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1975
INTERNALITY - EXTERNALITY: A STUDY
OF DEVELOPMENTAL TRENDS & FACTORIAL COMPOSITION
FROM ADOLESCENCE THROUGH ADULTHOOD
DISSERTATION
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CHAPTER I

INTRODUCTION AND REVIEW OF THE RESEARCH

Perhaps the most widely accepted psychological principle, by both layman and psychologist, is that of reinforcement. Simply, a response that has been rewarded is more likely to be repeated than one which has not been rewarded. Similarly, one that has been punished is less likely to occur again, than one not punished.

Suppose, however, an individual does not believe that the rewards or punishments which occur relative to his behavior, are in fact, causally related to that behavior. A great deal of evidence has now accumulated which suggests that a person's behavior is quite different when he believes that rewards occur independently of his own efforts or personal characteristics, as compared to those instances when he feels that there is a contingent relationship between his behavior and subsequent outcomes. The foregoing notion has typically been described as "locus of control" or "internal versus external locus of control" (I-E).

The focus of the present research is concerned with the factors which lead to individual differences in such a belief and how such differences may be more noticeable during certain critical periods in development. In addition, this research deals with the dimensional characteristics of I-E, or more simply its factorial composition. In brief, the goal of the present research is the investigation of
a psychological concept which may enhance our current understanding of man's presumed feelings of personal control.

**Current State of I-E Theory**

Before proceeding to a specific discussion of I-E research, an attempt is made to outline the role of I-E in social learning theory (Rotter, 1954; Rotter, Chance, and Phares, 1972).

Social learning theory has provided the theoretical framework for I-E research. Rotter feels that human behavior is determined by two main factors: the first is the value of the goal toward which one is striving, and the second is the expectancy that these given behaviors will lead to the goal in question. Central to Rotter's position is the fact that I-E is regarded as one kind of expectancy.

According to social learning theory, a person's expectation that a given behavior will lead to a reward in a particular situation is determined by (1) the frequency with which he has been rewarded in this particular situation before; (2) the frequency with which he has received similar rewards in other situations; (3) the extent to which he believes that he controls the occurrence of such rewards. The third factor is the generalized expectancy, I-E.

Thus, the concept of locus of control deals with how
an individual perceives the world he lives in. At one extreme, he may see it as chaotic and unpredictable; at the other, as orderly and reliable. The way in which a person's world is perceived is likely to play an important role in determining his behavior and its outcomes (Nowicki and Strickland, 1971). Locus of control has been defined as follows:

When a reinforcement is perceived by the subject as following some action of his own, but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relative permanent characteristics, we have termed this a belief in internal control. (Rotter, 1954)

In other words, when an individual believes he has primary control over his own fate—produces his own reinforcements—and thinks that he can determine the way things turn out by the way he behaves, we say that he is internally controlled. When he believes that the things that happen to him are the results of the behavior of others (or the stars, or fate, or luck,) he is externally controlled.

Rotter's (1954) theory is one of a general class of psychological theories of human behavior which are used to predict an individual's actions on the basis of certain thoughts and feelings relevant to those actions. As mentioned earlier, Rotter has theorized that the likeli-
hood of an individual's engaging in a given act is a function of two variables: (1) the individual's "expectancy" that his or her behavior will bring the rewards available in the situation and (2) the personal "value" of these rewards for the individual.

The locus of control dimension represents the "expectancy" part of Rotter's theory - the relationship between the behavior and its outcomes. The dimension is treated as a personality trait by specifying this expectancy link in a generalized way rather than for a particular situation. The issue of treating this as a generalized expectancy will be addressed again during the review of the literature.

Locus of control should be distinguished from "expectancy of success." Expectation of success is our prediction of how a given endeavor will turn out: "I have a 50-50 chance of making it - or a 90-10 chance - or a 5-95 chance." Such an objective prediction has little relation to locus of control (McCandless, 1973). Similarly, locus of control should be distinguished from an accurate judgment of environmental arrangements. It is well known that the odds are stacked against black youth. For example, they have been found to score more external on locus of control tests than white youth (Nowicki and Strickland, 1971). However, when the way they answer
individual questions on an I-E scale is checked, it has been found that black's high scores are partially earned because they endorse items related to political power. The institutions of government, they believe, are outside their control. Government, they think, is an external agent, not responsive to their needs or efforts. But there is little difference between blacks and whites in their answers to questions that deal with areas seen as related to personal control. From what we know of government and prejudice, this is not an unreasonable point of view. Finally, locus of control should be distinguished from introversion-extroversion. This distinction is easily made when one considers that "introversion-extroversion" refers to an individual's interpersonal relationships. There is no reference to an individual's perception of relevant contingencies of reinforcement in this construct, while it is the key factor in the internality-externality dimension.

In summary, then, the locus of control construct is an integral part of social learning theory (Rotter, 1954). It refers to the degree to which individuals perceive the events in their lives as being a consequence of their own actions, and thereby controllable (internal control), or as being unrelated to their own behaviors and, therefore, beyond personal control (external control). It is viewed
as a generalized expectancy, as opposed to a specific expectancy, being an abstraction developed from a host of experiences in which expectancies have met with varying degrees of validation. Research findings indicate that I-E increases with age and shows sex differences (Phares, 1973). Furthermore, it has been used as one element in a behavioral prediction formula along with reinforcement value, and situational determinants (Lefcourt, 1966 and 1971; Phares, 1973). The present research will explore some of these issues; the possibility of age-related stress periods in I-E; the factorial composition of I-E; the presence of sex differences; and the possibility of generational effects on I-E.

**Review of the Literature**

Since the publication of two major review articles, (Rotter, 1966; Lefcourt, 1966) an increasing number of research investigations have been reported which directly pertain to the locus of control construct. Throop and MacDonald (1971) have amassed a bibliography containing 339 separate entries of immediate relevance to locus of control appearing through 1969. MacDonald has since compiled two additional supplements attesting to the continuous growth of research in this area. I-E research accounted for about 30% of the total literature in 1970. Several books have been published which focus on related
conceptions about self-direction such as hope (Stotland, 1969), personal causation (DeCharms, 1968), internalized control of behavior (Aronfreed, 1968), and alienation and value-expectancy disjunction (Jessor, Graves, Hanson & Jessor, 1968). In addition, there have been three separate review articles studying various aspects of locus of control since the publication of the first two reviews (Lefcourt, 1972; Minton, 1967; Joe, 1971). Currently, there are at least 9 different tests of locus of control in use (Bialer, 1961; Dean, 1961; Battle & Rotter, 1963; Crandall, Katkousky & Gandall, 1965; Rotter, 1966; Dies, 1968; Gozali & Bialer, 1968; Harrison, 1968; Nowicki & Strickland, 1970).

To construct a review of the totality of recent research, therefore, has become a forbidding task. The present review is by no means meant to be comprehensive; it is merely meant to serve as a basis for the ideas most relevant to the present study. Those seeking more complete reviews are directed to the material outlined in the preceding paragraph.

The evidence which has been amassed thus far indicates six areas of investigations within the field of I-E research: (1) the resistance to influence; (2) cognitive activity; (3) deferred gratification, achievement behavior, and the response to success and failure; (4) familial and social antecedents of locus of control; (5)
changes in locus of control; (6) personal versus system control. The present research deals primarily with 5 and 6 above.

I-E Generalized Versus Situational Expectancy: Very often, I-E studies give the impression that I-E is the only determinant of behavior. Certainly, however, with an organism as complex as the human being, there are multiple determinants of behavior. What is needed is more than just a series of studies which show that I-E affects (correlates with) certain behaviors. What is required, in addition, is research into the theoretical framework of I-E which may enable us to fit these I-E influences into the larger scheme of determinants of human behavior.

One of the purposes of the present study is to explore the possibility that the current assumption relating changes in I-E to age can no longer be held. It is usually assumed that I-E scores are relatively stable, and that changes in age alone result in an increase in internality. That is, older individuals are more internal (i.e. tend to obtain lower I-E scores) (Penk, 1969. Lefcourt, 1971; McCandless and Evans, 1973).

To justify this investigation, it is necessary to establish a basis for accepting the position that I-E is not merely a generalized expectancy, but also a situational one. As previously mentioned, it is apparent that for
the most part researchers conceive of I-E as a generalized expectancy. In addition, it is seen as a continuum. That is, people are neither internals nor externals, but rather may be described as being more or less internal as to perception of locus of control of reinforcement. In brief, an individual is presumed to have a generally internal orientation not just in the academic area but also in areas such as social relationships, or vocational areas. Thus, I-E expectancies are assumed to cut across specific need areas in the sense that they apply not to a single area of one's life, but to several.

Phares (1973) has criticized the bulk of I-E research carried out thus far for not systematically examining the role of the situation. As he points out, personality psychologists have been dominated by the view that the major determinants of human behavior are broad, general traits that are responsible for the presumed consistency in behavior that people show across situations.

More recently, however, there has been increasing attention devoted to the apparent intraindividual inconsistency in behavior that people show across situations. Mischel, (1968), after extensively reviewing the area, has asserted that the evidence on behalf of the predictive usefulness of most personality traits is exceedingly weak. He argues that individual dispositions do not seem to be consistent
from situations to situation. Thus, people who are disposed to be happy or cruel or achievement-oriented in one situation do not seem to be so in another situation. That is, traits do not seem to be very general if you look at the same person in different situations.

An early indication of the recognition of the situational impact on trait generality is seen in the Hartshorne and May (1928) study of children's honesty. In examining more than a dozen different types of situations, they found only a small tendency for children to be consistently honest or dishonest in all the situations. Burton (1963) factor analyzed the results from the Hartshorne and May study. Burton's reanalyses leads to a conclusion "not greatly different from that of Hartshorne and May" (Burton, 1963, p. 492). Burton found a weak common factor and suggested that an individual's reactions across temptation situations might not be totally random. However, this was already implied by the small but significant correlations in the original discussion by Hartshorne and May. Likewise, studies reported by Gergen (1968) have shown that people undergo major shifts in their self-concepts as they move from one social group to another. For example, their esteem levels are less likely to remain stable than to fluctuate markedly. Individuals are not so easily classified into groups of high and low self-esteem because they
seem to have the potential for both dispositions. When these arguments are combined with the fact that correlations between traits and behaviors of greater than .30 are seldom attained in the area of personality and style, there is good reason to question the claim that behavior is organized into general traits that can be used to predict actions. While it is not the investigator's intent to become involved in a long discussion of this question, several points appear worthy of comment, particularly since I-E is often construed as a trait-like concept.

Presently, it seems most promising to accept Mischel's research as a reason to increase the emphasis on the role of the situation in determining behavior, while continuing to incorporate personality factors in our explanations. This seems more useful than either the exclusive employment of broad traits, on the one hand, or total reliance on situational determinants, on the other. Thus, the argument reduces to the relative contribution of each set of factors.

In relating the above to I-E research, an examination of a study by Davis and Phares (1967) will illuminate the case in point. These researchers studied the effects of I-E on information-seeking behavior in a situation where subjects expected to attempt to change the attitudes of another person about the war in Viet Nam. Prior to the
influence attempt, subjects were asked to write down as many questions as they wished about the other person to facilitate their being able to exert influence. In this experiment, generalized expectancies were engaged by different instructions. For example, one group of subjects was told that success in influencing others was almost exclusively a function of one's skill. A second group was told that the influence process was so complicated that the success of any one person influencing another would have to be regarded as pure chance. The situation was left ambiguous for the third group, to which neither chance nor skill instructions were given. The research findings illustrate the complementary role played by personality and situational factors. Internals sought more information than externals in the ambiguous situation, but for subjects told that success depended on chance, there were no differences between internal and externals in the number of questions asked. In the skill situation there was a greater rate of question-asking for both internals and externals than in the chance situation. From this, we may conclude that not all subjects are equally responsive to the situational cues. That is, not only can a situational variable influence behavior related to a personality characteristic, but situational variables may also neutralize the operation of personality variables. The role of the situation in
relation to I-E is analogous to that of a moderator variable (Kogan and Wallach, 1969). Although we normally consider moderator variables to be personality concepts, they can be conceptualized in terms of situations also. For example, in the Davis and Phares study, the relationship between information-seeking and I-E was moderated by situational elements (skill, chance, ambiguousness). Therefore, it is the contention of the present researcher that the optimum approach to I-E should consider situational and personal variables as both separate and interacting determinants of behavior.

In summary, the foregoing discussion has established the situational component of I-E. It may be argued that not all individuals are equally responsive to the same situational cues. That is, a situational variable may influence the behavior of only those individuals who display a particular personality characteristic. If one were to pool individuals and disregard their personality differences, the role of the situation might be attenuated. Likewise, strong situational cues may neutralize the operation of personality variables. Therefore, one should consider the optimum approach discussed above.

Changes in I-E Beliefs: The next step in the investigation of the relationship of age to I-E involves a special case of the situational aspect; specifically, as this fac-
tor relates to changes in the strength of the I-E beliefs themselves.

Kiehlbauch (1968), using a male reformatory population, found that I-E scores showed a curvilinear relationship with an inmate's stay in the institution. Inmates scored higher in externality upon admission and shortly before release, than during the middle period of their internment. This same finding has been obtained by Mastellone, 1969. Kiehlbauch also found that anxiety scores showed a similar relationship, covarying with I-E scores. The initial stage of commitment, then, seems to be a time of anxiety and helplessness, whereas the middle period of internment is relatively stable, with less anxiety and stress; and therefore, provides a better opportunity for successful coping behavior. As the time for release approaches, however, uncertainties with regard to coping "in the real world" become more pronounced and are reflected in an increased sense of helplessness and anxiety.

In support of this analysis, Kiehlbauch did not find the terminal rise in either anxiety or external scores in a "work release" group. These men were allowed to work in the community during the day, returning to the institution only at night. In addition, Stolorow (1970) has found a positive relationship between I-E and reality events which precipitate stress. Support for this finding
can also be seen in Lazarus (1969) and Glass and Singer (1972). This research suggests that the locus of control beliefs can be influenced by events in the individual's life (situation) which relate to variations in uncertainty, lack of control, unpredictability and/or stress. Moreover, the external individual has repeatedly described himself as being more anxious than his counterpart (Feather, 1967; Watson, 1967; Platt and Eisenman, 1968; Ray and Katahn, 1968; Goss and Morosko, 1970; Hountras and Scharf, 1970).

Several studies involving changes in I-E have investigated the effect of specific natural events upon the overall I-E score. Gorman (1968) found that undergraduates scored more externally than would have been predicted by Rotter's data on the day after the 1968 Democratic National Convention. A large proportion of Gorman's student sample had been McCarthy supporters for whom the convention had been a disillusioning experience. Another national event, the draft lottery, was also found to produce certain predictable effects upon locus of control of college students. McArthur (1970) reported that students who became less susceptible to the draft by action of the lottery scored significantly more toward the external end of the I-E continuum than those whose status was little affected by the lottery. Similarly, Eisenman (1972) has
shown that specific experience in experiments involving random guessing increase a subject's externality, while experience in experiments where the subject maintained control produced the opposite effect.

From each of these studies it is possible to infer a mechanism of change. Kiehlbauch's investigation suggests that uncertainty can increase one's sense of external control. Gorman's and Eisenman's findings illustrate the role of expectancy invalidation. McArthur's results, on the other hand, indicate the effects of unanticipated events. In general, these findings suggest that specific life experiences which seemingly lead to a perception of uncertainty and/or stress may also lead to a rise in one's externality (i.e. as indicated by higher I-E Scores).

**Discontinuous Versus Continuous Development in I-E:** Thus far, the research reported has indicated a change toward increased externality, however, the change in I-E is not always unidirectional. Smith (1970) found that patients who sought psychotherapy to resolve an acute life crisis showed a significant increase in internality as they learned more effective coping techniques during therapy. Dua (1970) reported increased internality scores in patients involved in action-oriented and reeducative therapy. Gills and Jessors (1970) report that patients showing improvements in psychotherapy also show greater increases in internality
than untreated patients.

In summary, the research reviewed suggests that changes in an individual's locus of control can result from natural events as well as from deliberate effort such as psychotherapy. It has been necessary to review I-E research in terms of these two areas to establish a basis for one phase of the present research. As stated earlier, this researcher feels some justification for doubting the validity of the currently held position suggesting that the relationship between I-E and age is a simple increasing function. Most evidence is interpreted to mean that young children are more external than older children and in turn these older children are more external than adults. The hypothesis to be considered here is that the relationship of perceived locus of control to age is in fact discontinuous rather than continuous. Furthermore, it is hypothesized that this discontinuity can best be seen by the investigation of age related stress periods. The reviews presented thus far seem to indicate that I-E beliefs are not only situationally influenced but are specifically affected by "natural" life situations.

Although it was not the central issue of their study, Crandall, Katkousky, and Crandall (1965) found a trend for I-E scores to be relatively external at the third grade level with an increasing trend toward internality
reaching a maximum at the eighth and tenth grade levels, and returning to a more external level through the twelfth year. The trend was particularly apparent for the males in their sample. This finding does not support the continuous viewpoint of increasing internality with age. Crandall et al. suggested that with graduation approaching and the implicit possibility of greater uncertainty in life stemming from the prospect of leaving the structured environment of school, the individual very naturally becomes more external in his outlook. Furthermore, they suggested that with the greater pressure on the male in our society for achievement and independence, it was not surprising that the change toward greater externality was more visible in males.

Beebe (1971) administered the Bialer Locus of Control Scale to 4th, 6th, 8th, and 10th grade subjects with group sizes approximating 50 each. His results indicated the expected age increase in internality, and in addition, found an apparent leveling off at adolescence for both sexes. Contrary to his expectation, no significant sex differences in internality were found. Milgram (1971) using the same scale as Beebe with 1st, 4th, 7th, and 10th graders did find sex differences and an "age-related progression."

Distefano, Pryer, & Smith (1971) using Rotter's I-E scale with normal adolescents, psychiatric patients and
control Ss found that in the adolescent group there was a significant linear relationship for external-internal controls as a function of increasing age. However, this relationship was not found with the adult groups nor the psychiatric patient group. While their results conflict with the current I-E age relationship they do suggest that perception of rewards in the environment as internally or externally controlled is relevant to both normal development and emotional adjustment.

Horrocks and Mussman (1973), while not using a conventional I-E scale, found significant increases in the sense of personal control from junior high through college suggesting that I-E may indeed be significantly influenced by age. Furthermore, they note that in comparison to the other four groups in their study the junior high group (grades 7, 8, & 9) had the lowest percent per group of personal control and the 18-24 year olds the highest. They infer that the junior high group lacks the personality characteristics associated with personal competence and therefore may reflect the findings of other investigators relative to the "high stress condition" often faced in early adolescence. Although they do not discuss it in their report, their data do indicate that while there is an increase in personal control, it is by no means a continuous one. Besides the previously mentioned junior
high decrease, there is also a decrease between their 18-24 year old group and their 25-50 year old group. Thus, their research may be interpreted as indicating a discontinuous rather than a continuous development in internality and as suggesting the possibility of several different age related trends in I-E development. This together with Horrocks and Mussman's suggestions that the observed decrease may be due to stress during adolescence and the previous discussion of situational factors establishes the need for further research. To this investigator's knowledge there are no studies which bear directly on this topic; therefore, the present research has included this as one area of its investigation.

A Review of the Research on the Factorial Composition of I-E: The research reviewed thus far can be seen to support the position that I-E beliefs are not general beliefs but apply somewhat specifically to various life areas. Early attempts to develop subscales for the I-E Scale failed to produce anything significant. Rotter's own work with factor and item analysis did little to suggest the presence of any useful subscales (Rotter, 1966). Evidence is now accumulating which suggests that the I-E Scale may actually tap different levels of I-E beliefs, but the exact nature of these differing levels is not completely clear (Lefcourt, 1971). A number of more recent studies have
reported factor analyses of the I-E Scale; however, the results from these studies are very often inconsistent and not completely coherent (Phares, 1973). There are probably several explanations for this. First, different studies have used different populations. For instance, a sample of college students may show personal I-E beliefs relating to themselves, and also other I-E beliefs that relate to the same pattern of beliefs found in society. Elementary school students can not be expected to have the same beliefs as college students. Similarly, as pointed out in the review to follow, scales have been used which differ significantly from Rotter’s.

Lastly, changes in society itself may have neutralized or increased the pattern of separation between personal and social beliefs. Much of the work that suggests the presence of only one factor was done in the early 1960's. Phares suggests that this was before the preoccupation with the Vietnam war, the resort to overt demonstrations of radicalism and alienation, and the confrontations that pitted the individual against the "establishment." Furthermore, he suggests that these events might be expected to increase the individual's awareness of personal control versus system control. Thus, the present investigator feels that it is entirely possible that the use of the same scale within different time frames will yield different
outcomes and quite different views as to what the I-E Scale measures. Since the inception of the I-E scale, Rotter has reported a shift toward more externality (higher scores) for college students (Rotter, 1971). If there are different types of I-E beliefs, it is important to identify them so that predictive validity, as well as the theoretical framework of the concept, can be increased and improved. In brief, if beliefs that luck dominates one's success are not empirically the same as beliefs that powerful others control that success, it is important to investigate the differences, and this brings us to the second aspect of the present study.

To add to this point, several investigators have presented information challenging the strength of the I-E Scale as a unidimensional instrument. Very early, Crandall, et. al. (1965) using school children distinguished between control by impersonal forces and control by other people. They also made a distinction between responsibility for negative outcomes and positive outcomes. Recent work suggests a distinction between personal and ideological beliefs. Representative of this research is the work done by Mirels (1970). He administered Rotter's I-E Scale to a sample of college students (N=300) and through a factor analysis was able to identify two factors. These were (1) a belief in felt mastery over the course of one's life
and (2) a belief in the extent to which the individual feels capable of having an impact on political institutions.

Similarly, Guren, Guren, Lao, and Beattie (1969) have isolated two elements which they refer to as "personal control" and "system blame". The former factor was found to be unrelated whereas the latter measure was positively related to the choosing of non-traditional Negro careers, which these authors termed innovative behavior. Likewise, system blame was related to the readiness to join with others for social action. In contrast to previous experiments, then, externality in the sense of blaming the system for one's failures was associated with more aspiring ambitions, and a concern with social action. Consequently, these writers have argued that internality creates support for the status quo among groups that are subject to social injustice, shielding them from the perception of obstacles that can only be overcome through group action. One major problem with this study is that statements from both the so-called Personal Efficiency Scale and some racially-oriented statements were added to the I-E Scale. Lao (1970), using black college students, subsequently reported that these two factors do operate independently, "personal control" allowing prediction of behavior related to academic achievement, "system blame" predicting civil rights activity and the preferred mode of social action (participation in collective movements in preference to a concern with individual
One problem in relating these results to other I-E work is that the I-E measures used by Lao were different from Rotter's and other more commonly used scales.

Three other studies bear some relationship to this area of investigation. Thomas (1970) theorized that there is a conservative political bias to the I-E Scale. His study used sixty families who were politically active; half held liberal views and half were conservative. While it was found that the conservatives scored at a more internal level, there was a wide variation within the liberal group's responses. More importantly, Thomas administered only ten of the original twenty-three I-E items and failed to report the criteria for his selections. This makes the comparison of his results to that of other investigators difficult, and points out one of the prevalent problems in I-E research.

In still other work, Silvern and Nakamura (1971) found significant sex differences in college males and females. In males, externality was positively correlated with social-political activity, particularly protest activity, and left-wing views. In females, I-E scores were not related to either views or action. Finally, two studies done by MacDonald should be considered. MacDonald (1971) administered the Rotter Scale to 178 (105 male and 73 female) undergraduate students. Factor analysis of the data indicated that the scale had one general factor that accounted for much of the variance (15%) and a second factor which
accounted for 5% of the variance. In addition, MacDonald (1972) found a low but significant relationship between internal scores and a belief in the Protestant Ethic.

To summarize, then, a simple prediction that individuals who score low (internals) will always be more action-oriented than individuals who score high (externals) does not appear to hold. Furthermore, there is evidence which suggests that the I-E Scale is not unidimensional, but rather more meaningfully defined as multidimensional. Since relatively few clear indications of the nature of these factors can be found, with the possible exception of Crandall, et. al. (1965) and Mirels (1970), the present research has been directed towards a factor analysis of Rotter's I-E Scale, along with the investigation of age-period differences previously described.

The Purpose of the Present Research

This study will address itself to four major questions. First, is level of perception of locus of control of reinforcements a continuously decreasing function of age, older individuals simply being more internal on this dimension than younger ones? Second, what sex differences, if any, exist in this dimension across the life span from adolescence to age 70 years? Third, will a factor analysis of responses to Rotter's I-E measure, made by a large number of subjects from 15-70 years of age, support it as a unidimensional scale? Fourth, will the findings of this study be
explainable in terms of age of subjects or in terms of membership in a particular generational cohort?

Statement of Hypotheses

The following are the specific hypotheses of the present study:

1. Subjects in age periods 15-19, 25-29, 40-44, and 50-54 will have significantly higher scores on Rotter's I-E measure, respectively, than will subjects in those five-year periods immediately following each of them. Furthermore, males will have significantly higher (more external) I-E scores than females at each of these four age periods.

2. A factor analysis of responses to Rotter's I-E Scale of a sample of 15-70 year olds will support a multi-dimensional interpretation of the scale.
CHAPTER II
PROCEDURES

Description of the Population

One of the more important criticisms of I-E research has been that the vast majority of studies have drawn samples from a limited population: i.e. college students. With this in mind, the present research was designed to enlarge the range of subjects, extending the population in both directions, bearing in mind the necessity of using the same measure with all subjects. Subjects in this study ranged from 15 years to 70 years of age.

Since MacDonald (1972 a, 1972 b) has shown that I-E is not related to volunteer behavior, the present study employed volunteers as subjects. Subjects were solicited from two junior high schools, two senior high school, one university, and from the civilian staff of a United States Air Force Base in a large American midwestern city. 1200 test packets were distributed and 83% (996) were returned. Of the 83%, only 89% (767) were suitable for use in the study. Research evidence has suggested various age periods and the present sample was reduced to the groups most closely parallelling those cited in the literature. (1) 15-19, (2) 25-29, (3) 40-44, (4) 50-54 (Havighurst, 1952, 1953, 1956; Horrocks & Mussman, 1970, 1973; Pressey and Kuhlen, 1958; Schaie, 1958, 1959). For a comprehensive review, see Horrocks & Mussman, 1970. Groups were added
between each of these for comparison and the final sample consisted of 10 age groups: (1) 15-19, (2) 20-24, (3) 25-29, (4) 30-34, (5) 35-39, (6) 40-44, (7) 45-49, (8) 50-54, (9) 55-59 and (10) 60-70.

**Description of Test Battery**

All subjects were administered Rotter's I-E Scale and the Horrocks and Mussman attitude questionnaire. Rotter's I-E consists of 29 forced choice items, six of which are nonscored fillers. Work reported in Rotter's monograph (1966), as well as that carried out since, indicates adequate internal consistency for the Scale. Similarly, split half and test-retest reliability reported from a variety of studies are consistently adequate (Phares, 1973). The Scale's correlation with various measures of intelligence is generally low and non-significant (Joe, 1971). The effects of social desirability have usually been reported as minimal or as a negative correlation (Cone, 1971; McDonald, 1970; and Lefcourt, 1971). Adequate construct validity has also been reported in the reviews of the literature cited earlier. A copy of the Scale is provided in Appendix A.

The form of Horrocks and Mussman's attitude questionnaire is that of the semantic differential developed by Osgood et al. (1957). This method is widely known and will not be discussed at length here. It should suffice to say that
a subject demonstrates his reaction to a concept by marking a space showing that he feels extremely, quite, or slightly favorable (or unfavorable) towards the object listed or may indicate neutrality by marking the middle position. Group differences in attitude intensity on a semantic differential scale suggest motivational disequilibrium (Horrocks & Mussman, 1970). A copy of the questionnaire is provided in Appendix B.

**Testing Procedures**

Subjects for the school age portion of the sample were obtained in the following manner. A school principal was contacted and he, in turn, referred the matter to the research and evaluation section of the local school board. Upon approval by the board, a school was specified as the test school. Following this, letters (See Appendix C) were sent home via the students, explaining the project and asking permission for the students to participate. A permission slip was provided at the bottom of the announcement letter. Parents were asked to sign the slip and return it to school the following day. If they requested additional information before granting permission, they were encouraged to call the experimenter for a more detailed description of the project.

The tests were marked with a subject number and were placed in a folder identically marked. Upon arrival at
the testing site, the folders were distributed along with a number two pencil. During the first 5-10 minutes, time was taken to reassure the examinees that the tests they were about to take were not intelligence tests, but were for research purposes only and their performance would in no way affect their grade in school. Five minutes were allowed for filling in the information sheet (See Appendix D) and then the subjects were asked to read the instructions for each of the questionnaires, to answer all of the questions as honestly as possible, and then to return the questionnaires to their folder upon completion. All folders were collected when the last subject was finished.

The college age sample was males and females enrolled in an introductory psychology course. Since no prior selection methods were used in assigning these students to sections of the course, it was assumed that a fairly heterogeneous group existed for the variables under consideration. Whole class sections were used and, in order to maintain the motivational level of the subjects, extra credit points were given for participation. Furthermore, Ss were allowed to take their folders home with them and to return them the following class period so as not to interfere with their course work. Their folders were the same as those for the junior and senior high subjects, with the exception that all of the verbal instructions were
repeated in written form and placed in the folders.

For the remaining adult population, contact was made with the personnel office of the air base and the university and a list of possible participants was obtained. The civilian employees at the air base were given folders in their offices and asked to return them via base mail to a central location where they were then collected. Similarly, the staff at the university was given folders and asked to return them via campus mail to the Department of Psychology where they were placed in a special box prior to collection.

It was decided before the start of testing that if any irregularity was noted by the data collection team, the subject(s) would be dropped. Subjects were to be dropped for any of the following reasons:

1. missing data
2. refusal to follow directions or to comply with directions and taking the tests with no apparent attempt to answer correctly
3. for the group testing, any observed instances of copying
4. failure to sign the permission slip

Procedures for Analysis of the Data

After the data were collected, all folders and files were checked to determine that the correct subject code number had been placed on each test form. The tests were sorted, and the release forms with the names were removed. The returned folders were scored in a manner recommended by Rotter (I-E) and Osgood et. al. (attitude
questionnaire). For the I-E scale all responses that represented the externality were assigned a value of one and those representing internality were assigned a value of 0. Thus the higher the score the more external the perceived locus of control.

For the attitude questionnaires, the positions on the scale were numbered from 1 to 7, with the most favorable position assigned the score of 1 and the most unfavorable position, the 7 score. An item score of 2, therefore, represents a very favorable attitude towards the object listed, while a score of 5 stands for a slightly unfavorable feeling toward the aspect of life in question. A 4 score suggests conflict or indecision with respect to the concept.

According to Oswood et al., attitude intensity of a group of respondents can be represented by the mean of the item scores. Thus, when an age group mean intensity score of 2.5 is compared with an age group mean of 1.5, the inference may be tentatively drawn that the second group has a more intensely favorable attitude toward the concept(s) listed in the questionnaire.

Raw scores for all subjects were recorded on a separate coding sheet in preparation for IBM key punching. After the data were key punched, means and standard deviations were computed for each variable (male-female, total, and
by age group).

The possibility of sex differences was evaluated by means of the sign test for the different groups. The data were submitted to an analysis of variance, and a check made to determine whether the variations in age group means were significant using the Duncan Multiple Range Test. Finally, a factor analysis (BMD03M) was carried out to test the hypothesis that I-E is multidimensional as opposed to unidimensional. Analysis for the partial replication followed Horrocks and Mussman, with the addition of an analysis of variance.

It will be remembered that this comparison of the present study with that of Horrocks and Mussman was done to check for a cohort effect. Graphic comparison and a correlational analysis were used to assess the influence of age versus cohort.
CHAPTER III

RESULTS

I-E Data Analysis By Groups

Following the data collection, summary statistics were compiled for all age groups represented in the study plus the total sample. These are shown in Table 1. The table has the mean scores for each group plus the standard deviations and the standard errors. A graph was drawn in order to illustrate the presence of developmental trends, Figure 1. The results of the analysis of variance for the sample are presented in the Figure to indicate those groups that were significantly different from those immediately following. The third group represents the only exception. While, it was not significantly different from the group immediately following, it was significantly different from the second group (35-39).

It was hypothesized in this study that there are several periods in human development during which individuals are likely to have significantly higher (more external) I-E scores than at other times. While four such periods were hypothesized, the data substantiated only two: (1) 15-19 and (2) 50-54. The 25-29 age period, while not significantly different from the period immediately following (30-34) was significantly different from the second such age group (35-39). The fourth predicted period (40-44), while not significantly different from the 45-49 age group, was significantly different from the age group (35-39) immediately preceding it.
Table 1
Summary Statistics for I-E By Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Count</th>
<th>Mean</th>
<th>SD</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>106</td>
<td>11.72</td>
<td>4.25</td>
<td>.413</td>
</tr>
<tr>
<td>20-24</td>
<td>113</td>
<td>10.13</td>
<td>4.19</td>
<td>.396</td>
</tr>
<tr>
<td>25-29</td>
<td>111</td>
<td>10.00</td>
<td>4.43</td>
<td>.420</td>
</tr>
<tr>
<td>30-34</td>
<td>97</td>
<td>9.02</td>
<td>3.75</td>
<td>.375</td>
</tr>
<tr>
<td>40-44</td>
<td>66</td>
<td>9.88</td>
<td>4.89</td>
<td>.602</td>
</tr>
<tr>
<td>45-49</td>
<td>51</td>
<td>9.25</td>
<td>4.17</td>
<td>.573</td>
</tr>
<tr>
<td>50-54</td>
<td>55</td>
<td>10.55</td>
<td>5.14</td>
<td>.694</td>
</tr>
<tr>
<td>55-59</td>
<td>51</td>
<td>9.12</td>
<td>4.10</td>
<td>.580</td>
</tr>
<tr>
<td>60+</td>
<td>46</td>
<td>9.56</td>
<td>3.81</td>
<td>.580</td>
</tr>
<tr>
<td>Total</td>
<td>767</td>
<td>10.60</td>
<td>4.49</td>
<td>.162</td>
</tr>
</tbody>
</table>

* indicates significant (.05) differences between the two age groups, using Duncan's Multiple Range Test.
* indicates significant difference between the marked age group and the age group immediately following.
Furthermore, it should be noted that this group (35-39) was the most internal group of the entire sample.

Significant differences were found between the sexes; however, the findings failed to support the hypothesis that male's scores would be more external than those of females. This hypothesis was based, in part, on the findings of Crandall, et. al. (1965), discussed earlier, which indicated a trend for males to be more external due to the pressure for achievement and independence. Furthermore, a large body of evidence is present in the literature that suggests that males are subjected to such societal pressure. More will be said concerning this finding in the Discussion Section following this chapter.

Sex difference data are reported in Figure 2. Briefly, there were three age ranges, 20-24, 30-34, and 60-70, for which significant (.01) differences were found. In all three groupings the females were substantially more external than the males. While other differences were found, none of them reached the magnitude of these three periods. For the most part, it can be seen, that females were more external than males throughout life, as defined by the present 10 age groups. During adolescence and the late 30's they were equal to their male counterparts. Also, during age periods 40-44 and 50-54 females are roughly comparable to males in their perceived locus of control.
**FIGURE 2**
DEVELOPMENTAL TRENDS FOR MALE AND FEMALE SAMPLE ON I-E

* indicates significant difference between male and female sample at that age period.
AMOUNT OF TOTAL VARIANCE ACCOUNTED FOR BY THE PRESENT STUDY'S FACTORS AND THAT BY MIRELS' STUDY

<table>
<thead>
<tr>
<th>Total Sample</th>
<th>Male Sample</th>
<th>Female Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>F I</td>
<td>F II</td>
<td></td>
</tr>
<tr>
<td>10.4%</td>
<td>14.5%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Male Sample</th>
<th>Female Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.4%</td>
<td>14.8%</td>
</tr>
<tr>
<td>14.8%</td>
<td>10.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Sample</th>
<th>Male Sample</th>
<th>Female Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>F I</td>
<td>F II</td>
<td>F I</td>
</tr>
<tr>
<td>?</td>
<td>?</td>
<td>10.9%</td>
</tr>
<tr>
<td>10.9%</td>
<td>8.6%</td>
<td>12.1%</td>
</tr>
</tbody>
</table>

Note—Factor I was the first factor varimax rotated factor. Factor II was the second factor varimax rotated out by the factor analysis.
2. People's misfortunes result from the mistakes they make.
3. One of the major reasons why we have wars is because people don't take enough interest in politics.
4. In the long run people get the respect they deserve in this world.
5. The idea that teachers are unfair to students is nonsense.
6. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. People who can't get others to like them don't understand how to get along with others.
8. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
9. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
10. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
11. The average citizen can have an influence in government decisions.
12. When I make plans, I am almost certain that I can make them work.
13. In my case getting what I want has little or nothing to do with luck.
14. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
15. By taking an active part in political and social affairs the people can control world events.
16. There really is no such thing as "luck."
17. How many friends you have depends upon how nice a person you are.
18. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
19. With enough effort we can wipe out political corruption.
20. There is a direct connection between how hard I study and the grades I get.
21. It is impossible for me to believe that chance or luck plays an important role in my life.
22. People are lonely because they don't try to be friendly.
23. What happens to me is my own doing.
24. In the long run the people are responsible for bad government on a national as well as on a local level.

Note.—Each item is represented by the alternative scored for internal control. Omitted items 1, 8, 14, 19, 24, and 27 are fillers.
Table 2

ROTATED FACTOR MATRIX FOR TOTAL
SUBJECT POOL ON TWENTY-THREE ITEMS
WITH A TWO FACTOR SOLUTION
(N=767)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>F I</th>
<th>F II</th>
<th>ITEM</th>
<th>F I</th>
<th>F II</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.05</td>
<td>0.40</td>
<td>16</td>
<td>0.17</td>
<td>0.48</td>
</tr>
<tr>
<td>3</td>
<td>0.32</td>
<td>0.23</td>
<td>17</td>
<td>0.46</td>
<td>0.06</td>
</tr>
<tr>
<td>4</td>
<td>-0.29</td>
<td>-0.05</td>
<td>18</td>
<td>0.19</td>
<td>0.36</td>
</tr>
<tr>
<td>5</td>
<td>-0.18</td>
<td>-0.10</td>
<td>20</td>
<td>0.19</td>
<td>0.28</td>
</tr>
<tr>
<td>6</td>
<td>0.18</td>
<td>0.36</td>
<td>21</td>
<td>0.02</td>
<td>0.33</td>
</tr>
<tr>
<td>7</td>
<td>0.12</td>
<td>0.27</td>
<td>22</td>
<td>-0.57</td>
<td>0.11</td>
</tr>
<tr>
<td>9</td>
<td>0.28</td>
<td>0.31</td>
<td>23</td>
<td>0.13</td>
<td>0.44</td>
</tr>
<tr>
<td>10</td>
<td>-0.27</td>
<td>-0.18</td>
<td>25</td>
<td>0.27</td>
<td>0.43</td>
</tr>
<tr>
<td>11</td>
<td>-0.37</td>
<td>-0.19</td>
<td>26</td>
<td>-0.29</td>
<td>-0.14</td>
</tr>
<tr>
<td>12</td>
<td>-0.56</td>
<td>0.04</td>
<td>28</td>
<td>-0.29</td>
<td>-0.24</td>
</tr>
<tr>
<td>13</td>
<td>-0.33</td>
<td>-0.14</td>
<td>29</td>
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</tr>
<tr>
<td>15</td>
<td>-0.28</td>
<td>-0.30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.—The percent of total variance accounted for by
Factor I = 10.4% and for Factor II = 14.5%.
Table 3

ROTATED FACTOR MATRIX FOR MALE POPULATION ON TWENTY-THREE ITEMS WITH A TWO FACTOR SOLUTION (N=344)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>F I</th>
<th>F II</th>
<th>ITEM</th>
<th>F I</th>
<th>F II</th>
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<tbody>
<tr>
<td>2</td>
<td>.02</td>
<td>.38</td>
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<td>-.16</td>
<td>.42</td>
</tr>
<tr>
<td>3</td>
<td>.45</td>
<td>.19</td>
<td>17</td>
<td>-.57</td>
<td>.01</td>
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</tr>
<tr>
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<td>-.22</td>
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<tr>
<td>11</td>
<td>.43</td>
<td>-.27</td>
<td>26</td>
<td>.28</td>
<td>-.25</td>
</tr>
<tr>
<td>12</td>
<td>.58</td>
<td>-.01</td>
<td>28</td>
<td>.19</td>
<td>-.25</td>
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<tr>
<td>15</td>
<td>.31</td>
<td>-.31</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.—The percent of total variance accounted for by Factor I = 10.4% and for Factor II = 14.8%
Table 4

ROTATED FACTOR MATRIX FOR FEMALES
POPULATION ON TWENTY-THREE ITEMS
WITH A TWO FACTOR SOLUTION
(N = 423)

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Note.--The percent of total variance accounted for by
Factor I = 14.8% and for Factor II = 10.9%
Factor Analysis of I-E

Responses to the 23 scored items of Rotter's scale (See Appendix A) were intercorrelated and the resulting matrix factored by the principle components method via the BMD03M program (1967). Squared multiple correlations were entered in the main diagonal and the components rotated to orthogonal simple structure by means of the varimax method. The minimum eigenvalue for factor rotation was 1.0 and loadings of ±.30 were utilized as cutoffs for naming each factor. Three separate analyses were performed: (1) total sample, (2) male sample, and (3) female sample.

The procedure outlined above yielded a two factor solution in all three analyses. For the total sample (N=767) the combined total variance accounted for was 25%. Factor I accounted for 10.4% and Factor II 14.5% (Tables 2, 3, & 4). The respective variances for the male and female samples were 10.4% and 14.8% (males, N=344) and 14.8% and 10.9% (females, N=423). The names Factor I and Factor II reflect the amount of total variance accounted for by the two item clusters and the varimax-rotated factors. One difference noted was that for the females the total variance accounted for by the first factor was higher than that of either the males or the total sample. More will be said concerning this in the next chapter.
The items that loaded high on Factor I were concerned with the respondent's inclination to assign greater or lesser importance to his or her own ability or hard work than to luck as a determiner of personally relevant outcomes.

The items loading high on Factor II focus on the individual's acceptance or rejection of the idea that an individual can exert some control over political as well as world affairs. Furthermore, the items do not suggest that luck plays a role here and this fact adds to the distinction of those items loading on this Factor as compared to the other (See Mirels, 1970).

Comparison of the Present Analysis With That of Mirels (1970): Table 5 presents a comparison of the item content of the present factor analysis with that of Mirels (1970). The interpretation of the results of the factor analysis confirms the existence of two separate dimensions for I-E. These dimensions are basically the same for both studies. One difference in the two sets of results is that for the present study Factor I was rotated out as a political or "system control" dimension, whereas, in the Mirel's study Factor I concerned "personal control;" The same difference in rotation was true of Factor II. This may indicate the current concern with the political environment in today's society. A further difference observed was that for
TABLE 5
A COMPARISON OF THE PRESENT STUDY'S FACTOR ANALYSIS WITH THAT OF MIRELS'

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Note.—Numbers represent specific items on Rotter's I-E Scale.
the Mirel's study items concerning "school-related" content loaded on the "personal control" factor, while they failed to do so in the present study. The explanation for this is, no doubt, due to the population differences in the two studies. Mirels used an all college sample while the present investigator used a more varied sample including but not restricted to college students.

The Issue of Age Versus Cohort Effect

Information concerning the possibility of a cohort effect was obtained by correlational analysis. Two separate analyses were done. In the first analysis, a Pearson product moment correlation was computed for the total sample in the present study comparing the individual I-E scores with the individual life in general scores. The results yielded a correlation coefficient of .54, significant beyond the .001 level. In the second analysis the mean I-E score for each age group was correlated with the mean life in general score for each age group. This resulted in a correlation coefficient of .63, which is significant beyond the .05 level. These two analyses give us some confidence that the two instruments are measuring something in common.

If you examine Figure 3, you will see the relationship of the present research to that of Horrocks and Mussman in terms of respondents' attitudes toward "life in general."
FIGURE 3

COMPARISON OF THE PRESENT STUDY
WITH THAT OF HORROCKS AND MUSSMAN ON
ATTITUDES TOWARD "LIFE IN GENERAL"

YEARS

PRESENT STUDY

HORROCKS AND MUSSMAN

COHORT-TIME LAG-CHECK
Visual examination of this figure suggests the likelihood that differences are interpretable in terms of age rather than on the basis of membership in a particular generational cohort. The same general trend across ages is seen in both sets of data. One interesting point is the lessening of attitude intensity, (page 32) indicative of stress, across the ages in the present study as compared with that of Horrocks and Mussman.

The present data were collected exactly 5 years after the Horrocks and Mussman data. Since this was the case, a comparison of generations was possible. This was accomplished by matching the Horrocks and Mussman groups with the groups from the present study that had the next highest age range. For example, a group that was 25-29 during the time of the Horrocks and Mussman study would now be 30-34, therefore, a "time lag" design allowed a check for the cohort effect. This design matches age groups by generational cohort rather than chronological age. The comparison of the time lag match with that of the straight age group match suggests some support for accepting age as opposed to cohort as the variable influencing attitude toward life in general. The dotted line in Figure 3 represents a graphic check for cohort.

A three-part correlational analysis of the data was done in an effort to test this observation statistically.
First, the mean attitude intensity scores from both the present study and the Horrocks and Mussman study were paired by exact age groupings (e.g. 20-24 with 20-24 and 25-29 with 25-29) and correlated. The result was an \( r = .79 \) \( (p < .01) \). The second step correlated the mean attitude intensity scores for both studies by the time lag design (e.g. Horrocks and Mussman's 25-29 with the present study's 30-34). The result was an \( r = .41 \) (NS). In the third step, the significance of the difference between the two correlation coefficients was computed. The result of this computation yielded a \( z \) of .797 which is not significant.

In summary, these findings suggest the likelihood of an age related effect for "life in general." As reported earlier, a significant \( (p < .001) \) correlation was found for "life in general" and I-E (\( r = .54 \)) when the entire sample of 767 was used. Therefore, it is possible that a similar effect would exist for I-E. That is, changes in I-E scores might be expected to reflect age rather than generational effects.

The Issue of Stress Related Periods

The group bounded by the ages of 15-19 shows the most stress of any period. This, of course, is to be expected since most of the literature indicates the period of adolescence as one of high stress.

The seven major attitudes used in the Horrocks and Muss-
man study were also compared with the findings of the present study and graphic representations are in Figures 4 through 10. In addition, the data are presented in tabular form (Table 6). The present findings indicate a lessening of attitude intensity in all but three of the sixty-three comparisons. (Not showing this general trend were: (1) attitude toward "Children" in group 55-59, (2) attitude toward "Marriage" in group 60-70.) This might indicate a somewhat pervasive societal influence yielding increased stress during the five years since the collection of the Horrocks and Mussman data in all ages studied.

The results of an analysis of variance done comparing the eighteen groups from the present study and the Horrocks and Mussman study on all seven attitudes plus "life in general," support the contention of differences in attitude intensity across age groups. The summary statistics for the analysis are shown in Table 7. Table 8 lists the significant differences in the nine age categories. Six were significant at the .05 level. Of the remaining three (1) 40-44, (2) 55-59, and (3) 60-70, the 55-59 age group did reach significance at the .10 level, while the other two failed to reach significance.
FIGURE 4

COMPARISON OF THE PRESENT STUDY
WITH THAT OF HORROCKS AND MUSSMAN ON
ATTITUDES TOWARD "CHILDREN"

PRESENT STUDY  ---  HORROCKS AND MUSSMAN  ---
FIGURE 5

COMPARISON OF THE PRESENT STUDY
WITH THAT OF HORROCKS AND MUSSMAN ON
ATTITUDE TOWARD "MARRIAGE"
FIGURE 6

COMPARISON OF THE PRESENT STUDY
WITH THAT OF HORROCKS AND MUSSMAN ON
ATTITUDE TOWARD "MY FUTURE"

PRESENT STUDY ----------- HORROCKS AND MUSSMAN -- -- --
FIGURE 7

COMPARISON OF THE PRESENT STUDY WITH THAT OF HORROCKS AND MUSSMAN ON ATTITUDE TOWARDS "MY FRIENDS"

PRESENT STUDY ——— HORROCKS AND MUSSMAN ————
FIGURE 8

COMPARISON OF THE PRESENT STUDY
WITH THAT OF HORROCKS AND MUSSMAN ON
ATTITUDE TOWARD "MY PARENTS"

PRESENT STUDY     HORROCKS AND MUSSMAN
FIGURE 9

COMPARISON OF THE PRESENT STUDY
WITH THAT OF HORROCKS AND KUSSMAN ON
ATTITUDE TOWARD "MY DAILY TASKS"

PRESENT STUDY

HORROCKS AND KUSSMAN

YEARS

15-19
25-29
35-39
45-49
55-59

ATTITUDE INTENSITY
FIGURE 10

COMPARISON OF THE PRESENT STUDY WITH THAT OF HORROCKS AND MUSSMAN ON ATTITUDE TOWARDS "MYSELF"
## TABLE 6

**COMPARISON OF PRESENT STUDY WITH HORROCKS AND MUSSMAN ON ALL SEVEN ATTITUDES PLUS "LIFE IN GENERAL"**

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Note.—Each number indicates the mean attitude intensity score. The top number represents the findings of the Horrocks and Mussman data, the bottom number indicates the findings of the present study.
### TABLE 6

**COMPARISON OF PRESENT STUDY WITH HORROCKS AND MUSSMAN ON ALL SEVEN ATTITUDES PLUS "LIFE IN GENERAL"**

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* Each number indicates the mean attitude intensity score. The top number represents the findings of the Horrocks and Mussman data, the bottom number indicates the findings of the present study.

- = .10  
+ = .05  
* = .01
### TABLE 7

**SUMMARY STATISTICS FOR LIFE IN GENERAL**

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<td>25-29</td>
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<td>1.96</td>
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<td>.056</td>
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<td>2.05</td>
<td>.640</td>
<td>.064</td>
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<td>100</td>
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<td>.626</td>
<td>.063</td>
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<td>60-70</td>
<td>60</td>
<td>1.90</td>
<td>.572</td>
<td>.074</td>
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<td>1829</td>
<td>2.21</td>
<td>.833</td>
<td>.020</td>
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TABLE 8
SIGNIFICANCE TEST FOR LIFE IN GENERAL ON ALL EIGHTEEN GROUPS
(N = 1829)

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>SIGNIFICANCE</th>
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<tr>
<td>20-24</td>
<td>p &lt; (.05)</td>
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<tr>
<td>25-29</td>
<td>p &lt; (.05)</td>
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<td>p &lt; (.05)</td>
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<td>35-39</td>
<td>p &lt; (.05)</td>
</tr>
<tr>
<td>40-44</td>
<td>NS</td>
</tr>
<tr>
<td>45-49</td>
<td>p &lt; (.05)</td>
</tr>
<tr>
<td>50-54</td>
<td>p &lt; (.05)</td>
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<td>55-59</td>
<td>p &lt; (.05)</td>
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<td>60-70</td>
<td>NS</td>
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CHAPTER IV
SUMMARY AND DISCUSSION

Summary

The present study was concerned with several specific hypotheses:

1) that several periods exist in human development where individuals show significantly more external beliefs than at other periods.

2) that sex differences exist in I-E at these periods.

3) that I-E is multidimensional rather than unidimensional.

In addition to these specific hypotheses, this study examined the possibility that a cohort effect rather than age influence might account for differences observed. It was found that periods, as hypothesized, exist where individuals have significantly more external (higher) scores. The data were not supportive of all the hypothesized differences (e.g. 15-19, 25-29, 40-44, 50-54). Only two of these periods were found to be significantly different from the period immediately following. The two periods supported were 15-19 and 50-54. It was also found that the age group 40-44, while not significantly different from the period immediately following, was significantly different from the age period immediately preceding it (at the .05 level of significance).

Numerous sex differences were observed. While it had
been hypothesized that male scores would be significantly more external than those of females, it was found that females were significantly more external in almost all age periods.

The third point of inquiry concerned the factorial composition of the I-E Scale. The results supported a definite multidimensionality as opposed to a single unidimensional character for Rotter's Scale. Two factors were found in each of three separate factor analyses (male, female, and total samples). In addition, several sex differences were found on item loadings when the separate male and female factor analyses were compared.

The final point of investigation concerned a check for age as opposed to generational influences on I-E. The data suggest the acceptance of an age related effect.

Discussion

In the Introduction it was noted that the I-E Scale has shown adequate reliability over time as reported in Rotter's monograph, by Phares (1973), and others. From this, many researchers have assumed that I-E scores are relatively stable, at least enough to make measurement feasible. It was assumed by the present investigator that any relatively stable personality characteristic may be expected to change over time (developmentally) under certain circumstances. Furthermore, since personality var-
iables such as I-E are often regarded as influencing a wide range of behaviors, it was decided to attempt an investigation in order to better understand the conditions that may relate to changes in I-E beliefs. Specifically, this study dealt with changes in the strength of I-E beliefs themselves.

Changes in I-E Beliefs: Age is perhaps the simplest basis for changes in the strength of I-E beliefs. Most recent evidence suggests that young children are more external than older children. The fact that young children are so little in control of their own lives and so much under the domination of adults would seem to suggest an accurate perception on the part of such children. As children become older they are more and more able to influence the course of their own lives and thus most researchers have suggested a steady increase in internality with the advance of age.

As noted earlier, the present researcher questioned this simple increasing function. Research was cited which indicated that I-E beliefs could be situationally influenced and it was hypothesized that if a modified life span study were to be undertaken, evidence would be found to support a discontinuous pattern in I-E beliefs as opposed to the more commonly held continuous one. It is clear from the findings of the present study, that age differences do ex-
1st, as measured by the study's criteria. Various researchers have discussed similar possibilities but not to the extent of the present study. Crandall, Katkousky and Crandall (1965) found a trend for increasing internality which peaked at about 13-15 and a change to a more external level through 17 years of age. No other studies, to this investigator's knowledge, have dealt directly with chronological age influences in I-E. However, researchers such as Kuhlack (1967), Gorman (1968), MacArthur (1970), and Eisenman (1972) have reported changes observed over periods ranging from a few weeks to several years. The importance is that with the present findings, we now have evidence which suggests a change in Rotter's construct as well as additional research on those factors which cause such discontinuities. It seems apparent that what is needed is research with populations that are not school-age based. Granted, the collections of data from "non-captive" pools is more difficult but it seems that this is the only way of deciding the existence of age-related periods in I-E belief.

Age Trends in I-E Beliefs: If we examine the age trends in the present study, several points may be emphasized. First, I-E beliefs may be considered to be influenced by situational determinants, such as age-related stress. Examination of the data points (Figure 1, pg. 35) clearly dispells the notion that I-E beliefs merely progress from
external to internal as one gets older. While it is true that ones beliefs do become more internal with age, it is by no means a steady, gradual increase as has been suggested by the literature. Even if no significant differences had been found it would have been difficult to overlook the age trend fluctuations. This, of course, was not the case in the present study. Three significant changes were found, among the many discontinuities over the tested age range. It should be mentioned that the present investigator collected data from subjects covering a much larger age range than any study thus far reported in the literature. Furthermore, the present investigator suggests that there is a need for similar investigations in order to clarify the point under discussion.

The 15-19 year old group (the most external) may reflect findings of many investigators relative to the high-stress conditions often faced in adolescence (Horrocks and Mussman, 1973). A few studies are found in the I-E literature which relate to this point. Beebe (1971) reported that there was an apparent "leveling off" of the expected increase in internality during the adolescent years for both sexes. Brannigan and Talor (1971) confirmed their hypothesis that close self-parental distance was significantly related to internal expectancy, and suggested that this may help account for some investigators reporting a
"leveling off" of the expected increase in internality during adolescence.

There is strong pressure from three highly influential sources for the adolescent—pressure from parents, peers, and school adults (Newman and Newman, 1975), which could lead to a more external belief system, as seen in this study. Theories of adolescence suggest that the increased awareness of one's self in a variety of roles with a wide range of reality expectations leads to confusion, stress (anxiety) and low self-esteem in adolescence. This is followed by increased self-differentiation and finally by a new integrated sense of identity that adds focus to the young adult's stance toward his environment. If this is viewed in terms of the present study's findings, one may assume that the I-E data do indeed parallel this theoretical point. There is a definite lessening of externality during the first five periods studied. In fact, the fifth period (35-39) is the most internal one. Therefore, individuals may tend to build self-concept and gain in internal belief to a high point in the late 30's (Beebe 1971). From this point on, considerable cyclic activity takes place, with the age groups fluctuating within the I-E continuum. The finding is in line with the prediction of Kuhlen (1959) and Kutner (1962) who both indicate the possibility of such cyclic activity whenever stress is operative. It
should be remembered that the present study utilized the work of Horrocks and Mussman on age related stress periods while building the theoretical model for this research. The assumption is not being made that an individual's self-concept follows a like pattern. It seems quite logical to expect an individual to have a high self-concept and be either externally or internally oriented. Only further research can answer the question of any relationship between I-E and self-concept.

The 50-54 age group like the 15-19 age group was found to be significantly (.05) different from the group immediately following. For this group, one might suppose that the prospect of retirement and disengagement causes an increase in conflict and/or stress which yields the high feelings of externality. This group reports the second highest externality score for the present sample.

The age group 25-29 was predicted to be significantly more external than the 30-34 age group. This was not born out by the data, but this group (25-29) was significantly (.05) more external than the 35-39 age group. There was a general tendency for individuals to increase their internality up to 35-39, as mentioned earlier. At this point, there was a return to a more external belief as predicted. However, the 40-44 age group was not significantly different from the 45-49 age group. Since the 40-44 age group
was significantly (.05) different from the 35-39 age group, it might be suggested that this point in life is more stressful and begins the aforementioned cyclic fluctuations. The size of the sample populations here was smaller than that of the first five and this may explain these particular findings.

In summary, the second point to be extracted from the results is that several age-related periods seem to exist and a probable stress related belief in loss of perceived control is predominant.

**Sex Differences in I-E Beliefs:** Upon examination of the graphic representation of the sex differences found in the present study, it may be seen that the original hypothesis which suggested that males would score significantly higher (more external) than females was not supported. Several reasons present themselves at this time. First, the hypothesis may have been based on a too small body of research findings. Second, the present study may have an atypical female/male sample. Lastly, times and societal pressure may have changed, at least, as perceived by females. The present author prefers to accept this last explanation until such time as future research discounts it. Three of the ten comparisons were significant at the .01 level, with females being more external. The first two of these age periods, 20-24 and 30-34 fit this model quite well.
It is during the early twenties that women attend college, anticipate marriage and families, and/or consider life independent from parents. With today's emphasis on "liberation" it may be that females experience role conflict and "psychic" stress leading to increased externality. For the second age range (30-34), it is assumed that once the first "stress point" (20-24) has been resolved and internality begins to increase, a second stress point occurs. Since the vast majority of respondents in this study were employed, it might be assumed that a role conflict via a career decision may have caused the increased stress and thus the increased belief in external locus of control. This is clearly speculative and once again affirms that only further research can realistically uncover whether sex differences actually exist and also the antecedent of such differences.

Since so little has been reported about sex differences in the I-E literature, and what has been reported tends to be contradictory, it is suggested that extensive research be considered which will take into account such factors as achievement, social pressures, self-concept, and self-esteem and their relationship to locus of control.

Some comment should be made concerning the third age period in which significant sex differences were found, 60-70. This age group does not fit the model discussed
above, but some clarification may be offered by the fact that when the data were rechecked it was found that a high number of widowed females were included in this group. From this, it may be said that the loss of a spouse tends to cause a period of external belief due to the stress involved. There was no way of checking for the length of time each had been widowed to see the relationship. This leaves yet another possible research topic to be explored.

**Factor Analysis of I-E**

The second phase of the present research involved an investigation into the factorial composition of the I-E Scale.

From the conception of the I-E Scale, it has been recognized that I-E beliefs were not totally general but apply somewhat specifically to various life areas. Initial attempts to develop subscales were not, however, successful. Indeed, factor and item analyses reported by Rotter (1966) failed to support any useful subscales. Currently, evidence is emerging that the I-E Scale does measure different levels of I-E. The exact nature of these differing levels is in no way clear because the results of recent studies are very often inconsistent and not completely coherent (Lefcourt, 1971). This is usually due to either the use of different populations and/or the use of scales differing in some respect from Rotter's. The present study has
attempted to override these difficulties by using Rotter's I-E Scale and a rather extensive sample population. Admittedly, the interpretation of any rotated factor matrix is quite subjective. Cutoffs are arbitrarily assigned by the investigator, usually anything in excess of ±.30 may be assumed important in naming a factor. Negative loadings and a failure to attain simple structure in all variables add to the ambiguity of interpreted factor loadings and subsequent factor naming. In addition, sex differences may influence the outcome. With these points in mind, the following description of the rotated factor matrix using the total sample is presented. This will be followed by a discussion of the rotated male and female factor matrices.

Factor I accounted for 10.4% of the variance with the present sample. Most of the items loading high on this factor are concerned with an individual's acceptance or rejection of the philosophy that a citizen can have a certain amount of control over political and world affairs. In contrast to the items on Factor II, both externally oriented statements and internally oriented ones use the social system as the agent of control rather than the individual. Basically, the internal items portray the individual as capable of exerting a political or world influence and the external items suggest that such action is out of
the sphere of control of individual citizens.

For example:

1. a. The average citizen can have an influence in government decisions.
   b. This world is run by the few people in power, and there is not much the little guy can do about it.

2. a. With enough effort, we can wipe out political corruption.
   b. It is difficult for people to have much control over the things politicians do in office.

None of the items loading on this factor includes any reference to luck, and interestingly enough all items here avoid first person statements. This factor is best identified as a "system control" factor.

Factor II is quite easily identified as a "personal control" factor. Those items loading heavily on this factor are concerned primarily with an individual's decision to place a high or low value on the importance of ability and/or fate as influences determining personally relevant outcomes. Each of the items loading on this factor compares a statement of individual control with one which assigns this control to outside or external forces. Two examples of these items follows:

1. a. Without the right breaks, one can not be an effective leader.
b. Capable people who fail to become leaders have not taken advantage of their opportunities.

2. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.

b. There really is no such thing as "luck."

In addition, both internal and external statements use the individual person as the agent of control. In the present study this factor accounts for 14.5% of the variance.

It should be noted that the overlap in loadings on these two factors is quite modest since none of the items load higher than ±.30 on both factors. Furthermore, the present findings are consistent with those reported recently by Guren et. al. (1969), Mirels (1970) and Lao (1970). The findings of the present study suggest the political factor is primary, while Mirels and others indicate that personal control was their first rotated factor. The relative amount of variance accounted for by each factor remained the same. This finding might be explained by merely considering the political climate of current times. Today many people are questioning the political system in light of recent happenings and this may account for the prominence of the "system control" factor. This suggestion seems acceptable when one considers the work of Gorman (1968), reported on earlier, showing changes in I-E in a group of
respondents following the 1968 Democratic National Convention when their candidate failed to receive the nomination.

Several differences were found in the response patterns of males and females. Three items (9, 11, and 13) loaded on Factor I (system control) for the male sample, and on Factor II (personal control) for the female. These items are represented below by the alternative scored for internal control.

(9) Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

(11) Becoming a success is a matter of hard work, luck has little or nothing to do with it.

(13) When I make plans, I am almost certain that I can make them work.

These items are a logical extension of the previous discussion of society's pressure on males for achievement and independence, and the resultant finding that females have a more external locus of control. The females in the present sample showed as much response to these items as the males, but the items loaded on their "personal control" factor. Thus, it may be said that females are now being effected by like pressures. These pressures may not be perceived as the same as those ideals obtained from par-
ental contact. Therefore, females may tend to feel that they have less personal control due to the perceived discrepancy in their assumed role and perceived role.

Apparently, sex differences exist in perceived, personal, and social control, what remains to be seen are the reasons for such differences. When the percent of variance accounted for is compared, both male and female sample show a total of 25% with the two factors.

The comparisons of the present study's factor analysis with that of Mirels' suggests several things. It should be remembered that the final factor loadings for the two factors of "personal control" and "system control" were chosen by using only those items which loaded ±.30 for both males and females.

The results of both studies suggest that I-E should be viewed as a multidimensional characteristic. This is consistent with a variety of other studies previously discussed. A recent investigation that involved a series of factor analytic studies with the I-E Scale has offered the suggestion that reliable subscales of the I-E measure have been isolated and should be used in making multiple regression predictions (Reid and Ware, 1971). It should become possible, according to these investigations, to make predictions of highly specific types of behavior as sub-areas of perceived control are identified, and the
reliability of the related subscales are increased through refinement of the assessment device. For instance, belief in personal control and low expectancy of social system control could prove to be decisive interactive predictors of the likelihood that a person will join militant movements, whereas each factor by itself might only allow for a small degree of prediction.

Furthermore, the present findings suggest, as does Mirels, that predictions involving the I-E Scale should consider not only the sources and agents of influence but also the content domain specified by the item statements. Obviously, research done using any given scale is limited by the item content of that scale. Many areas of life which might be appropriately assessed within the context of the I-E dimension as it was used in this study are not topped by the Rotter's I-E scale. It is quite notable that new scales should be developed which would include a broader range of items.

The Issue of Age Versus Cohort

The third phase in the present research attempted to answer the question of whether or not the observed differences or trends in I-E were due to age or cohort. According to Baltas (1968) the methodological considerations of the present research deal with that part of developmental psychology which is usually described as aging research.
Aging research consists of observing samples of different age levels in order to obtain age-functional relationships. In fact, aging research is often thought of as being synonymous with developmental psychology. Kessen (1960) says: "a characteristic is said to be developmental if it can be related to age in an orderly or lawful way." Campbell and Stanley (1963) and Baltes (1968) as well as Schaie (1959, 1965) have pointed out several methodological problems involved in longitudinal and cross-sectional research, namely (1) selective sampling, (2) selective survival, (3) selective drop out, (4) testing effects, and (5) generation (cohort) effects. The present discussion concerns itself with number 5.

The issue of generational effects as a source of error is felt to impair the internal validity of cross-sectional studies and the external validity of longitudinal designs. With respect to the cross-sectional method (employed in the present study) it has been argued (Birren, 1959; Damon, 1965; Jerome, 1954; Kuhlen, 1963; Rosler, 1966; Schaie, 1965; Welford, 1964) that age samples differ not only with regard to age but also simultaneously as to generations in the sense of cohorts. First formulated by Kuhlen (1940), this issue has been stated more precisely by Anastasi (1958, p. 220): "Differences between 20 and 40 year olds tested simultaneously (in 1940-1960) would
reflect age changes plus cultural differentials, especially differences in the conditions under which the two age groups were reared." The relationship between age and generation effects in the cross-sectional design can be seen in Figure 11.

FIGURE 11
A HYPOTHETICAL EXAMPLE FOR THE EFFECTS OF GENERATION DIFFERENCES ON THE RESULTS OF A CROSS-SECTIONAL STUDY

With this in mind, several statistical checks of the present data were made. As outlined in the Results Section two separate correlational analyses were performed. In the first analysis all 767 subject responses to the I-E scale were correlated with the "life in general" scale from the Horrocks and Mussman questionnaire. As indicated previously, this questionnaire had been established as indicating age-related periods. The result was a correl-
ation of $r = .63 \ (p \ .05)$. This evidence was accepted as indicative of an age related as opposed to cohort related effect.

The graphic representation in Figure 12 is presented as further support for the age related effect. The I-E and "life in general" scores have been plotted on the same scale dimensions. It seems likely that, for at least, this variable (I-E) the generational effects, posited by the aforementioned researchers, has little influence. Studies which directly concern themselves with this point are needed for further clarification.

Since the present study utilized the data collected by Horrocks and Mussman (1970) several brief comments as to comparative findings are in order. The present research is supportive of the hypothesis claiming the existence of one or more age related periods of increased psychological stress. Observation of the pattern of changes for all respondents in the present study did not lead to the suggestion that the early forties may be a period of generalized dissatisfaction with life-in-general as in the Horrocks and Mussman study. The present study showed adolescence to be the period of the most generalized dissatisfaction followed by the 45-49 and 50-54 age groups. Attitude intensity and level of psychic stress felt was seen to vary with age in both studies. Furthermore, in-
FIGURE 12
I-E WITH LIFE IN GENERAL ON THE SAME SCALE FOR THE TOTAL SAMPLE (N=767)

I-E SCORES

LIFE IN GENERAL SCORES

$\rho = 0.63$
$p < 0.001$
tensity was also seen to vary with the nature of the attitude object used.

Perhaps one of the most interesting results of the present study was the indication that for all of the possible 63 comparisons between the studies only 3 failed to show a lessening of attitude intensity between the groups represented in both studies. The assumed explanation for the lessening of intensity is felt to be reflected in increased societal pressure felt by all age groups. Any additional discussion of the results of these studies is left for a future article.

A note of caution should be mentioned. Throughout the text, it has been assumed that the present sample was roughly equivalent to that of Horrocks and Mussman. This may not be the case. However, the great amount of similarity between the two does seem to indicate equivalence and the present investigator has discussed issues as though the two samples are equivalent.

Further Research

While we know a great deal about the correlates of I-E beliefs, we do not fully understand how such beliefs interact with other variables. That is, we still need to know in detail how the relationship between I-E beliefs and various behaviors is affected or moderated by other factors. Also of crucial importance is understanding the detailed
origins of I-E beliefs. Through such knowledge we can better bring about changes in I-E beliefs—changes which can provide the individual with a better potential for attaining satisfaction from life and at the same time, enable him to contribute to society.

With this in mind, the following possibilities for future research and methodological considerations are being listed.

1. The use of "non-school" based populations.
2. The use of large age ranges.
3. The investigation of sex differences.
4. The use of differing types of sample populations to check more closely for situational determinants.
5. Further investigations of cohort vs. age effects.
6. Investigations into the role of societal pressures.

These are only a few of the possible sources for investigations. Continued efforts in this field of research is felt to be not only necessary, but also essential for a more complete understanding of man's behavior.


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Appendix A
This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

Your answers to the items on this inventory are to be recorded on a separate answer sheet which is loosely inserted in the booklet. Remove this answer sheet now. Print your name and any other information requested by the examiner on the answer sheet, then finish reading these directions. Do not open the booklet until you are told to do so.

Please answer these items carefully, but do not spend too much time on any one item. Be sure to find an answer for every choice. Find the number of the item on the answer sheet and black-in the space under the number 1 or 2 which you choose as the statement more true.

In some instances, you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also, try to respond to each item independently when making your choice; do not be influenced by your previous choices.
1. a. Children get into trouble because their parents punish them too much.
   b. The trouble with most children nowadays is that their parents are too easy with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.
    b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
    b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run, people get the respect they deserve in this world.
    b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. a. The idea that teachers are unfair to students is nonsense.
    b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. a. Without the right breaks, one cannot be an effective leader.
    b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. a. No matter how hard you try, some people just don't like you.
    b. People who can't get others to like them don't understand how to get along with others.

8. a. Heredity plays the major role in determining one's personality.
    b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.
    b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. a. In the case of the well prepared student there is rarely, if ever, such a thing as an unfair test.
    b. Many times exam question tend to be so unrelated to course work that studying is really useless.

11. a. Becoming a success is a matter of hard work; luck has little or nothing to do with it.
    b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.
   b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.
   b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14. a. There are certain people who are just no good.
   b. There is some good in everybody.

15. a. In my case, getting what I want has little or nothing to do with luck.
   b. Many times we might just as well decide what to do by flipping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
   b. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.

17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
   b. By taking an active part in political and social affairs, the people can control world events.

18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
   b. There really is no such thing as "luck."

19. a. One should always be willing to admit mistakes.
   b. It is usually best to cover up one's mistakes.

20. a. It is hard to know whether or not a person really likes you.
   b. How many friends you have depends upon how nice a person you are.

21. a. In the long run, the bad things that happen to us are balanced by the good ones.
   b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. a. With enough effort, we can wipe out political corruption.
   b. It is difficult for people to have much control over the things politicians do in office.

23. a. Sometimes I can't understand how teachers arrive at the grades they give.
   b. There is a direct connection between how hard I study and the grades I get.
24. a. A good leader expects people to decide for themselves what they should do.
   b. A good leader makes it clear to everybody what their jobs are.

25. a. Many times I feel that I have little influence over the things that happen to me.
   b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. a. People are lonely because they don't try to be friendly.
   b. There's not much use in trying too hard to please people, if they like you, they like you.

27. a. There is too much emphasis on athletics in high school.
   b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.
   b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.
   b. In the long run, the people are responsible for bad government on a national as well as on a local level.
DIRECTIONS: You are to indicate your attitude towards the item listed. In each case, look at the middle or neutral position first, then make your first feeling toward the item in terms of direction (either way (slightly, quite, very)). Mark each item.

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Dicate your attitude towards the item listed at the start of each line. First, place the middle or neutral position first, then make a mark (X) which represents the item in terms of direction (either way or neutral) and strength. Mark each item.

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May 6, 1974

Thank you for allowing your child to participate.

I would like to briefly explain the purpose of this research. I am interested in studying attitude changes in children, adolescents, and adults. Your child’s participation as a subject will enable me to make these comparisons.

I want to further assure you that these results will remain confidential. Only a number identification will be attached to your child’s folder. This procedure is in keeping with the American Psychological Association and Wright State University Human Subjects Committee requirements for confidentiality.

If you should want further information concerning the project before giving your permission please feel free to contact me at Wright State University. Furthermore, if you should want information concerning the findings of the completed project check the space provided. The information I will have available will pertain to groups only, not to individual performance.

Again, thanking you for allowing your child to participate

Sincerely yours,

W. F. Browne
Visiting Assistant Professor

Please return permission slip tomorrow.

Yes, I will allow my child to participate.

No, I would prefer that my child did not participate.

I would like the description of the findings of your project.
May 6, 1974

Thank you for participating.

I would like to briefly explain the purpose of this research. I am interested in studying attitude changes in children, adolescents, and adults. Your participation as a subject will enable me to make these comparisons. I would appreciate your answering all of the questions as honestly as possible. You will notice that some items on the General Information Sheet do not apply to you. Please leave these items blank.

I want to further assure you that these results will remain confidential. After receiving your folder we will remove the permission sheet so that only a number identification will be attached to your folder. You will notice that a number has already been assigned for you and is entered on the General Information Sheet in lieu of your name. This number also identifies the entire folder. This procedure is in keeping with the American Psychological Association and Wright State University Human Subjects Committee's requirements for confidentiality.

If you should want further information concerning the findings please feel free to contact me at Wright State University, after June 1st. The information I will have available will pertain to groups only, not to individual performances.

Again, thanking you for your participation, I am

Sincerely yours,

W. F. Browne
Visiting Assistant Professor
RESEARCH INVOLVING HUMAN SUBJECTS

CONSENT TO PARTICIPATE AS A SUBJECT IN RESEARCH

(SHORT FORM)

Project Title: Developmental Study of Attitude Change

Principal Investigator: W. F. Browne

Department: Psychology

I consent to participate as a subject in this research investigation.

The nature and general purpose of the experimental procedure have been explained to me by ________________.

I understand my identity will not be revealed in any publication or document resulting from this research.

This authorization is given with the understanding that I may terminate my service as a subject at any time.

Signed (subject)

Date ________________________
Wright State University  
Department of Psychology  

July 8, 1974  

Dear Participant:  

I would like to briefly explain the purpose of this envelope. We are in the process of doing a rather large study and I would like to ask for your help.  

I am interested in studying attitude change in children, adolescents, and adults. Your participation as a subject will enable me to complete my project this summer and to make the necessary comparisons between children's and adults' attitudes.  

I want to further assure you that these results will remain confidential. After receiving your envelope we will remove the permission sheet so that only a number identification will be attached to the information. You will notice that a number has been already assigned to you is entered in lieu of your name on the General Information Sheet. This procedure is in keeping with the American Psychological Association and Wright State University Human Subjects Committees' requirements for confidentiality.  

I would appreciate your answering all of the questions as honestly as possible. You will notice that on the General Information Sheet there is a space for Grade Point Average (GPA) however, unless you are in school merely leave this blank.  

If after reading this you want further information before completing the questionnaires please contact me at 426-6650, extension 518. If you should want information concerning the results, please feel free to contact me after July 19th. The information I will have available will pertain to groups only and not to individual performances.  

Thanking you for your participation, I am  

Sincerely yours,  

W. F. Browne
GENERAL INFORMATION

NAME _____________________________ SEX _____________________________

AGE ___________ MARITAL STATUS ___________

OCCUPATION _______________________________________________________

GRADE POINT AVERAGE ___________________________________________