criterion of a change in affect. An indication of no change on all three questions is the criterion for an absence of change of affect.

The experiment disturbed more control subjects than was anticipated. Although the difference in change between the experimental and control groups is significant for the closed minded subjects, it is not
TABLE 4
COMPARISONS OF GROUPS' RESPONSES TO POST-SESSION QUESTIONNAIRE ITEMS

<table>
<thead>
<tr>
<th>Question 1</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Question 2</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Question 3</th>
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</table>

<sup>b</sup> Significant at .05 level.
TABLE 4—Continued

<table>
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<th>$\chi^2$</th>
<th>Question 6</th>
<th>+</th>
<th>-</th>
<th>$\chi^2$</th>
</tr>
</thead>
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<tr>
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<td>14</td>
<td>5.10a</td>
<td>Total closed</td>
<td>26</td>
<td>2</td>
<td>3.04</td>
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<tr>
<td>Total control</td>
<td>23</td>
<td>4</td>
<td></td>
<td>Total open</td>
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<td>8</td>
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<tr>
<td>Closed experimental</td>
<td>4</td>
<td>10</td>
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<td>Closed experimental</td>
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<td>Closed control</td>
<td>13</td>
<td>1</td>
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<tr>
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<td>9</td>
<td>5</td>
<td>0.00</td>
<td>Open experimental</td>
<td>8</td>
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<td></td>
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<tr>
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<td>4</td>
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<td>Open control</td>
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</tr>
<tr>
<td>Open experimental</td>
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<td>5</td>
<td>2.06</td>
<td>Open experimental</td>
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<td>1</td>
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<td>Closed control</td>
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<td>2</td>
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<tr>
<td>Closed control</td>
<td>10</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Notes:

df = 1.

Where no $\chi^2$ value is reported, the Fisher Test was used.

One-tailed tests of significance were applied for questions 3, 4, and 5 for the comparisons between experimental and control groups. Two-tailed tests were used for all other comparisons.

aSignificant at the .05 level.

bSignificant at the .01 level.
significant for the open minded subjects. There was no difference in the numbers of open and closed control subjects who experienced a change of affect.

**TABLE 5**

**NUMBERS OF SUBJECTS SHOWING NO CHANGE (+) AND CHANGE (-) ON QUESTIONS 3, 4, AND 5 OF THE POST-SESSION QUESTIONNAIRE AND CHI SQUARE COMPARISON OF GROUPS**

<table>
<thead>
<tr>
<th>Group</th>
<th>+</th>
<th>-</th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open experimental</td>
<td>4</td>
<td>10</td>
<td>1.31</td>
</tr>
<tr>
<td>Open control</td>
<td>8</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Closed experimental</td>
<td>2</td>
<td>12</td>
<td>3.88(a)</td>
</tr>
<tr>
<td>Closed control</td>
<td>8</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

\(a\) Significant at the .05 level.

Two explanations were offered by the control subjects who were upset after the experiment. First, simply telling stories to the TAT cards was sufficient to shake their confidence in themselves. Although there was no expressed or implied evaluation of their stories, they were apparently doing their own evaluating. Secondly, these control subjects felt inadequate about answering the questions to the TAT cards despite the fact that the task had been posed as a date-gathering, not a testing procedure.

Only Question 3, of Questions 3, 4, and 5, shows a significant difference between the open experimental and open control groups, while for the closed subjects, only Question 5 shows significant differences between the experimental and the control groups. There is no significant
difference between any of the groups compared on Questions 1, 2, and 6. Apparently the groups did not differ significantly in regard to (1) their usual feelings of confidence in themselves; (2) their feelings when they came for the experiment, relative to their usual feelings, and (3) their involvement in the experiment.

The central hypotheses.—The data in Table 6 must be interpreted as failing to support the hypotheses. None of the differences in the pre-post comparison is significant, and none is even near enough to significance to suggest a trend. The closest that any datum comes to such a trend is that for the open groups within which ten of the 14 members of the experimental group decreased the percentage of future tense verbs used, while nine of the control group increased the percentage of future tense verbs used. On the basis of the bare numbers of subjects who increased and who decreased, it would seem that the difference between groups would be significant, but when the magnitude of the changes is considered, the lack of significance becomes understandable. The greatest increases came in the experimental, not the control group. This accounts for the fact that the means are essentially the same for the groups in the pre- and the post-test measurements.

II. RECONSTITUTED AFFECTED AND UNAFFECTED GROUPS

Composition of the reconstituted groups.—Table 7 shows the means and standard deviations of the dogmatism scale scores for the reconstituted groups, and the same data for the original groups are repeated from Table 1. While there are differences between the reconstituted
### TABLE 6

**COMPARISON OF PRE- AND POST-TEST DIFFERENCE SCORES FOR PAST, PRESENT, AND FUTURE TENSE VERBS**

<table>
<thead>
<tr>
<th>Groups Compared</th>
<th>TAT Set Order A-B</th>
<th>TAT Set Order B-A</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean Pre-</td>
</tr>
<tr>
<td>PAST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open experimental</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>Open control</td>
<td>10</td>
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<td>Closed experimental</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Open experimental</td>
<td>9</td>
<td>50</td>
</tr>
<tr>
<td>Open control</td>
<td>10</td>
<td>51</td>
</tr>
<tr>
<td>Closed experimental</td>
<td>8</td>
<td>49</td>
</tr>
<tr>
<td>Closed control</td>
<td>8</td>
<td>47</td>
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<tr>
<td>FUTURE</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Mean Pre-</td>
</tr>
<tr>
<td>Open experimental</td>
<td>14</td>
<td>25</td>
</tr>
<tr>
<td>Open control</td>
<td>14</td>
<td>24</td>
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<tr>
<td>Closed experimental</td>
<td>14</td>
<td>29</td>
</tr>
<tr>
<td>Closed control</td>
<td>14</td>
<td>27</td>
</tr>
</tbody>
</table>

**Note:**

One-tailed tests of significance were used for future tense comparisons, and two-tailed tests for past and present tense comparisons.
and original groups, they all range within three points for the means and four points for the standard deviations. Inspection for the experimental groups, and Mann-Whitney U-Tests for the control group reveals no significant differences between the affected and unaffected groups in relation to their dogmatism scale scores.

TABLE 7
MEANS AND STANDARD DEVIATIONS OF DOGMATISM SCALE SCORES FOR RECONSTITUTED AND ORIGINAL GROUPS

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
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</thead>
<tbody>
<tr>
<td>Open:</td>
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<td></td>
</tr>
<tr>
<td>Affected</td>
<td>16</td>
<td>101.70</td>
<td>9.59</td>
</tr>
<tr>
<td>Experimental</td>
<td>14</td>
<td>100.95</td>
<td>10.33</td>
</tr>
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<td>Unaffected</td>
<td>12</td>
<td>107.85</td>
<td>7.31</td>
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<td>Control</td>
<td>14</td>
<td>104.50</td>
<td>9.01</td>
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<td>Closed:</td>
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<tr>
<td>Affected</td>
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<td>185.60</td>
<td>8.46</td>
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<td>188.79</td>
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<td>10</td>
<td>188.00</td>
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<tr>
<td>Control</td>
<td>14</td>
<td>187.81</td>
<td>11.07</td>
</tr>
</tbody>
</table>

Concern for the past, present, and future on the pre-test.—The comparisons of the total open and total closed groups remain the same for the reconstituted as for the original groups, and are not repeated in Table 8. None of the comparisons is significant in the new analysis.

The post-session questionnaire.—Those comparisons which remain the same for the original and reconstituted groups are not repeated in
### TABLE 8

**COMPARISON OF PERCENTAGES OF PAST, PRESENT, AND FUTURE TENSE VERBS USED BY RECONSTITUTED GROUPS IN THE PRE-TEST**

<table>
<thead>
<tr>
<th>Groups Compared</th>
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<th></th>
<th>Set B</th>
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<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>U</td>
<td>N</td>
<td>Mean</td>
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<td><strong>PAST</strong></td>
<td></td>
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</tr>
<tr>
<td>Open affected</td>
<td>9</td>
<td>20</td>
<td>28.5</td>
<td>7</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>Open unaffected</td>
<td>10</td>
<td>28</td>
<td>28.5</td>
<td>2</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Closed affected</td>
<td>10</td>
<td>23</td>
<td>27</td>
<td>8</td>
<td>15</td>
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<tr>
<td>Closed unaffected</td>
<td>6</td>
<td>25</td>
<td></td>
<td>4</td>
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<td>Open affected</td>
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<td>7</td>
<td>61</td>
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<td>2</td>
<td>56</td>
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<td>51</td>
<td>51</td>
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</tr>
<tr>
<td>Sets A and B Combined</td>
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<td>Mean</td>
<td>U</td>
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<tr>
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<td>16</td>
<td>25</td>
<td>85</td>
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</tr>
<tr>
<td>Closed unaffected</td>
<td>10</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Note:**

Two-tailed tests of significance were used in all comparisons.
Table 9. Of the new comparisons made here, none distinguishes the groups involved at the level of significance.

The central hypotheses—Table 10 summarizes the results of the tests of the central hypotheses. Only one of the comparisons reaches significance, that between the closed affected and closed unaffected groups in regard to change in the usage of future tense verbs.

While the unaffected group actually decreased in the percentage of future verbs used, the affected group increased, as was predicted. However, the difference between the groups, significant at the .001 level for a one-tailed test, seems to derive more from the change in the unaffected group than in the affected group. Nine of the ten unaffected subjects showed a decrease, while 12 out of 18 of the affected subjects showed an increase. A Mann-Whitney U-Test, run on hypothetical data, shows that if the unaffected group percentages had showed no change from the pre- to the post-test, the actual change in the affected group would not have been sufficient to reach significance. Thus, on two counts—the post hoc nature of the groups and the decrease in future verbs by the unaffected group—the apparent significance of the results must be interpreted cautiously, although they seem to offer some support for the hypothesis concerning the closed groups.

III. DISCUSSION OF THE RESULTS

Some support has been given the basic contention made here that future time perspective, especially concern for the future, is related to affective states and that a change in the latter is associated with
TABLE 9
COMPARISON OF RECONSTITUTED GROUPS' RESPONSES TO POST-SESSION QUESTIONNAIRE ITEMS

<table>
<thead>
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</thead>
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<td>15</td>
<td>.97</td>
</tr>
<tr>
<td>Total unaffected</td>
<td>16</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Open affected</td>
<td>10</td>
<td>6</td>
<td>.15</td>
</tr>
<tr>
<td>Closed affected</td>
<td>9</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Open unaffected</td>
<td>11</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Closed unaffected</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Question 2</td>
<td>+</td>
<td>-</td>
<td>( \chi^2 )</td>
</tr>
<tr>
<td>Total affected</td>
<td>29</td>
<td>5</td>
<td>.07</td>
</tr>
<tr>
<td>Total unaffected</td>
<td>19</td>
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<tr>
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<td>3</td>
<td></td>
</tr>
<tr>
<td>Open unaffected</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Closed unaffected</td>
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<td>1</td>
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</tr>
</tbody>
</table>

| Question 3 | + | - | \( \chi^2 \) |
| Question 4 | + | - | \( \chi^2 \) |
| Question 5 | + | - | \( \chi^2 \) |
| Question 6 | + | - | \( \chi^2 \) |

Notes:
Where there is no \( \chi^2 \) value, Fisher's Test was used.

\( df = 1 \).


**TABLE 10**

COMPARISON OF PRE- AND POST-TEST DIFFERENCE SCORES FOR OPEN AFFECTED AND UNAFFECTED AND CLOSED AFFECTED AND UNAFFECTED GROUPS FOR PAST, PRESENT, AND FUTURE TENSE VERBS

<table>
<thead>
<tr>
<th>Groups Compared</th>
<th>TAT Set Order A-B</th>
<th>TAT Set Order B-A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean Pre-</td>
</tr>
<tr>
<td>PAST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open affected</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>Open unaffected</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>Closed affected</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>Closed unaffected</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>PRESENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open affected</td>
<td>9</td>
<td>53</td>
</tr>
<tr>
<td>Open unaffected</td>
<td>10</td>
<td>49</td>
</tr>
<tr>
<td>Closed affected</td>
<td>10</td>
<td>51</td>
</tr>
<tr>
<td>Closed unaffected</td>
<td>6</td>
<td>42</td>
</tr>
<tr>
<td>FUTURE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open affected</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>Open unaffected</td>
<td>18</td>
<td>26</td>
</tr>
</tbody>
</table>

**Notes:**

Two-tailed tests of significance were applied for the past and present tense comparisons, and one-tailed tests for the future tense comparisons.

*Significant at the .001 level.
a change in the former. This conclusion, however, must be viewed with the utmost of caution, made imperative by all of the methodological shortcomings of this experiment and some of the contradictions in the data.

Given the propriety of reconstituting the experimental and control groups into groups of those phenomenally affected or unaffected by the experimental treatment, the hypothesis that the closed affected subjects would increase their concern for the future more than the unaffected subjects seems partially supported. What deserves further comment about this result, however, is the roles of the groups in making the difference significant: the almost unanimous decrease in the unaffected group and the much smaller increase in the affected group.

The most obvious explanation for the decrease in the unaffected subjects is that they really were not unaffected; that they were in some way rewarded simply by not being punished, and that they, therefore, experienced a reduction in anxiety. The reduction of anxiety had an effect opposite to the effect of increasing anxiety, and a decrease in concern for the future was manifested. This explanation is, of course, post hoc, and a study in which anxiety was intentionally reduced (by a success experience, perhaps) would be needed to verify it.

It was noted in the previous section that if there had been no change in the closed unaffected group, the change in the affected group would not have been enough to make the difference between the groups
significant. Only two-thirds of the affected subjects increased their concern for the future. What might have accounted for the absence of an increase in the other third? What is most immediately apparent is that they may not have been made anxious enough for their concern for the future to be modified. Some oblique substantiation for this is found in the comparison of the magnitude of decrease in the affected and unaffected groups. The mean decrease score of four for the affected group was only half as great as the unaffected group's mean decrease score of eight. A Mann-Whitney U-Test indicates that the differences between the groups' decrease scores is significant at the .05 level for a one-tailed test of significance. Again, this explanation is post hoc and a study with strength of anxiety as the independent variable and concern for the future as the dependent variable would be useful in checking it.

Weakness of induced anxiety may help to explain the negative results obtained for the open groups, too. It is possible that a greater dose of anxiety might have produced the predicted changes. If strength of anxiety were a critical variable, as suggested here, then the observed difference between the open and closed groups, in terms of change in concern for the future, may be accounted for in terms of an initial difference in vulnerability of the two groups to the impact of failure. The closed group (and this is working backwards from the results) seems to have been more affected than the open group, both in terms of feeling punished and rewarded.
In the aftermath, it would not be surprising if there were a difference between the open and closed minded subjects in their vulnerability to failure. The open cognitive system may not be weaker, as the experimenter stated earlier in this study (p. 39), but it may actually be a stronger system than the closed system. Thus, it may require more anxiety than was generated by the failure experience in this experiment to bring about the disruption of the cognitive system that was predicted for the open group, even though the anxiety was sufficient for a defensive reaction to occur in two-thirds of the closed minded subjects.

Another possibility must be borne in mind, however, concerning the one-third of the affected subjects who failed to increase their concern for the future. All cognitive systems, closed as well as open, are subject to disruption in the face of anxiety that cannot be coped with. It was predicted that the closed subjects would increase their concern for the future largely because the anxiety they would experience would be within the bounds of their capability to handle through the operation of their typical defenses. It is possible, however, that some of the subjects were disturbed beyond the point where their defenses were operating normally, and that the decrease in concern for the future that they manifested resulted from a disruption of the cognitive organization which characterizes them.

If a relation between the intensity of anxiety experienced and concern for the future were postulated, the original cognitive organization would have to be taken into consideration. It seems probable
now that for the open minded group the relation would be a linear one: the greater the anxiety, the greater the disruption of the cognitive system and, thus, the less concern for the future. The threshold of disruption, however, is probably fairly high, and until it was reached, there would be little effect of the anxiety on concern for the future. For the closed minded group, though, it seems likely that the relation would be curvilinear. As anxiety increases up to the limit of the defenses to operate normally, concern for the future increases, but beyond that point, cognitive disruption ensues and concern for the future decreases.

A phenomenal decrease in concern for the future, then, may come from either of two sources. It may come from a decrease in anxiety, as seems to have happened to the closed unaffected group, but can also come from an increase in anxiety that disrupts the cognitive system. One would have to know the immediate history of reward or punishment to comprehend the nature of the change in concern for the future.

IV. CRITIQUE OF THE EXPERIMENT

Various shortcomings of this experiment have been alluded to in other places in this report. They will be summarized and expanded upon here.

What adds the greatest uncertainty to the interpretation of the results of this experiment was the necessity to reconstitute the original groups into groups phenomenally affected and unaffected by the experimental procedure. Although pilot work had pointed to a more con-
sistent association of failure with change of affect, and non-failure with absence of change, subsequent modifications in the procedure, whose effects had not been calculated beforehand, were introduced into the experiment proper.

Less ambiguity might also have resulted if instead of relying on the procedure of counterbalancing Sets A and B of the TAT cards, a pilot study had been undertaken to find two sets of cards equivalent in the proportions of past, present, and future tenses they elicit. It is fortunate, considering the experimenter's clerical negligence in regard to counterbalancing the two sets of cards, that there was no significant difference between the sets in regard to future tense verbs elicited. That the sets could not be combined for the past and present tense verbs is largely to account for there being as little as there is in this report about those time segments. The changes from A-B and from B-A were most often contradictory, and it was impossible to make a simple statement of relationship.

A third criticism goes beyond what are simply errors in procedure. The problem of the criterion is even more fundamental. While it seemed proper, on the basis of Bonier's findings, to utilize the percentage of verbs as indicating concern for a particular time segment, the relation of formal grammar to psychological processes is an obscure one. And especially when verbs are as ambiguous about expressing temporality as they are in English, the relevance of counting them and inferring specific psychological processes from them is rather tenuous. Thus, the rules devised for scoring the TAT stories (Appendix C), though
they allowed for a high degree of reliability, do not insure requisite validity. They are, at best, crude and arbitrary, and founded on no firm psycholinguistic principles.

It seems plausible, at first blush, that talk about the future (were we able to discern it clearly) is related to concern for the future. The converse, however, lacks similar plausibility. The absence of talk about the future need not necessarily betray an absence of concern with it. Though we might have to be content with what works right now, if language is going to be utilized as a criterion of future time perspective, then some of the psycholinguistic assumptions underlying the relationship must be spelled out and tested.

In the discussion, it was stated that the level of anxiety to which the subjects were brought may not have been sufficient to bring about the changes in concern for the future that were predicted. It is likely that the experimental task, the spurious tests the subjects took, was not plausible enough. The closed minded subjects showed the most change, probably because they were more prone to "buy" the explanation given by the experimenter and, in turn, to experience their failure as real. But the task was apparently too transparent for the open minded subjects. It was thought that the best kind of task would be one directly associated with the TAT cards to which they would tell stories in the post-test, and that is why the task took the form of answering questions about the cards. However, it is probably more important that the task be one that makes sense to all the subjects, so that failure takes on more personal meaning.
V. IMPLICATIONS FOR FURTHER RESEARCH

A number of suggestions for research have been made in the previous two sections of this chapter. Some of the larger, less specific research possibilities will be discussed here.

In one sense, the present experiment is premature. So little is known formally about future time perspective, and the methodology of its assessment is so primitive, that priority in research well might be granted to investigation of a kind that would yield a semantic clarity and a precision of measurement that we do not yet possess, and that will come only slowly if we continue to be autistically "practical" about future time perspective.

It was assumed in this experiment, for example, that what was being measured was an anxious concern for the future as distinct from a hypothetical normal anticipatory, planning kind of concern. But as yet there is only a flimsy logic to guide us in such distinctions; we are short on empirical evidence.

Methodologically, it seems imperative that comparative studies be made to determine which methods of measurement tap which dimensions of future time perspective. Second, it would be useful to investigate the differential response of various dimensions of future time perspective to changes in affect. Clarity of the future perception, intensity of concern for the future, and future time span may all be related in quite different ways to changes in affect.
Eventually, what we find in the laboratory about modifications in future time perspective should be applicable to "real life" situations. In psychotherapy, for example, we should expect to find changes in future time perspective associated with various phases of the treatment, including the outcome. Indeed, modification of future time perspective may well be a vital criterion measure for success in psychotherapy.
CHAPTER IV

SUMMARY

Concern with the future is one dimension of future time perspective. Previous research has shown that there are historical, cultural, social, and psychological concomitants of concern with the future. In the psychological realm, in particular, it has been possible to specify the relation of concern with the future to such variables as age, institutionalization, emotional abnormality, and, especially relevant to this study, the nature of the belief system.

Individuals with closed belief systems, wherein cognitive functioning is subservient to the need to control anxiety, show more anxious concern with the future than individuals with open belief systems who are not as anxious and whose cognitive organizations are generally more free to deal with information on its own merits rather than on the basis of their anxiety.

Because the future is a vague, ambiguous, generally unknowable region of the time span, it is threatening to the closed minded individual whose security lies in his ability to "know." The closed minded individual reduces his anxiety by harboring the belief that he knows the future. The open minded individual, who has more tolerance for ambiguity, manifests less anxious concern with the future.

The present experiment was an attempt to bring about, through a laboratory experiment, a modification in the intensity of concern for the future shown by open and closed minded subjects. It was hypothesized...
that when subjected to a failure experience on a task in which they were ego-involved, closed minded subjects would tend to increase their concern with the future as a defensive measure against the increased threat, while open minded subjects, faced with the same failure situation, would decrease their concern with the future as a result of the disruption of their more vulnerable cognitive organization.

Twenty-eight open minded and a like number of closed minded female college students, selected from among the lowest and highest scorers respectively on Rokeach's dogmatism scale (Rokeach, 1960), were drawn from a pool of over three hundred students who had taken the scale. The open and closed groups were each divided in two to form comparable experimental and control groups.

All subjects began the experiment by telling stories to a set of three Thematic Apperception Test cards. Following that, the open and closed experimental subjects were subjected to a failure experience on a set of spurious tests ostensibly designed to measure their intelligence and ability to understand other people. The three tests, invented by the experimenter, each consisted of ten multiple-choice questions about one of the set of three TAT cards the subject had not yet told stories about. Failure was insured by using a punchboard-type self-scoring testing device with rigged scoring keys. When they had completed the three tests, the experimental subjects told stories to the three TAT cards they had just answered the questions about.

The control subjects, after telling stories to the first set of TAT cards, also answered questions about the second set of cards, but
the task was structured as an attempt to gather data about whether people could agree on what the answers to the questions were, rather than as a test, and scoring keys were removed from the punchboards which then served only as a means of recording the responses. The control subjects, too, told stories to the second set of cards when they had completed answering the questions about them.

A post-session questionnaire was administered after the last story had been told to gauge the effect of the experimental treatment on the subjects.

Concern with the future was defined as the proportion of future tense verbs used in the stories told to the TAT cards. A pre-test difference in concern for the future was found between the open and closed groups, with the latter, as predicted, showing more concern. However, when the difference in percentage between the pre- and the post-test was computed, and the groups compared, there was no difference between either the open experimental and open control or between the closed experimental and closed control groups.

In view of the fact that the analysis of the post-session questionnaire revealed that the failure situation had not made all experimental subjects feel worse, and that some of the control subjects had experienced an unpredicted change of affect, another analysis of the data was carried out, this time with the original experimental and control groups reconstituted into groups of subjects who had been adversely affected by the treatment they received and those who had not,
irrespective of whether they were originally experimental or control subjects.

The new analysis revealed a significant difference between the closed affected and closed unaffected group in the pre-post comparison. The former tended to increase their concern with the future, as predicted, and the latter to decrease in concern for the future. Because the unexpected decrease of the unaffected group added so greatly to the significance of the results, and because of the post hoc nature of the new groups, caution was exercised in interpreting the results. There was no significant difference between the open affected and open unaffected groups in the pre-post comparison in regard to concern with the future.
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BIBLIOGRAPHY


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APPENDIX A

TESTS FOR THE SIX TAT CARDS

-88-
1. The age of the boy in the picture is:
   a. 8
   b. 9
   c. 10
   d. 11

2. His father is most likely:
   a. a professional person;
   b. an office worker;
   c. a garage mechanic;
   d. a farmer

3. Intellectually the boy is:
   a. brilliant;
   b. very intelligent;
   c. average;
   d. below average.

4. In his family he is:
   a. the youngest child;
   b. the oldest child;
   c. a middle-child;
   d. the only child.

5. His family lives:
   a. in a large city;
   b. in a small city;
   c. in the suburbs;
   d. on a farm.

6. His religion is:
   a. Catholic;
   b. Protestant;
   c. Jewish;
   d. Mormon.

7. The boy's favorite hobby is:
   a. playing ball;
   b. stamp collecting;
   c. building model airplanes;
   d. catching butterflies.

8. The time of the picture is:
   a. morning;
   b. noon;
   c. evening;
   d. late at night.
9. The kind of car the family is likely to have is:
a. Chevrolet;
b. Cadillac;
c. Volkswagen;
d. foreign sports car.

10. His hair comes down over his ears because:
a. his family has no money for haircuts;
b. his father is too busy to take him for a haircut;
c. he does not like to get haircuts;
d. his mother likes him with long hair.

TEST FOR CARD 2

1. The farm is in:
a. Europe;
b. New England;
c. the South;
d. the midwest.

2. The time of the picture is:
a. the present;
b. ten years ago;
c. fifty years ago;
d. a hundred years or more.

3. The girl's age is:
a. 15;
b. 18;
c. 21;
d. 24.

4. The farmer's religion is:
a. Catholic;
b. Protestant;
c. Jewish;
d. Mormon.

5. The time of day is:
a. early morning;
b. late morning;
c. mid-afternoon;
d. evening.

6. The farmer's nationality is:
a. Welsh;
b. German;
c. Irish;
d. Scandinavian.
7. The books the girl is carrying:
   a. are Bibles;
   b. are text books;
   c. are novels;
   d. are ledgers.

8. The farmer's workday is how many hours long?
   a. 8;
   b. 11;
   c. 14;
   d. 17.

9. The temperature is about:
   a. 70°
   b. 80°
   c. 90°
   d. 100°

10. The farmer is using a horse because:
    a. tractors had not been invented yet;
    b. he has no money for a tractor;
    c. the land is not suitable for tractors;
    d. he prefers a live horse to an inanimate machine.

TEST FOR CARD 4

1. Judging by the girl's hair style, when would you estimate the scene is taking place?
   a. during the first World War;
   b. before the turn of the century;
   c. during the 1920's;
   d. during the 1930's.

2. The occupation of the man is:
   a. lawyer;
   b. construction foreman;
   c. milk truck driver;
   d. golf caddy.

3. The man's intelligence is:
   a. far above average;
   b. somewhat above average;
   c. average;
   d. below average.

4. His major recreation is:
   a. bowling;
   b. chess;
   c. photography;
   d. fishing.
5. His favorite magazine is:
   a. Harvard Law Journal;
   b. Playboy;
   c. Life;
   d. Consumers Reports.

6. The kind of motion pictures he enjoys most are:
   a. science fiction;
   b. westerns;
   c. love stories;
   d. about social problems.

7. The woman's intelligence is:
   a. far above average;
   b. somewhat above average;
   c. average;
   d. below average.

8. Her favorite magazine is:
   a. Ladies Home Journal;
   b. Harpers Bazaar;
   c. U. S. News & World Report;
   d. Screenland.

9. Her major recreation is:
   a. swimming;
   b. knitting;
   c. gardening;
   d. golf.

10. The kind of motion pictures she enjoys most are:
    a. love stories;
    b. historical novels;
    c. detective-mysteries;
    d. westerns.

TEST FOR CARD 8GF

1. The scene is taking place:
   a. 60 years ago;
   b. 40 years ago;
   c. 20 years ago;
   d. 10 years ago.

2. The girl is how old?
   a. 16;
   b. 18;
   c. 20;
   d. 25 or over.
3. The texture you would associate with her is:
   a. sandpaper;
   b. glass;
   c. damp earth;
   d. water-smoothed rock.

4. The girl likes to:
   a. read;
   b. swim;
   c. dance;
   d. collect butterflies.

5. The girl's religion is:
   a. Catholic;
   b. Protestant;
   c. Jewish;
   d. Mormon.

6. The time of day is:
   a. early morning;
   b. afternoon;
   c. evening;
   d. late at night.

7. The color of her skirt is most likely:
   a. black;
   b. red;
   c. green;
   d. blue.

8. Her favorite magazine is:
   a. True Confessions;
   b. Vogue;
   c. Newsweek;
   d. Readers Digest.

9. What fruit do you associate her with?
   a. lemon;
   b. pear;
   c. apple;
   d. plum.

10. Her socio-economic standing is:
    a. upper class;
    b. upper-middle class;
    c. lower-middle class;
    d. lower class.
1. The boy's age is:
   a. 15;
   b. 17;
   c. 21;
   d. 25 or over.

2. His religion is:
   a. Catholic;
   b. Protestant;
   c. Jewish;
   d. Mohammedan.

3. His favorite magazine is:
   a. Esquire;
   b. Saturday Evening Post;
   c. Sports Illustrated;
   d. Saturday Review of Literature

4. His occupation is:
   a. student;
   b. soda fountain clerk;
   c. artist;
   d. salesman.

5. His favorite kind of movie is:
   a. mysteries;
   b. westerns;
   c. love stories;
   d. biographies.

6. The time of day is:
   a. early afternoon;
   b. early morning
   c. early evening;
   d. late at night.

7. With what color would you associate him?
   a. yellow;
   b. blue;
   c. red;
   d. green.

8. His favorite recreation is:
   a. tennis;
   b. playing the clarinet;
   c. collecting rocks;
   d. building model railroads.
9. He is most likely to prefer to read:
   a. novels;
   b. sports books;
   c. the Bible;
   d. books on science.

10. His dress is usually:
    a. formal;
    b. flashy;
    c. sporty, but subdued;
    d. sloppy.

TEST FOR CARD 17GF

1. The time is:
   a. more than 100 years ago;
   b. more than 50 years ago;
   c. more than 20 years ago;
   d. more than 10 years ago.

2. The country is:
   a. the United States;
   b. Italy;
   c. Venezuela;
   d. Japan.

3. The girl is how old?
   a. 15;
   b. 18;
   c. 21;
   d. 25 or over.

4. With which food would you associate the girl?
   a. steak;
   b. sour cream;
   c. stuffed cabbage;
   d. roast chicken.

5. The girl likes to:
   a. fish;
   b. sew;
   c. dance;
   d. read.

6. Her religion is:
   a. Catholic;
   b. Protestant;
   c. Jewish;
   d. Buddhist.
7. What socioeconomic class does she belong to?
   a. upper;
   b. upper-middle;
   c. lower-middle;
   d. lower.

8. Her favorite color is:
   a. orange;
   b. pink;
   c. lavender;
   d. brown.

9. The month of the year is:
   a. January;
   b. April;
   c. July;
   d. October.

10. What taste do you associate her with?
    a. sweet;
    b. sour;
    c. salt;
    d. bitter.
APPENDIX B

POST-SESSION QUESTIONNAIRE
INSTRUCTIONS: Please answer these questions as honestly as you can. We usually do not like to reveal what others might consider weaknesses in us; and we do not like to give our true opinions if we think they will hurt someone else or ourselves. But if you do not reveal your true feelings below, the results of this research will not be very useful. Please be assured that nothing you say or do here will have any effect on your grades because this information is not given out to anyone.

1. I usually feel:
   (+) extremely confident in myself;
   (+) reasonably confident in myself;
   (-) not too sure of myself;
   (-) extremely sure of myself.

2. When I came for the experiment I was feeling:
   (+) much better than usually;
   (+) slightly better than usually;
   (+) about the same as usually;
   (-) slightly worse than usually;
   (-) much worse than usually.

3. Now, after giving my answers to these questions, I feel:
   (+) much better than before the experiment;
   (+) somewhat better than before the experiment;
   (+) about the same as before the experiment;
   (-) somewhat worse than before the experiment;
   (-) much worse than before the experiment.

4. About my intelligence and my ability to understand people, I now feel:
   (+) much more confident than before the experiment;
   (+) slightly more confident than before the experiment;
   (+) about the same as before the experiment;
   (-) slightly less confident than before the experiment;
   (-) much less confident than before the experiment.

5. What the experimenter said and did made me feel:
   (+) much better about myself;
   (+) somewhat better about myself;
   (+) no differently than I felt before;
   (-) somewhat worse about myself;
   (-) much worse about myself.

6. As I was answering the questions, I felt that what I was doing was:
   (+) very important;
   (+) fairly important;
   (+) only slightly important;
   (-) not important at all.
7. As I was answering the questions, I felt that I was:

(+) trying very hard to do them well;

(+) trying fairly hard to do them well;

(-) trying very little to do them well;

(-) not trying at all to do them well.
RULES FOR SCORING THEMATIC APPERCEPTION TEST STORIES

All verbs, except as noted below, are to be scored in one of the three categories of past, present, and future tense. The rules below are designed to help in the categorization of those verbs about which there is some doubt, and to anticipate some of the scoring problems that will arise from other sources.

It is not expected that the information on which a verb is to be categorized is always contained within the verb itself. The English language is not so simply constructed that its verbs fall neatly into the three time categories. Often, help is required from the context in which the verb occurs to make a determination of its tense. At other times, the meaning, in terms of time, which the storyteller wishes to convey is rather complex, and defies a simple past-present-future analysis. Those cases are relatively infrequent, but a generalization may be stated about scoring of those instances:

1. If there is any doubt remaining about the categorization of a verb after the rules have been consulted, the verb should be classified in the time segment in which it is being told. For example, if the storyteller is responding to the instruction, "What will happen in the future," and uses a verb about whose tense there is doubt, it shall be scored a future tense verb. However, the following rules should be consulted and applied before resorting to this "resigned" method of categorization.

2. Verbs referring to the subject, rather than to the story, are not scored at all. Thus, "I think . . .," or "It seems to me . . .," or "I can't tell exactly what is happening but I think . . ." will be ignored.

3. Repetitions should not be scored twice if it is evident that the storyteller does not mean to use the verb twice. Repetitions of verbs in two distinct sentences or when there is intent to create a literary effect by doing so are counted twice. If a statement is begun in one tense, broken off and begun again in another tense, the verb is categorized in the tense of the final, full statement. Thus, "He looks like he wants to - he'll go out soon," is scored as a future tense statement, and the beginning of the statement that was not completed is ignored.

4. Statements of appearance, such as, "She seems to be coming home," and "She appears as though she is thinking," are scored only for what follows the "She seems" or the "She appears." Thus, in the two examples, only one verb is scored in each. If there is no other verb, such as in the statement, "It looks like a bridge," then the only verb in the sentence is scored.
5. Statements of possibility, such as, "It could be night out" or "If they're disagreeing, it could be a number of things," are scored in terms of the relation of the statement to the story. In the first instance, "It could be night out," if the narrator goes on to say, "and the boy is standing by his window," then what seems to be intended in the first part is a tentative, hesitating committal. It should be scored as if it read, "It is night out . . ." In the second instance, the story would stand as well without this introductory statement which does not at all describe what is seen or is taking place, but simply represents the narrator's verbalization of a conflict about how to interpret the picture. None of the verbs in the statement, then, should be scored.

6. The verbs in statements ascribed to a person either in or related to the picture are categorized in the time segment in which they are being told. For example, "And she said to him, 'Jimmy, if you don't practice you won't get to go out.'" This sentence, were it not a direct quotation, would read, "And she said to him that if he did not practice he would not get to go out." Read this way, all of the verbs are of the past tense since all of the action was completed prior to the present telling of it. In most instances of quotation, the same reasoning will apply.

7. Verbs in a series are scored separately. Thus, "She's sitting, dreaming, thinking," are all scored in the present tense, while, "She'll work, try hard and finally win," represents three future tense verbs. No repetition of the auxiliary "will" is required for the verb to be scored.

8. Model auxiliaries such as "would," "should," and "might" preceding a verb sometimes obscure the temporal dimension. The context is of great importance here, and should be consulted before resort to Rule 1 is made. "And he decided he should try it," for example, appears fairly definitely as a past statement from the beginning of it, and so "should try" is scored in the past. "Would" is often used when the outcome of a story is asked for. Except when clearly contraindicated by the context, it should be scored as a future tense verb; "I doubt very much if she would change." The "I doubt" is not scored (Rule 2), and since "she would change" points fairly clearly to the future, it is scored in the future tense.

9. An infinitive is not scored separately from the verb with which it is associated. "He wants to be . . ." is scored only for the "He wants."

10. When a confusion exists between the grammatical tense of the verb and the meaning implied by the narrator, it is the meaning which determines the score. A frequent example is, "He is going to buy a suit." Here either a present or a future meaning is possible though the grammatical form is in the present tense. If the statement came when the
future had been asked for by the examiner, the future meaning of it would be quite clear. However, if it is made while the narrator is speaking of what is going on in the picture at the present time, and obviously refers to what the person is doing now, rather than what he intends, a present tense score would be appropriate.

11. Often narrators use "either-or" alternatives in telling a story. The problem arises of whether to score all of the alternatives. "Either he will go out, and the police will catch him, or he'll stay with her and be happy." Since there seems to be no other logical way to handle this problem, all the verbs in all the alternatives are scored.

These rules do not cover all the problems that arise in assigning a verb to a time category, but they will obviate most of the routine difficulties that arise. Peculiarities of expression often introduce problems which cannot be foreseen and which must be handled on the basis of the scorer's best judgment.
A U T O B I O G R A P H Y

I, Stanley Pavely, was born September 11, 1930, in New York, New York, where I received my secondary-school education. I attended the City College of New York which granted me the Bachelor of Arts degree in 1952 and the Master of Science degree in 1955. From 1953 to 1955, I served in the Army Medical Service as a Neuropsychiatric Technician and as a Clinical Psychology Technician. I was a Clinical Psychology Intern at Augusta State Hospital, Augusta, Maine, from 1955 to 1956, and a Vocational Counselor at the Vocational Consulting and Testing Division of the Polytechnic Institute of Brooklyn, Brooklyn, New York, from 1956 to 1958. While completing the requirements for the Doctor of Philosophy degree at Ohio State University, I served as a Teaching Assistant, and as a Counseling Assistant and Counselor in the University Counseling and Testing Center.