THE USE OF SOCIAL INTEREST, ACTIVITY AND AFFECT AS REFLECTED IN EARLY RECOLLECTIONS AS PREDICTORS OF STRESS IN AN ANALOGUE SOCIAL SITUATION

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Michael D. Traver

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APPROVAL SHEET

We the undersigned do certify that we have read this dissertation and that in our individual opinions it is acceptable in both scope and quality as a dissertation for the degree of Doctor of Education.

Accepted May 1978 by

Charles O. Matthews

Charles O. Matthews, Ph.D., Chairman

Kevin E. Geoffroy, Ed.D.

Warren Rule

Warren R. Rule, Ph.D.

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Chapter 1

Nature of the Investigation

Introduction

Alfred Adler's theory has begun to have an increasing impact on education and psychology; but, even so, comparatively few people are aware of the individual psychology of Adler (in Sweeney, 1975). Of the various contributions Adler made to these fields, early recollections (ER), social interest, and activity have remained primarily "Adlerian" concepts and have failed to be recognized as viable instruments in personality assessment.

The resistance in employment of ERs since the inception of the technique is likely due to the disagreement as to the methods of interpretation. While Freud (1925) viewed ERs as "screen memories" which disguised sexual conflict and trauma, Adler (in Sweeney, 1975) interpreted them teleologically, embracing memories as dimly conscious reflections denoting the premise by which one operates his life.

Adler (in Mosak, 1972a) maintained that early memories were retained because of a selective factor in memory; rather than being repressive, they are consistent with the individual's attitudinal frame of reference, i.e., the life style. Of the multiple experiences in childhood, the individual retains at a conscious level only those memories that express his approach to life. These are not casual events, but rather selections, distortions, or inventions of past

events which are retained and reflect the perceptual framework within which he subjectively interprets the experiences of life. It is immaterial whether a recollection corresponds with objective events, alters them, or is simply a fantasy (Ansbacher & Ansbacher, 1956; Mosak, 1972a). Adler (in Ansbacher & Ansbacher) wrote:

> Among all psychological expressions, some of the most revealing are the individual's memory. His memories are the reminders he carries about with him of his own limits and the meaning of circumstances. There are no "chance memories": out of the incalculable number of impressions which meet an individual, he chooses to remember only those which he feels, however darkly, to have a bearing on his situation. Thus, his memories represent his "Story of My Life"; a story he repeats to himself to warn him or comfort him, to keep him concentrated on his goal, and to prepare him by means of past experiences, so that he will meet the future with an already tested style of action [p. 351].

These memories never run counter to the individual's style of life, but, rather, the early recollections complement one another and accurately repeat the proverbial life style. If the goal of superiority, that is, overcoming difficulties by moving from a perceived minus to a perceived plus, demands that the individual feel "other people always humiliate me," he will then remember incidences that can be interpreted as humiliation. If life style alters, memories will concurrently alter, thereby recalling different incidences or associating a new tone to the old remembrances

(Ansbacher & Ansbacher, 1956).

Another major Adlerian concept is social interest. Although probably one of the most distinctive concepts in Individual Psychology, it has also remained perhaps the most difficult and least accepted in the psychological and educational literature of today (Ansbacher, 1968). This phenomenon might be better understood by examining the original concept "Gemeinschaftsgefühl." Lazarsfeld (1961) states that this term, as Adler envisioned it, has no adequate translation whereas Ansbacher and Ansbacher (1956, 1964) would disagree and rather foresee difficulty stemming from matters intrinsic to the concept itself.

The inherent difficulty is that it is a term composed of two parts, neither of which denotes a single referent, but rather two separate dimensions. "Interest" is perceived as a psychological process whereas "social" represents the objects in the outside environment at which the process is leveled (Ansbacher, 1968).

The process dimension of social interest is viewed a trainable aptitude for cooperation contributing to man's propensity to understand and empathize with others. In addition, it is viewed as a subjective evaluative attitude which determines choices in addition to influencing individual dynamics (Ansbacher, 1968). Conceived in this manner, social interest becomes a dynamic force which directs human striving in a socially useful manner and offers an operational framework to conceptualize human movement and development.

Adler (in Ansbacher, 1968) applied the meaning of social (Gemeinschaft) to all objects in the universe in order to signify a

general continuity of life. "Geminschaftsgefühl . . . is at the basis of any relationship of the child toward people, animals, plants, objects, and signifies the cohesion . . . with our life, the affirmation, the conciliation with it [p. 133]." Therefore, the objective dimension denotes a general connectedness.

Social interest is the cardinal trait of Individual Psychology and is the criterion of mental health. This interest in mankind is superlative to nearly all desirable traits and all undesirable traits are due to its absence (Ansbacher, 1968). Only through the effective utilization of social interest can man assume the self-actualization or growth motivation to overcome the personal weakness inherent in man (Nikelly, 1963).

The third and final concept to be discussed is the degree of activity. The utilization of degree of activity as an investigative technique is nearly nonexistent in the literature with the exception of a few studies, e.g., Levy and Gregg (1962), Levy (1965), Tolar and Fazzone (1966), and Lord (1971). This obscurity may be partially traced to quantification and qualification difficulties inherent in any abstract concept. Further, the usefulness of activity as a concept is viewed as limited unless scrutinized in light of the accompanying social interest.

Ansbacher and Ansbacher (1956) note that Adler introduced the concept of activity late (1933) and systematically placed it on the same level as social interest by developing a typology which was understood on the basis of both variables. It is for this systematic reason that activity and its implications are regarded as important

variables, although when viewed as a single factor the concept is of minor importance. When used in conjunction with social interest, however, it seems to be an invaluable tool in understanding the individual's style of life.

The general value of a typology is probably heuristic, i.e., a generalization, possibly to advance an argument; but, in addition to the heuristic value, it may have some clinical value (Kefir & Corsini, 1974). Adler (in Ansbacher & Ansbacher, 1956, 1964) in developing a typology for degree of activity stressed that such a classification is for teaching purposes only. He adamantly warned that, "People who take types and classification seriously do not see how, once a person is put in a pigeonhole, he can be put into any other classification [p. 167]."

Individual Psychology views man as subjectively oriented and motivated; man moves toward a subjectively perceived perfection: overcoming, superiority, success. What he views as success is unique to him. With such peculiarity in development, each individual must be studied separately and the temptation to classify should not be yielded to (Ansbacher & Ansbacher, 1956).

In an effort to bring into perspective the broad field of personality, Adler (in Ansbacher & Ansbacher, 1956, 1964) designated four activity categories which were synthesized with his concept of social interest. The first three types of persons, due to their inability to cooperate and direct their activity toward socially useful objectives, are not prepared to deal with the problems of life which are seen as social problems.

The first type approaches all relationships with a dominant or ruling attitude and, although possessing sufficient activity, lacks in social interest. A second type, and what Adler (in Ansbacher & Ansbacher, 1956) referred to as the most frequent, is the "getter" who makes few efforts on his own but rather expects everything from others and leans on them for their opinions as opposed to taking responsibility for himself. Third is the avoider or hesitator who, in order to avoid defeat, side-steps problems rather than facing difficulties. The second and third types demonstrate little social interest and very small degrees of activity.

The fourth type exhibits activity that is of benefit for others and, therefore, is seen as a cooperative contributer. Such activity being in agreement with the needs of society is seen as normal and useful, thus perpetuating societal evolution. Adler (in Ansbacher & Ansbacher, 1956) viewed this individual as appearing,

> to be one who in his childhood was least exposed to the feelings of inferiority, who showed few noticeable organ inferiorities, and who was not subjected to strong irritations, so that he could develop undisturbedly, learn to love life and to come to friendly terms with it [p. 170].

Statement of Problem

A fundamental objective of the Adlerian counselor is to understand the premises upon which the client bases his assumption of life. Initially, in an effort to determine the internal frame of reference, the counselor draws conclusions from clinical observations from which he ventures to "guess" the mistaken notions, convictions, and goals

of his client. Adler (in Ansbacher & Ansbacher, 1956, 1964) states that knowledge of the client's level of activity and degree of social interest can be important predictive tools to the clinician, particularly when the client is experiencing stress. Adler warned that it is probably not possible to express the degree of activity in quantitative terms by observing only the activities of daily life. In keeping with this warning, the present investigation will use early recollections as a medium to rate such movement. The utilization of ERs as a projective technique helps to assess the dynamics of an individual's personality. Early recollections convey to the practitioner the client's present fundamental views; memories are recognized as being projections revealing goals, convictions, attitudes, and style of living.

The purpose of this investigation is to determine the influence that positive affect and degree of activity have in ERs on the style of life in an experimentally stressful situation. The compounded concepts of activity and affect will be utilized as social interest variables to examine coping capabilities of subjects in an analogue social situation. The level of activity as rated in ERs will be either active or passive. Affect will be determined by the subject's decision as to the pleasantness or unpleasantness of his memory and will be rated as either positive or negative. The combined concepts will provide the independent variables for the study: active-positive and passive-negative.

The questions to be answered are:

1. Will pleasant memories coupled with a high level of

activity correspond with a high degree of social interest?

2. Do individuals with active-positive memories react less stressfully in social situations than those who view the world as unpleasant?

3. Do individuals with active-positive memories experience less stress as they interact with the environment than those who report passive-negative memories?

Theoretical Rationale

Maslow (1942) recognized that "an insecure person looks out upon the world in an insecure fashion, ignoring the facts that run counter to his convictions that he is insecure. He tends to remember only insecure memories [p. 339]." Adler (in Ansbacher & Ansbacher, 1956) long recognized this phenomenon, emphasizing that the impression of the actual experience coupled with the attached feeling and attitude was indicative of the individual's life style; whereas, an objective reproduction, void of the individual's uniqueness, does not exist.

Following this line of reasoning, individuals may, in unfavorable situations, emphasize the unpleasantries of life depicting themselves as persecuted, hurt, unappreciated, or generally viewing life as joyless. There may be a continuous expectation of failure, delays, accidents, and disparagement which results in distrust of one's own strength, awakening doubt and distrust in others, in short, reflecting Maslow's (1942) observation that the "insecure person looks out upon the world in an insecure fashion [p. 339]." An insecure reaction is due to the person's shyness, timidity, anxiety, and estimation of unaccustomed situations which reflects a

self-centered personality focusing attention inwardly for personal gain. The individual's primary concern is thus viewed as his effect on the environment or its effect on him (Ansbacher & Ansbacher, 1956).

When people are in a unique, novel, or stressful situation without the benefit of guidance, they will resort to their earliest convictions for a solution (Sweeney, 1975). An individual whose propensity is to respond in the aforementioned manner is likely, at a dimly conscious level, to recall similar circumstances that reinforce his feelings of insecurity. Such remembrances are likely to reflect a joyless or unpleasant note that would in turn strengthen his own doubt about his capabilities.

Adler (in Ansbacher & Ansbacher, 1956, 1964) regarded social interest as an innate disposition that had to be consciously developed. It is a feeling of belongingness that was described as the barometer of a child's normality and may be understood in terms of a heightened self-concept originating from a feeling of group unity, a self-worth, established by contributing to a common welfare. Lacking this trait would necessitate a personal compensation where "cooperation" is merely a compromise, where the "feeling" of belonging would assume a private meaning, i.e., when in a subjectively felt-plus or superior position.

These dichotomized orientations would indicate a variety of responses. The latter's primary concern is his effect on the environment or its effect on him as opposed to the former's self-assurance and relaxed approach to the problem at hand. Such orientations should be recognized in the individual's first memories where the socially

motivated individual would report pleasant memories. The noncooperator whose striving for personal recognition as compared to a normal, mutual sharing attitude, will have more unpleasant memories due to his insatiable demands. In subsequent paragraphs, an attempt will be made to operationalize Adler's (in Ansbacher & Ansbacher, 1956, 1964) concepts by comparing his approach to that of theorists with similar orientations and present a more concise definition of the variables to be investigated.

Kefir and Corsini (1974) have noted that a number of typologies have been postulated, but due to semantics have not been combined for consistent and widespread use. Ansbacher and Ansbacher (1956) and the above authors compared Hippocrates' sanguine, choleric, melancholic, and phlegmatic types to Adler's classification. Additional typologies have been developed by Horney (1945), Dreikurs (1947), Lewin (1939), Sheldon (1942), and Kefir (1971) (all cited in Kefir & Corsini).

Horney referred to people in a three-part system: (a) moving toward others, (b) moving against others, and (c) moving away from others. Dreikurs based his four-point typology on children's behavior: (a) attention, striving for other's notice; (b) power, a dominating, independent attitude; (c) revenge, seeking to get even; and (d) inadequacy, isolationist attitude. Similar classification is seen in Lewin's democratic, autocratic, and laissez-faire interactive levels; Sheldon's endomorphy (affectionate), mesomorphy (assertive), and ectomorphy (retiring); and Kefir's pleasers, superiors, comforters, and controllers (all cited in Kefir & Corsini, 1974).

In developing their own typology, Kefir and Corsini (1974)

found that the above classifications could be integrated into a four-point classification system which appears to closely resemble Adler's (in Ansbacher & Ansbacher, 1956, 1964) conceptualization. Their classification consisted of (a) accord, a person who goes along with others, a cooperator, a useful individual; (b) conflict, a ruling person who moves against others with power; (c) evasion, one who attempts to get away from the situation, person, group, or life; and (d) neutral, a person who is not actively evasive, who goes his own way not interfering with another.

In focusing more sharply on the objectives of this research, an effort will be made to investigate the active-positive and passive-negative dimensions. These categories as related to Adler's (in Ansbacher & Ansbacher, 1956) training typology are assumed by this investigator to be theoretically characteristic of the socially useful and avoider types, respectively, with the getter type also being represented by the latter category. Other dimensional combinations, i.e., active-negative, passive-positive, will not be considered in this research for the purpose of clarity and precise definition. The social interest trait represented by active-positive and passive-negative dimensions are polarities and not representative of the population, but rather are extremes or ideals. Emphasis will be placed on each end of the continuum focusing on an "ideal" or high social interest and its antithesis.

To explain further, Adler (in Ansbacher & Ansbacher, 1956) noted that the individual who lacks activity may hesitate to move or take action, preferring to remain still, i.e., evade life (Kefir &

Corsini, 1974). When movement does occur, it is with the greatest caution and he may turn backward as opposed to taking risks. This tested approach to life appears to such an individual the best means to avoid unpleasantries. Conceptually, life is viewed as a series of confounding situations that are best avoided. The avoider of life has not found an engaging, interactive approach to life as being the most stress reducing, but rather feels that only by avoiding stressful situations he functions most effectively.

In contrast, socially useful behavior is epitomized by an active assault on social problems in a manner which benefits all. When stressful situations arise, an active endeavor to eliminate the problem becomes a stress reducing resolution. Active engagement is then a tested style of life which when combined with social interest becomes active participation in resolving social problems. As opposed to the self-centered avoider, the socially active person is striving in conjunction with others to overcome a shared problem.

In summary, remembrances reflecting a nonactive or passive solution, i.e., not reacting or relying on others, coupled with an unpleasant affect, would be indicative of a shy, timid, insecure individual. Contrarily, if the individual's remembrances embodied an active solution interfused with a pleasant affect, then an energetic response and positive expectations would be suggested.

Hypotheses

This study will investigate individual responses to a structured socially stressful experience. Stress will be produced by placing responsibility on male subjects to favorably impress a female

confederate in the presence of a male peer rater. Additionally, the subject will be under the impression that a videotape will be viewed and rated by psychologically sophisticated authority figures, i.e., instructors. The hypotheses to be tested are as follows.

Hypothesis 1

Subjects with active-positive ERs will rate significantly higher on a social interest ER scale than subjects with passive-negative ERs.

Hypothesis 2

There is no difference in state anxiety as measured by the State-Trait Anxiety Inventory (STAI) between subjects with active-positive ERs and subjects with passive-negative ERs in the pre-experimental phase.

Hypothesis 3

There is no difference in baseline (resting phase) heart rate between active-positive and passive-negative groups.

Hypothesis 4

During an analogue social situation, the active-positive subjects will show a significantly greater mean decrease in heart rate over time (180 seconds) than passive-negative subjects.

Hypothesis 5

Subjects with active-positive ERs will record significantly lower scores as measured by the State-Trait Anxiety Inventory than subjects with passive-negative ERs at the conclusion of an analogue social situation.

Hypothesis 6

Subjects with active-positive ERs will record significantly lower mean heart rate at the conclusion of an analogue social situation than subjects with passive-negative ERs.

Definition of Terms

Affect

Affect is the recalled feeling tone of the ER by the subject which is ranked pleasant or unpleasant. Explanations of the categories are:

1. Positive is when the environment is perceived as supportive and feeling is one of well-being. A positive affect may be recalled or the event may be perceived as happy.

2. Negative is when the environment is perceived as attacking, threatening, limiting, and the feeling is one of being overwhelmed, or lacking adequate support. A negative affect may be recalled or the event may be perceived as unpleasant.

Early Recollections

ERs are defined as productions of the individual which are selections, distortions, or inventions of past events by the individual to fit his underlying mood, purpose, and interests (Ansbacher & Ansbacher, 1956). Operationally, ERs are defined as responses on the Early Recollections Questionnaire developed by Rule (1972) to describe six earliest memories which are classified into two categories:

1. Active ER--the subject has initiated the recalled event, or, in a situation already defined by another, has initiated a resolution. The ER may convey acting on one's own, initiating, and carrying

out an activity, and/or participating with others.

2. Passive ER--the situation has been initiated by other persons or external circumstances, and subject has merely responded, reacted, or remained where he was, allowing others or circumstances to determine his fate. The ER may convey being the follower, the recipient, and/or observer of other's activities.

Life Style

Life style is the law of movement for the individual; it comprises of the goal, the opinion the person holds of himself and the world, and the method utilized in striving toward his goal. This concept incorporates the total universe of the human being and gives it direction. Life style is his "unique, unconscious, cognitive 'map' which facilitates his movement through life . . . . It is a unifying set of convictions which permit the individual to evaluate, manage, and predict events within his or her experiences [Sweeney, 1975, p. 32]."

Social Interest

Social interest is the feeling of belonging, the innate disposition for other-directedness which begins with the mother and eventually generalizes to all mankind, ultimately extending itself to animals, plants, inanimate objects, and the cosmos (Ansbacher & Ansbacher, 1956).

Plan of Presentation

Chapter 1 embodies a general overview of the nature of the problem. A discussion of the literature which is relevant to the research is given in Chapter 2. Chapter 3 contains a description of

the research procedures used to complete the study. The findings of the investigation are reported in Chapter 4. Chapter 5, the summary, includes conclusions, limitations, and recommendations. Appendixes are provided which include the rating scale and a copy of the questionnaire.

Chapter 2

Review of Relevant Literature

Introduction

In this chapter, literature relevant to the present study is presented which is divided into five general sections. The sections are:

1. studies which investigate the projective usefulness of ERs and compounded concepts of activity and affect,

2. studies which investigate the usefulness of social interest in better understanding personality,

3. studies investigating the procedures for and outcome of analogue social research,

4. studies utilizing the State-Trait Anxiety Inventory as a measure of stress, and

5. studies utilizing heart rate activity as a measure of stress.

Literature Relevant to the Projective Usefulness of Early Recollections

Lieberman (1957) utilized ERs as a projective technique which allows the clinician to make deductions as to the perception an individual holds of himself and his environment. She reported a study designed to test the hypothesis that there is a significant correlation between the material revealed in early memories and data obtained from other projective techniques for assessing psychotic

and nonpsychotic subjects. The experimenter wrote reports on the basis of the ERs, while staff psychologists wrote reports using various test data (Wechsler-Bellevue, Rorschach, Bender-Gestalt, and House-Tree-Person drawings). The reports were compared using a checklist of descriptive items for (a) perception of the environment which included such descriptions as threatening physically or emotionally and rejecting or friendly; and (b) reaction to the environment with a checklist which included emphasis on direct aggression, independence, or dependence, compliance, et cetera. She obtained significant results in terms of the presence of more agreement than disagreement ($p < .001$) in relation to the type of material revealed based on the projective test battery report as opposed to the ER report. A significant correlation ($p < .001$) was found between the amount of information elicited from both reports although more information was obtained from the psychological report significant at the .01 level. Lieberman concluded that early memories are capable of serving as a rapid, valuable sample of the type of data likely to be reflected by the longer time-consuming examinations.

Hedvig (1960, 1963) hypothesized that early childhood memories would not be significantly influenced by the experimentally manipulated conditions success/failure and hostility/friendliness whereas Thematic Apperception Test (TAT) stories would be significantly influenced by either condition. There were 360 subjects' ERs and TAT stories analyzed for manifest content. Analysis of data supported her initial hypothesis, i.e., differentiating TAT from ERs in the success/failure condition with a significance of .02 and the hostility/friendliness

condition with a .05 level of significance. She concludes that her results provide additional support for the clinical validity of early memories as a projective technique in revealing permanent personality characteristics.

In an effort to validate the predictive ability of ERs, McCarter, Schiffman, and Tomkins (1961) used ER characteristics to predict the performance of 75 male students on a variety of scales of the Tomkins-Horn Picture Arrangement Test (PAT). The hypothesis was that PAT performances could be predicted at better than chance accuracy utilizing early memories. Of the 19 predictions, 7 were significantly better than chance, 8 predictions were in the expected direction, and the final 4 did not deviate from chance.

The seven significant predictions appear to have two factors in common: degree of activity and social interest. These variables and their significances were (a) strong superego in work orientation ($p < .002$), (b) inertia in work orientation ($p < .003$), (c) sociophilia ($p < .005$), (d) high activity level of expression ($p < .01$), (e) fantasy level of expression ($p < .01$), (f) superego in social orientation ($p < .02$), and (g) low general work orientation ($p < .05$). The conclusion of McCarter et al. (1961) was that ERs are a valid measure of personality appraisal, especially for determining the degree of activity and social interest.

Results of the study are in very close agreement with Kadis, Greene, and Freedman (1952) who used the Thematic Apperception Test in matching descriptions of 20 female students formulated by their teachers in regard to (a) pursuance of tasks, and (b) relationship

to teachers. After matching the TAT stories with each of the two characteristics as described by the teacher, ERs were added to the TAT protocols which increased correct matchings for both characteristics. These descriptions, as in the study of McCarter et al. (1961), seem to characterize the degree of activity and social interest.

In an effort to validate the notion that ERs change as a result of counseling, Eckstein (1976) reported a case of a female freshman. Early memories were collected pre- and post-therapy after which they were rated on the Early Recollections Rating Scale (ERRS) developed by Altman (1973) and revised by Quinn (1973). Both individual variables and a global rating score were compared between the pre- and post-results. Mean scores on all 11 variables improved on the posttest where eight were significant with the range being between $p < .05$ and $p < .001$ levels of confidence. Global scores for both behavior and affect scores were significant at $p < .01$.

Ansbacher (1947), in an effort to validate the projective usefulness of ERs as proposed by the Adlerian theory, attempted to establish a relationship between certain types of early remembrances and security scores as measured by the Maslow Security-Insecurity Test. Using 271 college students as subjects, Ansbacher administered a questionnaire to obtain the ERs and the first 25 items of the Maslow Security-Insecurity Test; no statistics were performed. He found that subjects who have high security scores remembered themselves as participating in group activities, as being active more frequently, and as being treated kindly by others (33%). Those subjects remembering others receiving kindness and attention, suffering harm, losing or

attaining prestige, or doing harm to another maintained low scores (20%). Those subjects who are in the middle of the security range most often remembered accidents, sickness, or interference from others (30%). Those recollections of inactivity, contemplation, fear, and witnessing a disaster were most likely to be found in the extreme, i.e., very high or very low security scores (17%).

An investigation was made by Purcell (1952) in an attempt to establish if memories were reflective of one's fundamental attitude toward life as proposed by Adler or rather a screen device as viewed by Freud. Several characteristics, primarily affect, were related to security feelings as measured by the Maslow Security-Insecurity Test. Subjects were 126 male and female college students who rated their own ERs on a list of characteristics which were reflective of security feelings; 8 of the 15 correlations yielded significant results ($p < .05$) with pleasantness being indicative of secure feelings ($p < .05$) and unpleasantness of insecure feelings ($p < .01$). These results support Waldfogel's (1948) findings that subjects with greater numbers of unpleasant memories tended to have higher scores on the Thurstone Personality Schedule which indicates emotional instability or a neurotic tendency. Purcell concludes that (a) effective tone of ERs is related to psychological security; (b) Adler's view is generally supported, however, when adult memories were compared to early memories, no differences were found; and (c) Freud's view that the screen memory is the typical childhood recollection is challenged.

Chance (1957) investigated the possibility that the affective

tone of ERs reflect a general trend in personality organization. He hypothesized that pleasantness or unpleasantness is predictably related to recalling success or failure in an experimental task and that the character of the first ER is related to responses given to a self-report personality instrument. There were 28 college students who attempted to solve a list of anagrams presented as a part of an intelligence test, but the students were not allowed time to complete the entire list. Previously the Minnesota Multiphasic Personality Inventory (MMPI) had been administered and emphasis was placed on the A scale (maladjustment with anxiety and dysphoria) and R scale (tendency toward denial and repression). Those subjects with unpleasant ERs were more apt to recall failures ($p < .05$); as predicted, pleasant memory group had R scores higher than unpleasant group ($p < .05$) and pleasant group were more likely to have R scores higher than their A scores while the unpleasant group were more likely to have A scores higher than their R scores ($p < .01$). Although psychoanalytical in approach, the study is indicative of the value of affective tone of ERs in reflecting personality characteristics.

Sattler and Brandon (1967) investigated the relationship between personality characteristics and ERs hypothesizing that a relationship would exist between Taylor Manifest Anxiety Scale (MAS) scores and anxiety content of ERs. The second hypothesis investigated the relationship between R scale scores of the Inventory of Factors STDCR and the introversion-extroversion (I-E) content of ERs. Subjects (84 college students) and judges rated ERs for both anxiety and I-E using a 6-point scale; four analyses of variances were

performed using subjects' and mean judges' ER ratings. Significant main effects appeared in three of the four analyses with judges' mean ER ratings failing to discriminate between I and E groups. Coefficients obtained were: MAS and subjects' anxiety ER ratings .45 ($p < .001$); R and subjects' I-E ER ratings .50 ($p < .001$; MAS and judges' anxiety ER ratings .33 ($p < .005$). R and mean judges' I-E ER ratings .17 ($p < .05$). Sattler and Brandon summarized that these findings indicate ERs have some utility in evaluating personality characteristics.

Reimanis (1966) made the general hypothesis that ER experiences which do not foster or interfere with this process, i.e., the development of social interest, relate positively to anomie. Second, experiences fostering the development of social interest relate negatively to anomie. This hypothesis was confirmed using two populations, one of adults and the other of college students. Results of this research gives support that the relationship of ERs to anomie is similar for middle-aged adults and college students which support previous findings with an aging sample (1965).

Wolman (1970), using delinquent adolescents incarcerated in correctional institutions, attempted to demonstrate the interrelationships of ERs and the perception of significant others during adolescence. It was hypothesized that ERs of a succorance and self-abasement nature would impair the objective perception of significant others while memories of independent activity and confrontation would enhance objective, mature perception. In addition to using ERs, Wolman used definitions to the terms "mother, father, sister, brother,

friend, teacher" in determining the degree to which the subjects perceived others from a self-centered mode as opposed to a more objective role. The most frequently related ERs of this discontented group were succorant and abasement in nature (50%). For males there was an inverse correlation significant at better than .05 (two-tailed test) for ERs of succorance and scores on objectivity for males while for females an identical relationship was found for abasement and the perception of father ($p < .05$). Wolman discusses the results in terms of dependency demonstrated by this population and the passive ego and negative effect demonstrated in their early memories.

Using activity and affect in the ERs of 30 ninth grade boys, Lord (1971) hypothesized that active ERs would be associated with self-concept as an initiator rather than a reactor; activity of approach is related to differentiation of body concept and sense of separate identity, and activity is associated to a sense of competency and effectiveness in coping with present and anticipated problems. Subjects with predominately active and positive ERs were hypothesized to most likely be initiators rather than reactors and would be differentiated in self-concept and possess a highly developed separate identity. The criterion for comparison consisted of five instruments: (a) Pathways Sense of Effectiveness Questionnaire in which a high score indicates a sense of effectiveness and responsibility and where a low score indicates a feeling that external events control circumstances; (b) clarity of vocational goals; (c) reaction to "spy" question indicating initiator vs. reactor; (d) TAT protocols scored for task attitude as a measure of sense of separate identity; and (e) figure

drawings as an indication of directed activity in current self-representation and a measure of differentiation of body concept. Results indicated that active-positive subjects tend to be initiators while passive-negative subjects were reactors but the population was too small for statistical analysis. Activity related significantly to the figure drawing activity ($p < .01$) and a sense of separate identity in TAT protocols ($p < .01$) while affect related significantly to figure drawing activity ($p < .01$), differentiation of body concept ($p < .01$) and sense of separate identity ($p < .001$). No significance was found for sense of effectiveness or clarity of occupational goal.

Early recollections of male homosexuals have been analyzed by Elkin (1974) to determine motivating factors operating in a homosexual's choice and by Friedberg (1975) in an effort to differentiate homosexuals from heterosexuals. Friedberg, using 30 subjects each in the experimental group and control group, hypothesized that the life styles of homosexuals and heterosexuals would be different as distinguished by a weaker self-identity, lesser degree of activity and initiative, less social interest, greater degree of dependency, stronger sense of the world as a hostile and dangerous place, less goal direction, and more severely impaired gender identity. Raters rating each description on a scale from 1 to 5 determined that the homosexual life style can be distinguished from the heterosexual in terms of the following:

1. Homosexuals had a weaker sense of identity ($p < .001$).
2. Heterosexuals had more social interest ($p < .025$).

3. Homosexuals were more dependent ($p < .001$).

4. Homosexuals viewed the world as more hostile and dangerous ($p < .001$).

5. Homosexuals had more impaired gender identity ($p < .001$).

6. There was no significant difference in degree of activity and initiative.

7. There was no difference in degree of goal orientation.

In an effort to understand the homosexual's motivating factors, Elkin (1974) hypothesized that homosexual males would report more ERs that showed a female hurting, ignoring, or screaming in contrast to heterosexuals. There were 30 homosexuals matched on the variables of age, education, and psychiatric treatment. Judges tallied the occurrence of a female hurting, ignoring, screaming in the three ERs elicited from each subject. Results showed 55% of the homosexuals remembered such ERs as opposed to 20% of the heterosexuals with a .01 level of significance. The author concludes that, consistent with Adler's hypothesis, i.e., recollections of dangers and accidents keep in mind the hostile side of life, the ERs of homosexuals serve to warn them that females are threatening and should be avoided.

Bryant and Trockel (1976), using as subjects 34 female Caucasians who scored in the upper- and lower-percentiles in internal-external control, hypothesized that subjects with strong external control orientation would have experienced more early life stressees than subjects with internal control orientation, that these life stressees would be recognized only in preschool and elementary

memories, and that these life stresses related to locus of control would be the collection of events with affective significance (positive and negative as opposed to neutral). Findings indicated that (a) only events associated with affective significance were related to locus of control orientation, (b) these affectively significant recalled life stresses were related to locus of control orientation in preschool ($p < .025$) and elementary ($p < .10$), and (c) while positive life stresses over which some control was exercised during high school years tended to be related in strong internal control ($p < .10$).

Langs, Rotherberg, Fishman, and Reisner (1960) published an article serving the dual purpose of presenting a Manual for the Scoring of Earliest Memories analyzing manifest content and to present a pilot study illustrating the productivity of the manual. This study had as its population two groups, 10 female hysterics (H-group) and 10 female paranoid schizophrenics (S-group), whose memories were scored by three judges who achieved a unanimous agreement of 77.1%, later reaching consensus on all items. Of the many observations made, the most relevant to the present research are: H-group reported 6 memories as unpleasant while the S-group reported 2 ($p < .10$); in contract all 10 H-group memories were scored as traumatic while 5 S-group memories received this score ($p = .03$); and H-group patients had memories which included both activity and passivity in 5 memories as compared to 1 such incident in S-group ($p = .10$). The remaining ERs were approximately equally divided between activity and passivity; the patient's perception of the environment was "threatening

and dangerous" as scored in all the H-group and half the S-group memories ($p = .03$); and finally, judges correctly diagnosed all S-group and 9 of 10 H-group using only memories.

Using this scoring system, Langs (1965a), analyzing the manifest content of the first memory of 98 subjects, attempted to predict personality features; 60 scores were obtained from the memories and each memory was rated on 76 personality measures referable to the areas of motives, defenses, thought processes, inner states, identity, and interpersonal behavior. Ratings were based on an interview, Rorschach, Thematic Apperception Test, Wechsler-Bellevue Test, and autobiography. Exploring all correlations, i.e., 773 predictions made of the 60 first memory scoring categories, it was revealed a significantly greater number of correct predictions than expected by chance ($p < .001$).

Using the same subjects and methods, Langs (1965b) reported a study that related first memories to a clinical diagnostic statement of character structure as established by the assessment of Rorschach Test protocols. Subjects were 48 male actors who were screened for psychotic illness of which 12 were considered borderline and the remaining considered on the neurotic-normal continuum; four characterologic diagnoses were made: obsessive-compulsive, inhibited obsessive compulsive, hysterical, and narcissistic. First memory scores were compared to each diagnostic group and chi-square analysis were performed with significance varying from .20 to .01 level of confidence prompting Langs to conclude that first memories are reflective and predictive of current functioning and personaltiy.

Mosak (1969) evaluated the efforts of Langs et al. (1960) and Langs (1965a, 1965b) in ER research noting that, although taking a psychoanalytical approach, the findings are relevant to Adlerian theory due to emphasis on manifest content as opposed to latent content. Mosak concludes that the studies of Langs and Langs et al. are the first large scale, precise research on ERs, demonstrating convincingly that ERs lend themselves to quantitative investigation and a major weakness of the studies lies in the limited data collected so far.

Friedman and Schiffman (1962), using psychologically naive judges who were trained for 15 minutes, attempted to differentiate psychotic depressive patients from schizophrenics. Of the nine hypotheses, four hypothesized that ERs of schizophrenics would show (a) absence of positive effects; (b) fear, terror, and/or horror; (c) concern with bodily harm other than that caused by illness or aging; and (d) absence of persons, or personal relations that are negative or neutral at best. Early memories of depressive patients were hypothesized to show (a) positive affects; (b) if negative affects, then tragic ones, such as sadness, distress; (c) concern with physical illness and aging but not with other bodily harm; (d) a strong but generalized desire to be close to others; and (e) work and/or achievement orientation.

There were two experiments performed using separate groups of judges and patients. Judges in both experiments achieved significant reliability ($p < .01$) on the basis of the given hypothesis. Using the psychiatric diagnosis as the criterion by which the judge's diagnosis had to agree, validity was high for three of the four

judges, two achieving a significance of .05, one of .01, and one narrowly missing at the .07 level of significance. Further, a more stringent validity was enforced requiring conjoint agreement of both judges being correct in each experiemnt. Significance values attained were .01 in both experiments. Judges were very effective in understanding and diagnosing depressives (correct in 16 of 20 cases in experiment one and 15 of 19 cases in number two) but accuracy was much less for schizophrenics (3 of 10 cases and 2 of 7 cases in each experiment). Friedman and Schiffman (1962) conclude that psychologically unsophisticated persons can distinguish depressives from schizophrenics on the basis of the nine rules as applied to early recollections.

On the assumption that current neurotic symptoms and ERs of the patient should have some relationship, Jackson and Sechrest (1962) tested the hypothesis that: in anxiety reaction patients, ERs will show obvious fear; depressed patients will give memories of abandonment; obsessive-compulsives will recall strong prohibitions; and gastrointestinal disordered patients will recall gastrointestinal distress. Although the absolute frequency of themes was too low to have import for differential diagnosis, anxiety neurotics, more than other groups, were characterized by themes of fear; depressed patients by themes of abandonment; and gastrointestinal sufferers by themes of gastrointestinal distress. The sex theme was particularly common with obsessive-compulsives; themes of accident, illness and trauma were more common among anxiety neurotics, gastrointestinal sufferers, and normals. Neurotics, as a whole, had more unpleasant

ERs than the normal group ($p < .02$).

Levy and Gregg (1962), disagreeing with the general psychoanalytical interpretation of ERs using latent content and the manifest content utilized by Adlerians, developed a thematic-configurational method of analysis which, from those authors' point of view, captures the essential emotional state of the individual. The themes are seen as holistic units for ER analysis being preconscious in nature, tapping significant portions of the underlying affects and trends of objective relations; three major quantitative scales with underlying themes being arranged from most regressed to most progressed were devised: Dependency-Interdependency; Destructive Aggression—Constructive Aggression; Sexuality. Using this method, the authors analyzed 21 sets of ERs without any benefit of clinical data after which conclusions were independently matched by both authors to formulations previously derived by the patient's therapist. With an agreement of 80%, each successfully matched 11 pairs ($p = .0003$). They concluded that the thematic-configurational method used appeared reliable and with it preconscious themes could be predicted.

Ferguson (1964) studied ERs within the context of Adlerian theory for projective usefulness using as her sample 10 psychotics, 10 neurotics, both groups being psychiatrically diagnosed as such, and 10 normals; three Adlerian clinicians wrote life style summaries on the basis of these ERs after which they attempted to match one anothers' analysis to the subject. Significant matching accuracy, several beyond the .0001 level of confidence, were attained. In addition, seven other clinicians (Adlerian, Freudian, eclectic)

replicated the experiment achieving significance in all but one matching attempt (total of 14 sets). Ferguson concludes that life style formations based on ERs are reliably communicable to a wide range of professional workers. None of the clinicians were able to attain above chance accuracy diagnosis of psychopathology on the basis of memories. Ferguson points out, however, that Adlerians warn against such a diagnosis with ERs alone.

The diagnostic proficiency of Adlerian clinicians using ERs in differentiating children previously diagnosed as psychoneurotic or adjustment reaction, conduct disturbance, was tested by Hedvig (1965). Analyzed data indicated one judge supplied predictions significant at the .001 level (42 out of 51 subjects), a second judge was significant at the .02 level in his predictions (34 subjects), while a third judge did not achieve significance. Combined ratings were significant at the .001 level. Hedvig states that results indicate that experienced clinicians, on the basis of ERs alone, can make diagnosis only to a limited degree, as coefficients of correlations between the diagnosis of the judges and the clinic were .70 ($p < .01$), .32 ($p < .05$), and .08 (not significant).

In another study using the ERs of children, Weiland and Steisel (1958) analyzed 104 memories of 95 children under psychiatric treatment who ranged from 5- to 18-years-of-age. There were 17 major variables analyzed as to presence and/or frequency over the total sample as well as grouping as to frequency. The authors found two statistically significant findings. Frequency of geographic location was found to be significant beyond the .01 level of confidence while

the age at the occurrence of the ER clustered around the oedipal years.

Levy (1965) reported a study where 40 ERs from an outpatient psychiatric population were analyzed and compared to previously written psychological reports in an effort to distinguish between relatively adequate and inadequate level of ego integration and to introduce a new ER rating scale. The limit of analyses were referred to as modes which are viewed as the individual's approach to emotional areas such as "givingness," "mastery," and "mutuality." Each mode is scored on the positive-negative dimension of affect. Levy and two other judges achieved a 74% ($p < .001$) agreement utilizing this method and were able to achieve significance beyond .001 level of confidence on a chi-square test in predicting the level of ego integration. Levy concludes that insights into the patients' characteristic approach to emotional situations may be analyzed utilizing this method.

Using Levy's (1965) system of early recollection analysis, Tolor and Fazzone (1966) attempted to differentiate students by academic performance with the structural features of early memories. Subjects were 58 senior class students who were equally divided as to grade point average (GPA) with one-half in the upper 10 percentile and the other in the lower 10 percentile. Results showed that the distribution of ERs for high GPA and low GPA were not significantly different ($p = .28$) and, therefore, did not support the hypothesized relation between ERs and academic achievement at the college level. Conclusions questioned the adequacy of the classificatory system and

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conceptualization while also noting the homogeneity of the population.

Holmes and Watson (1965) reasoned that, because ERs were designed to overcome feelings of inferiority and because ERs are related to the origin of inferiority due to being indicative to the style of life, then, ERs would be negative in nature. An effort was made to determine if manifest content in ERs was related to the style of life as judged by occupational choice and if vocationally related ERs would have a more negative tone than those offered by another occupational group; two experimental groups, teachers and nurses in professional schools, were examined and compared to that of a control group of mixed vocational objectives. Subjects were asked for three freely associated remembrances in addition to ERs associated with two educational and two medical stimuli. Subjects were also asked to score each recollection for its affective tone. Comparison of educational content of teachers' first ER as compared to the control group showed the proportion not significant but was significant in the second ($p < .01$) and approached the .10 level of the third. The proportion of medically related ERs for the nurses as compared with the control was greater in all ERs, the first being minimal, second approaching significance at the .05 level of confidence, and the third significant beyond the .05 level. Significance was found in the opposite direction for teachers as to the affective tone being more positive than that of the control (approaching and obtaining the .05 level on the second and third ERs, respectively) while the nurses showed no significance.

Manaster and Perryman (1974), using a similar population, graduate students, were unable to find evidence in support of the systematic difference in any variable betweern ERs as found by Holmes and Watson (1965). Rather, a number of ER variables were found to vary significantly between groups of students in teaching, counseling, nursing, biology, and accounting, which were explainable within the occupational groups. Nursing/medical and counseling subjects mentioned "mother" characters more frequently which the authors explained might be expected in helping professions; teaching and medical/nursing subjects mentioned "nonfamily members" more frequently which may reflect a propensity to be oriented to large numbers of people; nursing/medical group had a trend toward having a "total number of character types" ($p = .07$) and counselors remembered more positive ERs ($p = .17$). The conclusion of this study, as was Holmes and Watson's conclusion, is that manifest content of childhood remembrances has definite value and should be further investigated.

Attarian (1973) arrived at much the same conclusion stating that results of his study supported the hypothesis that ERs can be used as accurate predictors of educational preferences. Students (31) were selected on the basis of their answers on the Self Directed Search; three judges were successful in predicting the educational preference of each student solely on the basis of his recollections.

In order to investigate whether socioeconomic status would be a factor in unpleasantness of ERs, Pattie and Cornett (1952) drew ERs from three groups, those of a highly favorable environment, i.e., fathers were professional men, and a highly unfavorable environment,

slums and mountain settlements. Subjects were three groups of 36 boys of an average of 12 years who were asked to produce their earliest memories in addition to remembrances relating to parents, other children, and pets or animals. After solicitation, each child was interviewed privately to determine if the memory was pleasant, unpleasant, indifferent. The authors report that the mean percentage of unpleasant memories were more than twice as high in the unfavorable environments than those of the favorable one. As measured by tests of insecurity developed by Sanders, those boys from the unfavorable situations who were maladjusted showed a tendency to give higher percentages of unpleasant ERs. As concluded by the authors, boys in an unfavorable environment mirror in their ERs the neglect, violence, and poverty of that environment.

On the assumption that ERs reflect the type of environment in which one feels one is functioning, Pustel, Sternlight, and Siegel (1969) hypothesized that institutionalized mental retardants would produce significantly more unpleasant ERs than pleasant. The population was composed of 30 adolescents and 30 adults of both sexes. Results indicated that male and female adults produce significantly ($p < .01$ and $p < .05$, respectively) more unpleasant ERs which was also true for female adolescents ($p < .05$) but insignificant for male adolescents.

Using enlisted military personnel undergoing a stressful life situation in basic training, Burnell and Solomon (1964) attempted to determine if ERs would be an accurate measure of ego strength and an indicator of basic characterological conflicts. Using Levy and

Gregg's (1962) thematic classification system and one formulated by the experimenters, their results indicated that judges could predict by examining ERs at 68% accuracty, without training, whether a given recruit would be successful in basic training. The authors concluded that ERs can be used to evaluate the coping ability of a given individual.

An effort was made by Quinn (1973) to differentiate recidivist from nonrecidivist inmates by employing ERs as a projective technique. Grouping 76 subjects into one of four categories, recidivists whose crimes were (a) against people and (b) against property, and non-recidivists whose crimes were (c) against people and (d) against property, the author rated each ER in terms of behavior toward the environment and affect. Of the nine possible dependent variables, one, competitive-cooperative, interacted with the independent variables. Recidivists convicted for property crimes scored significantly lower than did nonrecidivists convicted of property crime. Findings on all other scales support the conclusion that these life style characteristics from ERs are not viable predictors of recidivism or type of crime.

Rogers (1977), utilizing the Manaster-Perryman Manifest Content Early Recollection Scoring Manual, explores the relationships between college achievement as defined by GPAs and the manifest content of ERs. The scoring system, analyzed ERs across 42 variables, isolated 26 variables which accounted for 75% of the variance, as determined by a Stepwise Multiple Regression. In producing a simple and manageable prediction equation, attention was focused on four

variables which accounted for 50% of the variance, i.e., (a) active-passive, (b) setting (travel), (c) setting (outside of neighborhood), and (d) concern with detail (auditory). Results were insignificant in predicting GPAs for standard error of estimate for the equation was $\pm$ .82. However, high positive correlations between the active-passive variable and GPA (.57) indicates a strong relationship between high achievement and tendency to act. In addition, a high correlation between GPA and control (internal), i.e., .55, points to a strong relationship between a feeling of responsibility for one's destiny and high academic accomplishment.

In summary, research attempting to validate the usefulness of ERs as a projective technique by either comparing ERs to other instrumentation or theoretical postulations has met with general success (Eckstein, 1976; Hedvig, 1960, 1963; Kadis, Greene, & Freedman, 1952; Lieberman, 1957; McCarter, Schiffman, & Tomkins, 1961). Although at times not consistently supporting the anticipated results, e.g., Purcell, 1952; Waldfogel, 1948; Wolman, 1970; Bryant and Trochel, 1976; research using ERs as a means to investigate personality variables has been relatively successful (Ansbacher, 1947; Chance, 1957; Elkin, 1974; Friedberg, 1975; Lord, 1971; Reimanis, 1966; Sattler & Brandon, 1967). Further, studies have examined with varying results the use of ERs as a technique to make diagnosis. Although not the objective in analyzing ERs, some success has been demonstrated (Ferguson, 1964; Friedman & Schiffman, 1962; Langs, 1965a; Levy, 1965; Levy & Gregg, 1962) in addition to mediocre or questionable results (Friedman & Schiffman, 1962; Hedvig, 1965; Jackson & Sechrest,

1962; Langs, 1965b; Weiland & Steisel, 1958). Generally, nonimpressive results have stemmed from research investigating the likelihood to obtain a high GPA (Rogers, 1977; Tolor & Fazzone, 1966) while varying outcome can be observed in educational and vocational correlates (Attarian, 1973; Homes & Watson, 1965; Manaster & Perryman, 1974). While the literature appears to support the assumption that ERs reflect one's environment (Pattie & Cornett, 1952; Pustel, Sternlight, & Siegel, 1969) as well as the ability to predict coping ability of military recruits (Burnell & Solomon, 1964), support is not established for inmate recidivism (Quinn, 1973).

Literature Relevant to Social Interest

Machover (1949) noted that when observing drawings done of a human that the face may be regarded as a social feature and when omitted may be indicative of a difficuly with social contacts. This individual may be "one who is evasive about the frictional character of his interpersonal relationships . . . . Superficiality, caution, and hostility may characterize the social contacts of such an individual [pp. 40-41]." Fiedler and Siegal (1949) found significantly higher scores on drawings of humans on an accumulated head score on the Goodenough Draw-A-Man Test produced by adults who had improved in psychotherapy as compared to those who had not improved. Richey and Spotts (1959) found a high correlation between popularity and the face scale of the same test concluding that popularity and social attractiveness is a function of ability to relate to one another, i.e., social responsiveness.

Stone and Ansbacher (1965) noting that the above researchers

did not specifically differentiate between communication and non-communication aspects of the head hypothesized (a) a measure of social interest is related to drawing communication organs, and (b) the communication organ score is a better index of social interest than the entire head, the noncommunication features of the head, the body alone, or the Goodenough Draw-A-Man Test as a whole. Using the California Test of Personality (CTP) as a criterion to indicate social interest, 59 fourth grade children were administered the Drawing test and CTP. The authors concluded that the results substantiated the predictions as correlations were .729 ($p < .01$) between drawing communication organs and the CTP; .259 (not significant) between social interest and the remaining features of the face: .474 ($p < .01$) for the entire head; the body correlated at .022 (not significant); and total Goodenough score was .288 (not significant).

Based on Adler's (1958, 1964; in Ansbacher & Ansbacher, 1956, 1964) position that social interest is the barometer of normality and adjustment, i.e., all maladjustment is a consequence of one's lack of social interest, Huber and Davis (1975), Huber and Forsyth (1972), and Huber and Stiggins (1970) published a series of research studies investigating this issue. Based on the previous contention, Huber and Stiggins (1970) hypothesized that better adjusted individuals would perceive a double-aspect stimulus as social (human) stimulus significantly more often than maladjusted individuals. An additional prediction was made, based on Adler's contention that social interest increased with age and that maladjustment is in essence immaturity, that younger children would be less

likely to perceive the stimulus as human. Subjects were 250 first-, third-, fifth-, seventh-, and twelfth-graders and 34 patients. Results indicated a significantly larger number of human responses between the first- and twelfth-grades and between the third- and twelfth-grades ($p < .01$). A significant difference ($p < .01$) was also observed between the patients and twelfth graders who served as the control. The authors concluded that social interest as manifested in one's perception decreases with maladjustment and increases with age.

Huber and Forsyth (1972) extend the study to include 575 subjects of eight ages and four mental health categories. They were analyzed on double-aspect figures representing nonhuman (NH) or human (H) stimuli of which the latter aspect was divided between whole face (WF) and communication organs (CO). Age had a significant effect with WF items and CO items both achieving a .005 level of confidence. The diagnostic group and control group were differentiated with CO stimuli ($p < .005$) but diagnostic groups did not differ significantly on WF stimuli. The authors concluded that WF perception is more of a function of maturation whereas CO perception is a function of mental health.

To investigate the results of the study, Huber and Davis (1975) attempted to assess the change in perception of human vs. nonhuman double-aspect stimuli during therapy. On the assumption that the patient becomes more aware of humans besides himself as he progresses, the authors predicted: (a) patients who progress in therapy will show more attention to the human aspect of CO

double-aspect stimuli than patients who show no improvement, and (b) WF double-aspect stimuli will not differentiate between the two groups. The hypothesis was supported in that only CO items discriminated between improved and unimproved patients ($p < .01$).

Reimanis (1974) hypothesized that youths convicted would show more ERs which interfered with the process of fostering the development of social interest than other youths. A 74-item scale was utilized which was rated on a 6-point scale assessing relationship to one's community and family, one's mother and one's father coupled with the Strole Anomic Scale. Results supported the hypothesis in that a significant higher level of anomie ($p < .05$) was indicative of convicted youths who reported memories which can be expected to interfere with the development of social interest.

Crandall and Harris (1976), in an effort to validate the Social Interest Scale (SIS), found that the SIS significantly correlated ($p < .005$) with cooperative behavior in a Prisoner's Dilemma game. Significant support ($p < .01$) was found for a post hoc hypothesis that subjects scoring low on the SIS would more likely decrease in cooperation than those scoring high. In a second study, it was found that those who scored high on the SIS were more likely to volunteer their time to help others in need as compared to non-volunteers ($p < .05$).

In lieu of investigating the validity and correlates of the Social Interest Scale, three studies were reported by Crandall and Reimanis (1976); three hypothesis were postulated for the first study. Reasoning that high social interest would correlate highly

with a positive attitude to life, as proposed by Adler (in Ansbacher & Ansbacher, 1956, 1964), the authors hypothesized that social interest would correlate positively with measures of general happiness and satisfaction. Second, because food dislikes may be regarded as a general dissatisfaction with life, social interest scores were hypothesized to correlate negatively with food adversion; and, third, preoccupation with the past would be reflected in lower social interest scores. As predicted, results were substantiated at the .05 level of confidence for all hypotheses.

To further investigate time orientation, the Time Competency scale of the Personal Orientation Inventory was correlated with social interest scores on the SIS to test the hypothesis that a positive correlation would exist. Results were significant at the .02 level.

The third study using as a population 62 students and 30 inmates hypothesized that inmates would score lower in social interest and that individuals with unpleasant ERs would score lower in social interest. As predicted, SIS scores between inmates and college students were significantly different ($p < .02$) and men with low social interest scores consistently described unpleasant memories as compared to high scoring subjects.

Hjelle (1977) presented research designed to examine the relationship between social interest, locus of control, and self-actualization using 72 undergraduate women as subjects. It was predicted that women who indicated a strong belief in internal control of reinforcement contingencies and evidenced high self-actualization would score high in social interest. The author substantiated his

rationale quoting research that suggests internally oriented people are socially oriented and stating that self-actualization and social interest are overlapping concepts. Using as a measure the Social Interest Index (SII) and the criterion for locus of control and self-actualization the Nowicki-Strickland Internal External scale and Personal Orientation Inventory, respectively, Hjelle successfully demonstrated high F ratios at better than the .001 level of significance. The author concluded that Adler's criterion for psychological maturity is valid but stressed the results could not be generalized beyond the population utilized.

Altman (1973) investigated the relationship of early recollections to empathy, birth order, and sex utilizing as subjects 48 participants in a 6-week guidance institute. A nine continua Early Recollections Rating Scale of Social Interest Characteristics was rated on a 7-point scale to obtain a social interest score which was the mean for each of the nine characteristics and a global score being the total of the nine means. In addition, empathy ratings and birth order were obtained from the subjects. The first hypothesis that a positive correlation would exist between social interest scores and empathy was supported as observed in significant correlations ($p < .05$) in five of the nine continua: benevolence, befriended, friendly, acceptance, and cheerful. Empathy, as hypothesized, also correlated significantly with the global score of social interest. A social interest variable, gregarious, was found to correlate ($p < .05$) with sex (female) as hypothesized. Significance was not established for the hypothesis that social

interest and empathy would correlate with nonfirst borns.

Although in limited quantity, the preceding studies offer strong support for Adler's (in Ansbacher & Ansbacher, 1956, 1964) contention that social interest increases with age (Huber & Forsyth, 1972; Huber & Stiggins, 1970), advances in therapy (Huber & Davis, 1975), maturity (Hjelle, 1977; Reimanis, 1974), cooperative behavior (Crandall & Harris, 1976), with a positive attitude in life (Reimanis), and empathy (Altman, 1973; Stone & Ansbacher, 1965).

Literature Relevant to Analogue Social Research

In an effort to establish a measurement procedure for social anxiety and assess the relationship of autonomic perception to behavioral manifestations of anxiety, Borkovec, Fleischmann, and Caputo (1973) exposed 34 college males (17 socially anxious and 17 socially nonanxious) to three increasingly stressful phases of a social interaction situation. To assess anxiety, a self-report measurement, Social Avoidance and Distress (SAD) scale, was administered of which those scoring in the upper- and lower-quartiles were selected. The Autonomic Perception Questionnaire was administered in an effort to determine the autonomic responses subjects notice when anxious. The stress-producing social situation involved frequently interrupted interaction sequences between the subject and two confederates. Posttest self-report measures were shown to effectively discriminate between high- and low-anxious subjects ($p < .025$) while behavior measures (word production, overt anxiety, and speech disfluencies) did not. The authors note that such a study is amenable to continuous during session physiological recording due to the reported increase

by high Social Avoidance and Distress subjects and reported decreases by low Social Avoidance and Distress subjects in the Autonomic Perception Questionnaire.

Borkovec, Stone, O'Brien, and Kaloupek (1974) outline five suggestions that appear to be germane to the issue of target behavior selection:

1. The behavior should occur with reasonable frequency in the psychiatric population.

2. The behavior should be a source of concern and interference in daily functioning.

3. Behavior should be uninfluenced by demand or suggestion.

4. Increases in physiological arousal should occur in anticipation of a response to the situation.

5. Behavior should not result in rapid habituation.

To examine these considerations, the authors reported a study evaluating a measurement procedure for social anxiety using as subjects 23 socially anxious and 23 socially nonanxious college males. Subjects were exposed to two brief interactions, 3 weeks apart, with a female confederate. The second interaction was divided into high- and low-demand instructions to assess suggestive effects. Physiological measurements were taken to assess anticipation of and response to the social interaction, and effects of habituation were assessed over repeated testing. The Fear Survey Schedule was used to differentiate anxiety groups; self-report anxiety was measured by the Anxiety Differential; and the Autonomic Perception Questionnaire assessed awareness of autonomic responses. The subject was asked to rate

himself on a two-question "participant rating of effectiveness" and the confederate rated a two-question "confederate rating of effectiveness"; observers rated the subject on a timed behavioral checklist; recordings of verbalizations were scored for disfluencies, and percentage of session during which the subject speaking was timed. In addition, heart rate activity was recorded.

Borkevec, Stone, O'Brien, and Kaloupek (1974) state that social anxiety appears to be a viable target behavior for analogue thereapy research. Results reported indicated that anxious and non-anxious subjects were discriminated by the Anxiety Differential ($p < .01$), the Autonomic Perception Questionnaire ($p < .01$), and the effectiveness ratings ($p < .01$). Behavioral measures failed to differentiate the two groups but high anxious subjects were rated lower in social effectiveness ($p < .01$) and responded to a greater degree physiologically during the pretest ($p < .05$); high demand suggestions had no positive effect on anxious behavior but high demand in one low anxiety group did result in increased arousal; clear anticipatory and reactive physiological arousal was observed ($p < .01$); and no habituation occurred in arousal over repeated testing.

Clark and Arkowitz (1975) reported a study where the main purpose was to compare the self-evaluation of social performance of high- and low-social anxious subjects. Subjects were 12 each low- and high-anxious males who were differentiated with the Social Avoidance and Stress Scale. The two questionnaires completed prior to the study were: the Fear of Negative Evaluation scale and the Coopersmith Self-esteem Inventory. Subjects who interacted with

female confederates were asked to evaluate their own performances on the dimensions of social skills, social anxiety, and favorability of female response. Judges also listened to tapes which were then rated on the same dimensions, after which discrepancy scores were determined. It was predicted that high socially anxious men would underestimate positive aspects of their performance (social skill and female response) and overestimate negative aspects (social anxiety) compared to low socially anxious subjects. Differences on the Fear of Negative Evaluation Scale and the Coopersmith Self-esteem Inventory were significant ($p < .001$) in discriminating between high- and low-anxious subjects. While judges' ratings found significant difference between the groups in only social anxiety ($p < .001$), high socially anxious subjects rated themselves as significantly more anxious ($p < .001$) and lacking in social skills ($p < .001$). Female responses were not significant in either judgment. A significant difference at the .01 level was determined between high- and low-anxious subjects in the self ratings of social skills. The results support the overly negative self-evaluations of the high anxious group, while the self-evaluations of the low anxious group were more positive and consistent with the judges' evaluations.

Arkowitz, Lichtenstein, McGeorge, and Hines (1975) in comparing high frequency daters (HFD) and low frequency daters (LFD) attempted to determine behavioral differences in social competence and examine the relationships among the measures of social competence. Subjects were 20 HFD and 15 LFD who were identified with the Social Activity Questionnaire. The three self report inventories administered

were: Social Avoidance and Distress Scale, Fear of Negative Evaluation (FNE) Scale, and the S-R (Stimulus-Response) Inventory of Anxiousness (SRIA). The Taped Situation Test (TST), the first of four phases of the study, consisted of 10 taped social situations to which the subject was rated on his responses. In the second, the subject interacted with a female confederate and, subsequently, was rated by judges. In the third phase, the subject asked a female confederate for a date via phone and, in the fourth, a Peer Rating Inventory was completed by close acquaintances of the subject. Results indicated highly significant differences between the groups on each self-report inventory ($p < .001$) and when compared to one another the Peer Rating Inventory significantly discriminated the groups ($p < .001$). On the TST, HFD subjects had shorter latencies ($p < .01$) and more words per response ($p < .01$). Ratings on the conversation indicated the HFD subjects were more socially skilled ($p < .01$) and had fewer silences ($p < .01$).

Glasgow and Arkowitz (1975) using 59 males and 59 females rated as high frequency (HFD) or low frequency (LFD) in dating were matched with opposite sexed partners and compared on behavioral, self-report, and partner rating measures of social competence and attractiveness. The subjects were introduced and then informed that in the following 10-minute interaction they would be rated by judges after which they would complete self-report and partner rating measures. Only the results for the males follow. Neither total frequency nor behavioral measures produced any between group differences. Physical attractiveness significantly discriminated between

the LDF and HDF groups ($p < .02$), LFD subjects rated themselves significantly less socially skilled ($p < .05$) and mor anxious ($p < .02$) than HFD subjects. The authors conclude that self-evaluation accounts for the inhibition in men as opposed to social skills deficit.

Smith and Sarason (1975), on the assumption that the socially anxious individuals are highly motivated to avoid disapproval of others and are attentive to evaluate interpersonal cues, investigated the effects of social anxiety on perception of and responses to negative interpersonal feedback. Subjects were 104 male and 107 female college students divided into low-, moderate-, and high-anxiety groups as differentiated by the Fear of Negative Evaluation Scale. The subjects participated in a role-playing experiment where they were to interact with another person who had then rated them in a negative manner. The subjects then rated on a 9-point scale how favorable they judged the others' evaluation, how good or badly they felt, the likelihood of actually being evaluated in that way, and their willingness to interact with the evaluator in the future. High- and moderate-anxiety subjects rated the others' evaluation as being significantly more unfavorable than the low group ($p < .01$) and the same pattern emerged in that they felt more badly about the negative evaluation ($p < .01$). The high anxiety group rated themselves as being significantly more likely to receive such an evaluation ($p < .05$). The authors conclude the results indicate social anxiety has an effect on reactions to negatively toned interpersonal feedback.

In an attempt to establish a substitute for college students with small animal fears in analogue therapy studies, research utilizing social anxiety has been closely investigated (Borkovec, Fleischmann, & Caputo, 1973; Borkovec, Stone, O'Brien, & Kaloupek, 1974). Results have been supportive as observed in a variety of measures indicating increased anxiety, low habituation rate, low suggestibility, frequency of occurrence in normal living, and as observed in a behavior which is a source of concern in the individual's daily functioning.

Preceding research reviewed demonstrated that self-report measures effectively differentiate low- and high-anxious persons (Arkowitz, Lichtenstein, McGeorge, & Hines, 1975) and such research is amenable to physiological measures (Borkovec, Fleischmann, & Caputo, 1973; Borkovec, Stone, O'Brien, & Kaloupek, 1974). Some success has been demonstrated with behavioral ratings (Arkowitz et al., 1975; Borkovec, Stone, O'Brien, & Kaloupek, 1974) but a need for improvement in these measures has been indicated (Arkowitz et al., 1975; Borkovec, Fleischmann, & Caputo, 1973; Borkovec, Stone, O'Brien, & Kaloupek, 1974; Glasgow & Arkowitz, 1975). Generally, high anxious individuals tend to negatively rate self-evaluations (Clark & Arkowitz, 1975; Glasgow & Arkowitz, 1975) and react more intensely to negative feedback (Smith & Sarason, 1975).

Literature Relevant to the State-Trait Anxiety Inventory as a Measure of Anxiety

The following results of studies are representative of

research utilizing the State-Trait Anxiety Inventory as a major variable. The populations represented are normal adolescents and adults, i.e., high school and college students, and various patient populations.

Hodges (1967) exposed students to two different stress conditions: failure-threat and shock-threat. Each subject was told he was not performing as well as other subjects in the failure-threat condition whereas subjects in the shock-threat condition were told they had done well but would receive several strong but safe shocks. In the failure-threat condition, subjects with a high level of A-Trait had a greater change in STAI A-State scores than those of low A-Trait. In contrast, the author found that increase in A-State in the shock-threat condition was unrelated to A-Trait.

Sachs and Diesenhaus (1969) investigated the effects of examination stress experienced by university students by administering the STAI (Form B) during the beginning of the semester (nonstress administration) and prior to the final examination (stress administration). A-State mean score prior to the examination was significantly higher than that of the nonstress situation. The authors interpreted the small but significant decrease in A-Trait score as a general tendency for subjects to score lower in repeated administration of personality tests.

Lamb (1970, 1976), using as subjects 50 undergraduate males, investigated the effects of stress on measures of state and trait anxiety. Subjects were divided into either high speech A-Trait (HSA) or low speech A-Trait (LSA) and exposed to anxiety producing

speaking situations; four experimental conditions established were (a) rest period, (b) a period where each subject gave an impromptu speech which was recorded, (c) a post-speech period when state and trait anxiety was obtained, and (d) a period when subjects were required to blow up a balloon until it burst (threat condition). Results indicated that A-State anxiety level, as measured by heart rate and STAI, increased with both the speech and balloon stress conditions. The HSA subjects obtained greater A-State scores than the LSA subjects while no differential increases in A-State was found in the balloon period. Trait anxiety as measured by the A-Trait scale remained unchanged.

Auerbach (1969) investigated the effects of instructions and feedback on performance in a stress and nonstress situation. Subjects were high (HA) and low (LA) STAI A-Trait scores who were administered a word completion task which was presented as an intelligence test (high stress) or practice task (low stress). Success or failure feedback were given to the two experimental groups while the control group received no feedback. Results indicated that orienting instructions had no effect upon A-State scores. Greater increases in A-State were evoked in the failure feedback situation than either success or no feedback. Success and no feedback groups showed slightly elevated scores in A-State but no differences in magnitude were detected. The author attributed this evaluation to the stressful nature of the task. HA subjects who received failure feedback produced the largest increments in A-State while differences between HA and LA subjects were greater in the failure feedback condition.

In a similar study, McAdoo (1969) investigated the effects of levels of A-State on success, mild failure, and strong failure feedback on performance in a memory task. Results mirror Auerbach'S (1969) research where strong feedback increased A-State anxiety with HA subjects displaying greater increments than LA subjects. Mild failure feedback appeared to have little effect on LA subjects but produced large decrements in A-State for HA subjects with low confidence and large increments for HA subjects in A-State with high confidence.

Hodges and Felling (1970) noting that Spielberger (1966) proposed that state anxiety increases in situations involving failure or loss of self-esteem, hypothesized that high A-Trait subjects would indicate greater fear in such situations and not in situations involving physical pain or danger. The authors administered the STAI along with the Stressful Situation Questionnaire (SSQ) which describes 40 stressful situations; 228 undergraduates rated the situations which were later intercorrelated and factor analyzed revealing three factors to be associated with failure and the fourth involved pain and danger. In support of the hypothesis, the failure situations correlated significantly with trait anxiety but showed no relationship to the factor involving pain and physical danger.

Edsell (1976) investigated the combination of environmental noise and social interaction as simultaneous stressors effecting anxiety. Subjects were 48 men and women college students participating in the interactive game "Starpower" while exposed to three levels of increasingly more intense white noise. STAI A-State, administered

3 days prior to the game and after playing the game, was used as a subjective measure of anxiety. While relatively low levels of noise superimposed on the social interaction influenced the level of anxiety experienced, significantly stronger feelings of anxiety were experienced by groups in noisier environments ($p < .05$).

In a pilot study (Appendix C), this investigator examined the effectiveness of A-State in measuring stress level in a structured socially stressful situation. Subjects were five undergraduates who were administered the A-State scale 1 week prior to an analogue social situation where their task was to communicate to a female confederate in an attempt to make a favorable impression. Posttest results indicated significantly higher anxiety ($p < .04$) due to the interaction.

Using high school aged subjects at the Navy Medical Research Institute, Taylor, Wheeler, and Altman (1968) evaluated changes in anxiety of sailors confined in isolation for periods up to 8 days. Groups who had instructions to expect to be isolated up to 20 days but were aborted before it was completed experience more anxiety (as measured by A-State) than aborted groups expecting 4-days isolation. Groups who successfully completed the 20-day isolation reported more anxiety than those who successfully accomplished the short isolation experience.

Hall (1969) divided subjects (156 high school males) as to high- and low- STAI A-Trait in an effort to investigate the effects of anxiety on a programmed learning task. Subjects were randomly assigned to stress and nonstress instructional conditions and A-State

measures were obtained at various points during the learning task. Results indicate higher A-State scores were obtained on the more difficult materials than easier materials while the performance of high A-State subjects was inferior to the low A-State subjects. Contrary to the author's expectation, the nonstress instructions elicited higher levels of A-State than stressful instructions. Spielberger, Gorsuch, and Lushene (1970), reasoning that this study was consistent with prior research, suggest that Hall's subjects viewed the nonstressful situation more threatening than those of the stress condition.

Graham (1969) conducted a series of interviews with schizophrenic patients in an effort to determine if differences existed in anxiety level immediately following an interview. A series of pictures (TAT) of two people interacting was presented to one group (P group) while a second group (D group) was asked to respond to standardized verbal descriptions on these same pictures. As the author predicted, STAI A-State scores for the P group were significantly higher than those of the D group. Spielberger et al. (1970) states that, although the sample was small, the study indicates that STAI A-State may be useful for evaluating anxiety as they respond to TAT and Rorschach tests.

Parrino (1969), using as subjects snake-phobic psychiatric patients, investigated the effects of different kinds of pretherapy information on therapy. The patients attended nine sessions where in three they were confronted with a snake, three were pretherapy information sessions, and three therapy sessions. STAI scales were

given pre- and post-therapy and results indicated that A-State scores were significantly lower in posttherapy (42.32) than pretheraphy (51.72). In addition, A-Trait scores were unchanged as a result of the therapeutic intervention.

In summary, the studies received indicated that Spielberger's State-Trait Anxiety Inventory appears to be a viable research instrument. State anxiety was demonstrated to be sensitive to situational stress with various populations: college students (Auerbach, 1969; Appendix C; Edsell, 1976; Hodges, 1967; Hodges & Felling, 1970; Lamb, 1970; McAdoo, 1969; Sachs & Diesenhaus, 1969), adolescents (Hall, 1969; Taylor, Wheeler, & Altman, 1968), and patients (Graham, 1969; Parrino, 1969).

Literature Relevant to Heart Activity as a Measure of Anxiety

Patkai (1974) and Grossman (1973) report that physiological measurements have been widely used in stress research noting that heart rate is one of the most prominent as a measure of autonomic nervous system activity. As a psychophysiological measure, the monitoring of heart rate has been performed in natural settings (Greenfield & Sternbach, 1972), e.g., Roman, Older, and Jones (1967), Ira, Whalen, and Bogdanoff (1963), and Imhog (1969) in addition to structured settings (Borkovec, 1973; Borkovec & Glasgow, 1973; Borkovec, Stone, O'Brien, & Kaloupek, 1974; Glickson, Chevalier, Korchin, Basowitz, Sabshin, Hamber, & Grinker, 1957; Lamb, 1973; Lazarus, Opton, Nomikos, & Rankin, 1965; Newfeld, 1976). Greenfield and Sternbach (1972) wrote that a novel or rarely experienced

situation will frequently produce an increase in heart rate. If the event anticipated becomes routine, even when noxious, heart rate may fall (Deane, 1966). They go on to state Campos and Johnson (1966) and Obrist (1963) have observed that when the individual is personally involved or when performing mental work, heart rate will increase. When attention is directed to the environment without a sense of involvement, heart rate is likely to decrease. In subsequent paragraphs, social stress as measured by heart rate activity will be investigated.

An example of heart rate increase due to environmental involvement is observed in Hickman, Cargill, and Golden (1948). Using as subjects medical students, heart rate and cardiac output were measured prior to an oral examination and 1 month following. Both increased substantially. In another personally stressful situation, Malmo, Boag, and Smith (1957) demonstrated that neurotic subjects had heart rate increase after being criticized as compared to decreased heart rate when praised (Martin, 1961).

Lamb (1973) reported a study evaluating A-State anxiety responses in two stressful situations. Subjects were 210 students in a public speaking class who were differentiated into high (HA) and low (LA) anxiety groups by the Speech A-Trait Scale. Changes in the level of heart activity were examined as a function of Speech A-Trait and experimentally induced stress. As also observed with STAI A-State scores, heart activity was observed for both HA and LA to increase from the rest to the speech phase, decline in the postspeech phase, and increase during the phase where subjects had to blow up a balloon

until it burst. Changes in heart rate from the rest to the speech period for both HA and LA anxiety groups were significant at .001 level of confidence but did not differentiate HA and LA subjects. Heart activity of both groups was not significantly different from the rest to the postspeech phase suggesting that heart activity of HA and LA subjects returned to their initial levels recorded in the rest period. In the physical threat period (balloon phase), there was a significant main effect of experimental periods only ($p < .001$) after which heart rate returned to the rest period activity.

Borkovec, Wall, and Stone (1974), in an effort to assess the effects of physiological feedback during a structured speaking situation, exposed 60 speech anxious subjects to one of three feedback situations: tape recordings of a decrease, increase, and no change in heart rate. There were four dependent measures taken: self-reported anxiety. overt anxiety, tape recordings which were scored for speech disfluencies, and 10-second intervals of heart activity. None of the treatment groups were significantly different during the feedback phase as predicted. Also, as predicted, significantly lower self-report anxiety ($p < .02$) and overt anxiety signs ($p < .02$) were found in the posttest speech measures between the decreased and no-change groups. Heart rate activity between the speech and interaction phase was significant for all groups ($p < .001$). Heart rate was observed to habituate during each speech and over successive speeches. The authors state that initial exposure produced striking heart activity in the total group which was continued to be elicited over repeated exposures.

Borkovec, Stone, O'Brien and Kaloupek (1974), as previously discussed, exposed subjects to two brief interactions with female confederates; 10-second heart beats were taken from nine phases: just prior to and after the final instruction tape informing the subject that the confederate was about to enter, the first and last 10 seconds of initial confederate presence. moment when subject was instructed to begin interactions, the first 10 seconds of interaction, and 10 seconds at the end of each minute for 3 minutes. Subjects were discriminated as high- and low-anxiety by the Fear Survey Schedule. Results indicated significant main effects of phase ($p < .01$) and high anxiety group ($p < .05$). Heart activity generally accelerated in both groups prior to interaction and at all sampled phases high anxious subjects displayed greater arousal.

In a pilot study for the present research (Appendix C), this investigator examined the effects of stress in an analogue social situation on heart activity. Subjects (eight male sophomores) were confronted with the task of interacting with a female confederate in such a way as to make a favorable impression. The subject was told the male peer present in the room was rating him on social skills and the video equipment was recording facial expressions and verbalizations for further rating. Continuous data was recorded and analyzed on four points: (a) base rate established after 10 minutes of stimulus free time, (b) heart activity 2 minutes after instructions, (c) and (d) 10 seconds after interaction began and 10 seconds prior to completion. Results indicate heart activity is significantly effected by social stress as observed in significant

activity using a two-tailed *t* test from base to 10 seconds after interaction ($p < .000$), base to 10 seconds prior to completion ($p < .000$), 2 minutes after instruction to 10 seconds after interaction ($p < .002$), and 2 minutes after instruction to 10 minutes prior to completion ($p < .002$).

Chapter 3

Method

The methodology and procedures used in this investigation will be discussed in this chapter. This study focuses on six hypotheses investigating the association between the activity level and affect of early recollections and reaction to stress in an analogue social situation. The first hypothesis investigates the extent to which social interest in ERs correlates with the activity level and affect of ERs. The second and third hypotheses focus on the comparison of initial stress level between low social interest (LSI) and high social interest (HSI) groups. The relationship between LSI and HSI subjects in their coping capabilities comprises the fourth area of concern. The fifth and sixth areas investigate the relationship between HSI and LSI subjects in their responses to stress.

Subjects

The original sample consisted of 400 male undergraduate students at the College of William and Mary, Williamsburg, Virginia, who volunteered to complete the Early Recollections Questionnaire (ERQ) describing six memories. The questionnaires were then rated for activity and two groups of 15 subjects each were chosen to participate in the experimental situation. The active-positive group consisted of subjects who had three or more active-positive ERs, two of which were among the first three ERs reported. The passive-negative group consisted of subjects who had three or more

passive-negative ERs, two of which occurred in the first three ERs reported. Subjects were paid $1.00 to fill out the questionnaire and an additional $5.00 to participate in the experimental condition.

Description of Instruments

This section will focus on a description, validity, and reliability of the instruments used in the present study: the Early Recollections Questionnaire (Appendix A), the Early Recollections Rating Scale and the Active-Nonactive rating procedure (Appendix B), the State-Trait Anxiety Inventory, and the instrumentation measuring heart rate activity.

A revised Early Recollections Questionnaire (Rule, 1972) consists of a page of instructions and questionnaire eliciting six ERs. Specific guidelines in completing the questionnaire are presented: the importance of including a specific incident including details, emotions, seemingly insignificant events, reporting them in the order remembered as opposed to chronological order, the importance of recording only true recollections rather than reports, ERs occurring prior to the age of 8, and the request for six recollections. The request of supplemental information was included to gather further significant details such as age of occurrence, feeling tone, if other people were involved, and pleasantness-unpleasantness of the recollection.

The Early Recollections Rating Scale (Altman, 1973) consists of an instruction page and a rating scale form. The instruction page defines the nine continua constituting the rating form. The form is comprised of a bipolar scale rated on a 7-point semantic

differential scale with "4" indicating a neutral or average rating. The continua are separated into two divisions: behavior (1-4) and perception of the environment (5-9). The former reflects the behavior of the subject as indicated in the ER, while the latter reflects the manner in which the environment was subjectively perceived by the subject. The nine bipolar ratings consist of (a) withdrawn vs. gregarious; (b) passivity vs. activity; (c) aggression, hostility vs. benevolence, kindness; (d) mistreated vs. befriended, treated well; (e) threatening, frustrating vs. friendly, kind; (f) rejection vs. acceptance; (g) inferiority vs. self-confidence; (h) depressing vs. cheerful; and (i) dependence vs. independence.

Review of literature reveals that the Early Recollection Rating Scale has been utilized three times since its development (Altman, 1973; Eckstein, 1976; Quinn, 1973). Of these studies, only Altman (1973) published statistics. When comparing raters on each variable with the Pearson Product Moment correlation, Altman found median correlations ranging from .56 on two continua (gregarious vs. withdrawal, independence vs. dependence) to a high of .79 (befriended, treated well vs. mistreated). All correlations were determined to be significant at better than a .001 level.

In a pilot study to determine interrater reliability on the ERRS, Spearman correlation coefficients were used (Appendix C). Each rater was paired with each other rater on all variables. The mean correlation of ratings for the three raters on each variable is reported in Table 1. The reliability coefficients were judged to be acceptable so they were all retained and comprise the basis of

Table 1

Spearman Correlations for Social Interest Continuums

Continuum	r
1. Gregarious vs. withdrawal	.56*
2. Activity vs. passivity	.71*
3. Benevolence; kindness vs. aggression; hostility	.59*
4. Befriended; treated well vs. mistreated	.75*
5. Friendly; nurturing vs. threatening; frustrating	.77*
6. Acceptance vs. rejection	.64*
7. Self-confidence vs. inferiority	.60*
8. Cheerful vs. depressive	.74*
9. Independence vs. dependence	.59*

*$p < .001$

Hypothesis 1 of this investigation.

The third instrument to be described, the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970), is a self-report instrument composed of two separate scales: state anxiety (A-State) and trait anxiety (A-Trait). A-State, which may vary in intensity or fluctuate with time, is conceptualized as a transitory emotional state. This type of anxiety may be characterized by "subjective, consciously perceived feelings of tension and apprehension, and heightened autonomic nervous system activity [p. 3]." A-Trait anxiety is viewed as a relatively stable emotional characteristic which remains generally the same in intensity over time but which may vary between individuals. Both the STAI A-Trait and A-State scales consist of 20 items. Different items as well as different instructions are used for each scale. For the A-Trait scale, the subject is asked to indicate how he generally feels whereas A-State requires the subject to indicate how he feels at that particular moment. The scales are printed on opposite sides of a single test form. The State-Trait Anxiety Inventory was developed by selecting from published anxiety measures those items that could be employed for the measurement of A-State in addition to a set that provided the best measure for A-Trait. Normative data was established with 1,468 undergraduates at Florida State University, Gainesville, Florida, 377 high school juniors, 461 neuropsychiatric patients, 161 general medical and surgical patients, and 212 inmates.

Spielberger et al. (1970) reports test-retest reliability data obtained on six groups of undergraduate subjects retested 1 hour

after being exposed to one of three experimental conditions: a period of relaxation training, a difficult intelligence quotient (IQ) test, and a film depicting serious accidents. Test-retest correlations were reasonably high for A-Trait, ranging from .73 to .86 while, as expected, A-State scores were relatively low, ranging from .16 to .54 with a mean $\underline{r}$ of .32 for the six groups.

Such findings are in agreement with Joesting's (1975, 1976) findings on test-retest reliability in an academic setting. Using male and female undergraduates who were tested before and after classroom exams, significant differences between administrations were found with A-State ($\underline{p} < .01$) while A-Trait did not differ significantly. Moderate positive correlations were found between the two administrations. In a replication of this study, Joesting found similar results concluding that while under anxiety-provoking situations, such as an examination, State-Anxiety rises while Trait-Anxiety remains stable. Metzger (1976) gives additional support in research conditions similar to Joesting's. He found the test-retest reliability to be .97 for A-Trait and .45 for A-State.

Due to the transitory nature of anxiety states, Spielberger et al. (1970) computed alpha correlations for his normative samples. Reliability for A-State and A-Trait ranged from .83 to .92 which the authors interpreted as reasonably good internal consistency. Alpha coefficients are higher under stressed conditions as observed when administered to undergraduates after a difficult intelligence test (.92) and distressing film (.94). For the same subjects, the alpha reliability was .89 given after a period of relaxation

exercises.

Evidence of concurrent validity is observed where the STAI is correlated with the IPAT Anxiety Scale, Taylor Manifest Anxiety Scale (MAS), and the Affect Adjective Checklist (AACL). Correlations between the STAI, the IPAT, and the MAS are moderately high for college students (.75 and .80, respectively) and patients (.77 and .83, respectively). Correlations between the STAI and AACL were only moderatley correlated (Speilberger et al., 1970).

In examining the construct validity, Speilberger et al. (1970) administered A-State under two conditions: standard instructions (norm) and how they imagine feeling prior to a significant examination (exam). Mean score for A-State was considerabley higher in the exam condition than norm phase for both males and females. To further test this concept, four phases were tested: (a) norm condition, (b) testing after 10 minutes of relaxation exercise (relaxed condition), (c) exam condition, and (d) testing after watching a stressful movie (movie condition). A normal progression was observed with both males and females with means varying from 29.60 for females and 32.70 for males in the relaxed condition to 60.94 and 50.05 for females and males in the movie condition.

Metzger (1976) administered the STAI immediately after an hour examination (stress condition) and under conditions of no-stress. An A-State no-stress condition was found to be significantly lower than the stress condition ($p < .025$). No significant differences were found for A-Trait in either stress or no-stress phases. Similar discriminate validity has been found by Sachs and Diesenhaus (1969),

McAdoo (1969), Lamb (1970, 1976), and Edsell (1976).

The physiological dependent variable, heart rate, was recorded by a Physiograph Six, manufactured by the E & M Instrument Company, Incorporated; and heart rate was picked up by a Photoelectric Pulse Pick-up made by the Narco Bio-System, Incorporated. Data is continuous and recorded on graph paper. All instrumentation was located in an adjacent room to the laboratory, divided by a one-way observation mirror.

A review of the literature clearly demonstrates that heart rate is responsive to a variety of stressors. Patkai (1974) states that a rise in physiological activity and subjective feelings of distress are indicative of stress. Rather than a consistent response, the heart differentially reacts to various stimuli depending upon the individual's involvement with the environment (Greenfield & Sternbach, 1972; Lacey, Kagan, Lacey, & Moss, 1963). Speisman, Lazarus, Mordkoff, and Davidson (1964) note that "the same stimulus may be either a stressor or not, depending upon the nature of the cognitive appraisal the person makes regarding its significance to him [p. 367]." Lazarus (1966), Ax (1964), and Arnold (1960) would agree, noting the individual's appraised value of the stimulus as positive or negative, helpful or harmful, will dictate the quality of the emotion and the response to it.

Heart rate has been demonstrated to rise in situations where subjects viewed a noxious film (Lazarus, Speisman, & Mordkoff, 1963; Mordkoff, 1964), repeated digits backward from memory and were required to do math, arrange letters into meaningful words, and make

up sentences (Lacey et al., 1963). DiMascio, Boyd, & Greenblatt (1957) found a correlation of .69 between average heart rate and amount of tension during a psychological interview and a correlation of -.37 between heart rate and antagonism.

These statistics suggesting a rise in heart rate during stress tend to reflect results of studies where a social component was present: social interaction (Borkovec, Fleischmann, & Caputo, 1973; Borkovec, Stone, O'Brien, and Kaloupek, 1974; Campos & Johnson, 1966; Nowlin, Eisdorfer, Bogdonoff, & Nichols, 1968), public speaking (Borkovec, Stone, O'Brien, and Kaloupek, 1974; Lamb, 1976), in an interview (Mooney & Carlson, 1976), responding to the TAT (Weiner, Singer, & Reiser, 1962), oral examinations (Hickman, Cargill, & Golden, 1948), and subjects under criticism (Malmo, Boag, & Smith, 1957). Studies reflecting anger, pain, and fear are not as consistent. Generally, acceleration in heart rate is experienced with fear (Lewinsohn, 1956; Schacter, 1957), particularly with the threat of shock (Deane, 1961; Hodges & Spielberger, 1966; Lacey & Smith, 1954; Zeaman & Wegner, 1957). Heart rate tends to decelerate when pain is experienced (Deane; Notterman, Schoenfeld, & Bersh, 1952; Zeaman & Wegner) as well as when pain is observed (Birnbaum, 1964). In addition, deceleration has been demonstrated during anger (Ax, 1953), and during listening to a tape-recorded drama of a dying man and observing flashes of light to detect color (Lacey et al., 1963).

The fourth instrument to be discussed, the Active-Nonactive rating procedure, was adopted from Levy's (1965) and Lord's (1971) methods and combined by this investigator into a broader definition

for rater effectiveness. Early Recollections are rated active when the subject initiated the recalled event, or in a situation already defined by another, initiated a resolution. The ER may convey acting on one's own, initiating and carrying out an activity, and/or participating with others. An ER is rated nonactive when the situation is initiated by other persons or external circumstances and the subject merely responded, reacted, remained where he was, allowing others or circumstances to determine his fate. The ER may convey being the follower, the recipient, relying on others, and/or observer of other's activities.

Interrater reliability on Lord's (1971) and Levy's (1965) studies, plus a reliability study on a composite of their studies, will now be presented. Levy, using a combination of definitions and modes of operation, was able to attain a .001 significance level on the chi-square test with percentage of agreement between judges ranging from 69% to 78%. Lord and one other rater attained 83% agreement on an activity-passivity dimension using definitions to describe each. This researcher, using three raters, achieved a mean correlation of .79 significant at the .001 level of confidence using Spearman correlation coefficients (Appendix C).

Treatment of Subjects

Early recollections and a measure of A-State anxiety were collected from subjects selected for the investigation 2 weeks prior to the experiment. Upon arrival at the laboratory, the subject was seated in a recliner chair and the pulse pick-up attached to his left index finger. He was told that the experimenter had to calibrate the

instruments and to relax. After a 10-minute period, the subject was given the following instructions via intercom system by the investigator:

> The purpose of this task is to determine the range of acquired social skills obtained at each grade level in the university setting. Your ability, as assessed by your physiological responses, that is, heart rate, will be compared to others on various academic levels. During the experiment a female and male rater will enter the room. Your task is to attempt to make a favorable impression upon the woman. Both the male and female will rate you on your ability to effectively demonstrate social skills conducive to producing a favorable impression. In addition, a video camera will record your verbal and facial responses which will be rated later by a panel of judges consisting of psychology instructors. In one minute the male and female rater will enter, do not interact until instructed.

The male confederate sat at a 90-degree angle to the subject while the female confederate sat across from the subject. Behind the female confederate was a table on which sat a video camera which remained hidden behind a screen until removed by the male confederate upon entering. The male confederate was instructed not to talk but rather attend to a "rating scale" attached to a clipboard. The female confederate was instructed to be moderately positive with all subjects but to let the burden of the conversation fall on the subject. Communication on her part was limited to answering questions in

concise, quick responses limited to 5 seconds or less and, if silence persisted for more than 20 seconds, to initiate a topic. The confederates were graduate (female) and undergraduate (male) students. Both were casually dressed, attractive, socially competent individuals. Neither were aware of the ER ratings of the subject.

The interaction was maintained for 3 minutes after which the investigator announced the end of the interaction period and excused the confederates. Prior to leaving, the male confederate asked the subject to complete a STAI A-State Scale. When the subject was observed to have completed the form as viewed through a one-way mirror, the investigator and confederates reentered and debriefed the subject. At that time, he was assured that no ratings had been performed and the camera was inoperative. The nature of the experiment was explained and he was asked not to discuss what had occurred after which he was paid and dismissed.

Collection of Data Procedure

Data collected for this investigation consisted of pre- and post-measurements for the STAI A-State (trait anxiety was not employed in the investigation), while base, stress, and postmeasurements were collected for heart rate. Both ERs and pretest A-State data were collected about 2 weeks prior to the experiment. Heart rate was collected as continuous data, with pretest or baseline activity recorded during the last 10 seconds of the 10-minute "calibrating" period. Stress period data was assessed by counting heart beats at the beginning of each 30-second interval throughout the interaction period for a total of seven measurements. Posttest data for heart

rate was assessed during the last 10 seconds of the interaction phase.

Early recollections were rated on the active-nonactive and social interest continua by three raters who had completed graduate work, including a course in Adlerian practice. Training of the raters was performed by the investigator, and consisted of 8 hours of instruction and practice. The global social interest score obtained from the Early Recollection Rating Scale is the total of means for all nine continua. Pleasantness vs. unpleasantness of ERs serves as the affective variable and was determined by the individual's subjective evaluation of the incident portrayed in the ER.

For the investigation, six memories were collected from each of 400 subjects for purposes of selecting and classifying 30 subjects to participate in the study. The literature indicates that the unity and pattern of one's life plan may be interpreted from as few as three memories (Nikelly, 1976; Rule, 1978). This investigation recognized the trend established in the first three reported memories as indicative of the group in which the subject was to be placed. To be selected as a participant in the investigation, a minimum of one of the remaining three ERs had to reflect the established trend.

Experimental Design

The design of this investigation will be a one-way factorial procedure. Subjects will be divided into two groups, representing the independent factors (active-positive and passive-negative) and will be observed during three phases: baseline, stress, and post-experiment. The dependent measures will be STAI A-State scores and variation in heart rate.

Statistical Treatment

Statistical procedures used are one-way factorial analyses of covariance covaried for baseline heart rate and pre-State Anxiety scores. The analysis of covariance is utilized with Hypotheses 4, 5, and 6, i.e., those pertaining to stress and postmeasurements. The *t* test is used to investigate differences in groups as postulated in Hypotheses 2 and 3, applicable to base measures, and Hypothesis 1, assessing social interest ratings. The acceptance level for all hypotheses is the .05 level of significance. The Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) subprogram ANOVA was utilized to complete the statistical analysis. Interjudge reliability was assessed with Spearman correlation coefficients through the NONPAR CORR subprogram of the SPSS.

Chapter 4

Findings

The present investigation was designed to study areas focusing on the relationship between early memories and other specified variables. This chapter is divided into sections pertaining to each of the six hypothesis. Each of the operational hypothesis will be restated and the results of data analysis reported following the relevant hypothesis.

Hypothesis 1

The first operational hypothesis states: Subjects with active-positive ERs will rate significantly higher on a social interest ER scale than subjects with passive-negative ERs. The t test revealed a significant difference between active-positive and passive-negative groups on the ERRS. A value of 6.97 ($p < .000$) was found for cumulative scores on the first three memories and a value of 3.47 ($p < .001$) for the second three memories. The t value for the Global score of all memories was 6.68, significant at the .000 level. This data is provided in Table 2.

Hypothesis 2

The second operational hypothesis states: There is no difference in state anxiety as measured by the State-Trait Anxiety Inventory between subjects with active-positive ERs and subjects with passive-negative ERs in the preexperimental phase. T test between active-positive and passive-negative subjects showed no significant difference

Table 2

Results of *t* Test between Active-Positive and Passive-Negative Subjects and Their Ratings on the Early Recollection Rating Scale

Early recollections	Degrees of freedom	*t* value
First three reported	88	6.97**
Second three reported	88	3.47*
Global score (all reported	178	6.68**

*$p < .001$

**$p < .000$

between groups on overall state anxiety score on the State-Trait Anxiety Inventory. Therefore, the second hypothesis is accepted.

Hypothesis 3

The third operational hypothesis states: There is no difference in baseline (resting phase) heart rate between active-positive and passive-negative groups. T test indicates no significant difference between groups in resting phase heart rate. The third hypothesis is therefore accepted.

Hypothesis 4

The fourth operational hypothesis states: During an analogue social situation, the active-positive subjects will show a significantly greater mean decrease in heart rate over time (180 seconds) than passive-negative subjects. A one-way analysis of covariance controlling for resting heart rate, with mean heart rate as the dependent variable, was performed between the active-positive and passive-negative groups. No significant differences were found (see Table 3). To be significant at the .05 level, an F value of 3.354 is required. A graphic presentation of the change in mean heart rate over time for each group is plotted in Figure 1. It can be seen that mean scores of subjects representative of each group closely replicated one another. The only notable exception was at the 120 point where, although not significant, a divergence of heart rate in the predicted direction can be seen ($F = 1.681$), albeit a trend does not materialize. Rather, the groups reemerge and then quite nearly reverse directions in the final period of the interaction sequence.

Table 3

Differences in Heart Rate between Subjects with Active-Positive and Passive-Negative Early Recollections

Interaction periods (In seconds)	F^a
Begin 10	.180
30 to 40	.000
60 to 70	.113
90 to 100	.296
120 to 130	1.681
150 to 160	.047
Ending 10	.036

[a] $F = 3.354$ for $p < .05$

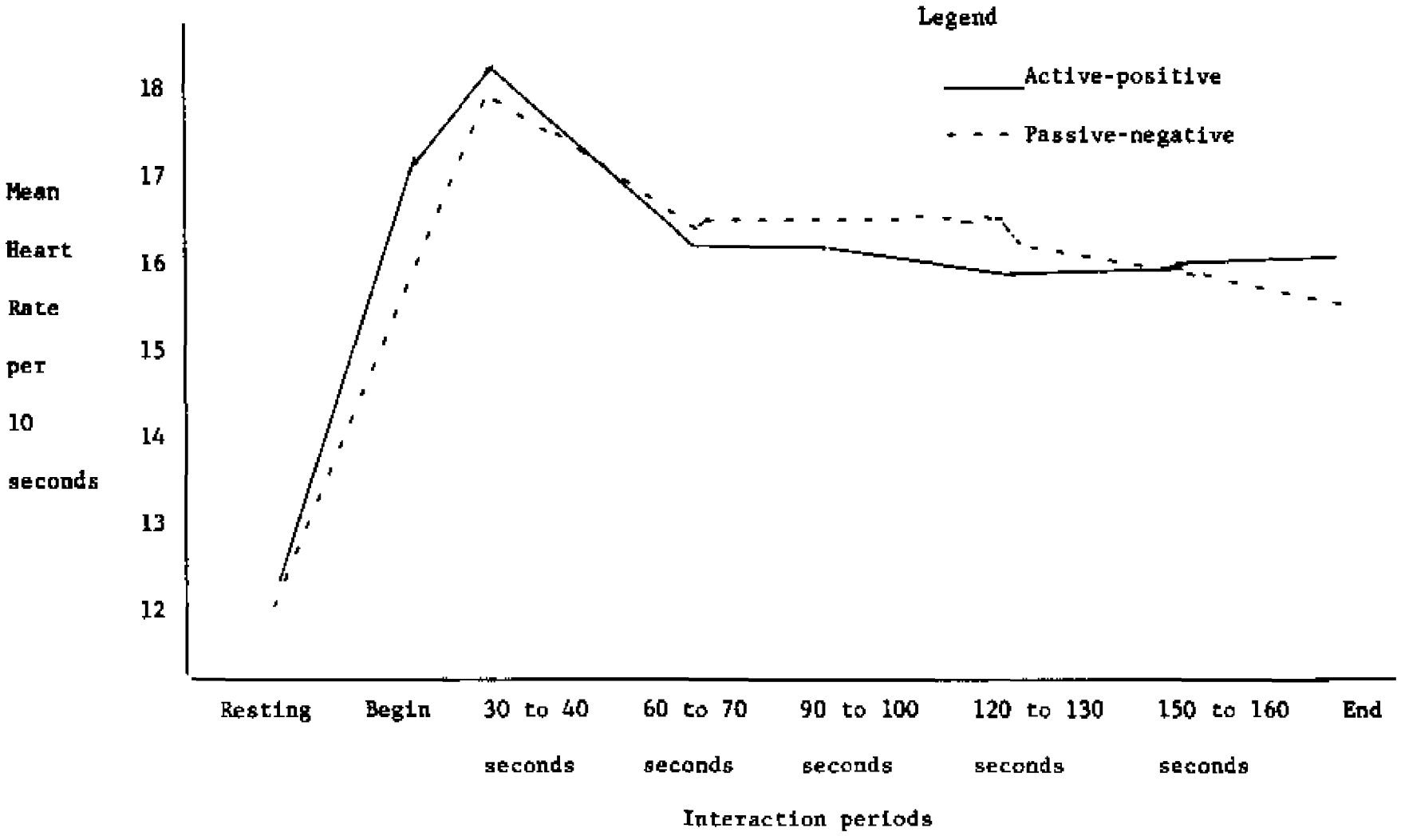


Figure 1. Mean heart rate per 10 seconds during stress period

Hypothesis 5

The fifth operational hypothesis states: Subjects with active-positive ERs will record significantly lower scores as measured by the State-Trait Anxiety Inventory than subjects with passive-negative ERs at the conclusion of an analogue social situation. Analysis of covariance covarying for the prestress anxiety rating determined by responses on the State-Trait Anxiety Scale, showed no significant differences between groups on postexperimental anxiety scores. Both groups showed an increase in anxiety rating following the experimental condition (see Figure 2). Therefore the fifth hypothesis is rejected.

Hypothesis 6

The sixth operational hypothesis states: Subjects with active-positive ERs will record significantly lower heart rate at the conclusion of an analogue social situation than subjects with passive-negative ERs. Analysis of covariance controlling for the resting heart rate showed no significant difference between groups as to mean heart rate at the conclusion of the experimental condition. As previously noted, there was a divergence in the direction opposite of that predicted; that is, mean heart rate of the passive-negative group was somewhat lower than that of the active-positive group.

Summary

In summary, significant differences were found between active-positive and passive-negative groups as rated on the ERRS. Additionally, support was found for hypotheses predicting no significant differences between active-positive and passive-negative groups as to resting heart rate and preexperimental state anxiety. Data did

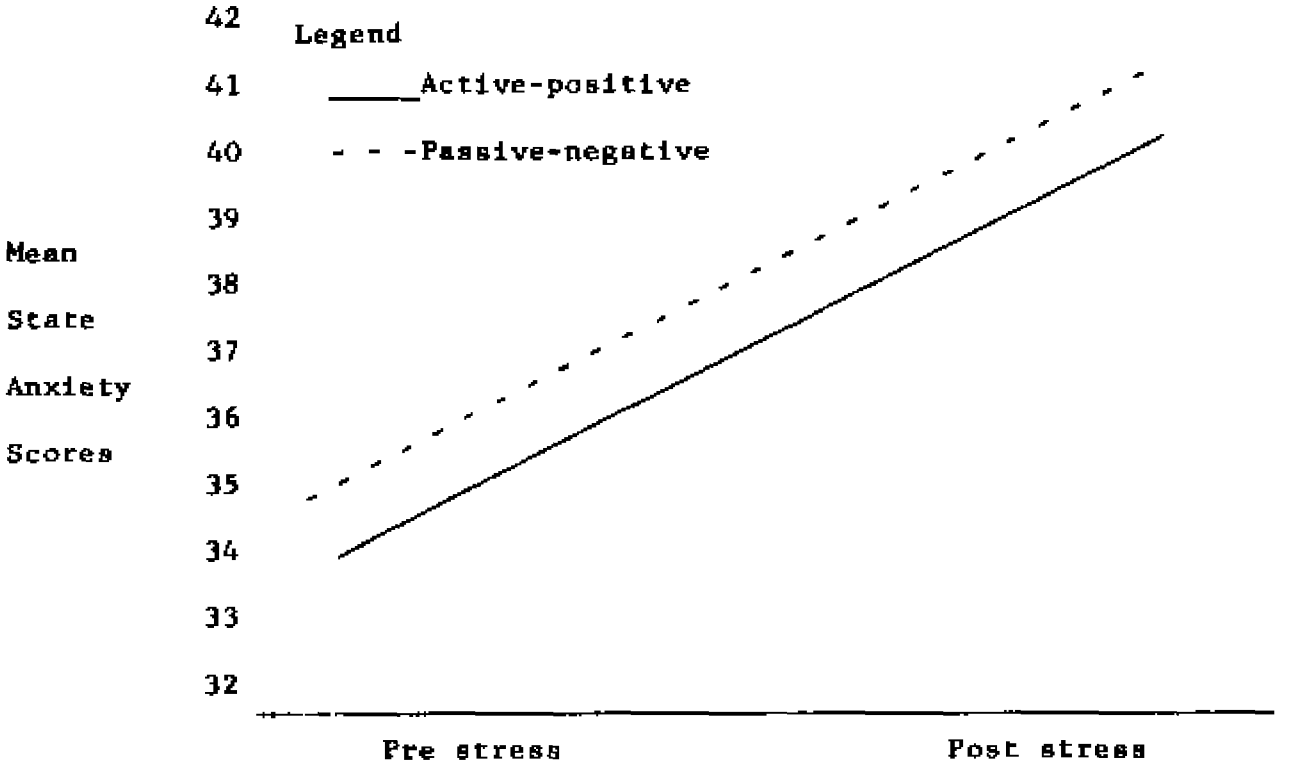


Figure 2. Graph of mean state anxiety scale scores.

not support the hypotheses predicting differences between the investigated groups on their reactions to a socially stressful situation.

Chapter 5

Conclusions, Discussion, Limitations, Recommendations

Conclusions

This investigation attempted to answer two basic questions:

1. Does the level of activity coupled with affect observed in a set of early recollections have predictive value in understanding reactions to social stress?

2. Is it feasible to utilize these variables as a substitute for the Altman Early Recollections Rating Scale as a measure of social interest?

The conclusions will be discussed in the subsequent paragraphs with respect to the six hypotheses examined to investigate these questions.

The results of the statistical analysis lend support for Hypothesis 1 which predicted that active-positive subjects would rate higher on the ERRS than passive-negative subjects. The data showed a strong relationship between subjects with active-positive ERs and high ratings on the ERRS and, conversely, low rating on that scale and subjects with passive-negative ERs. From the data, it appears that the active-positive and passive-negative variables are reliable indicators of scores on the ERRS. In addition, the data suggests that the active-positive and passive-negative variables are equally

valid as the cumulative score obtained on nine variables of the ERRS. The results allow acceptance of the hypothesis.

Hypotheses 2 and 3, which predicted that subjects in the active-positive and passive-negative groups would respond similarly when not under stress, was supported by the data. State anxiety measured 2 weeks prior to participation in the investigation was similar for both groups. Heart rate, as recorded after 10 minutes of relaxation prior to the experimental phase, was similar for both groups. These results suggest that active-positive and passive-negative variables, as observed in ERs, do not differentiate individuals in nonstress situations. If the experimental situation is a valid indicator of stress, then the data partially supports Adler's (in Ansbacher & Ansbacher, 1956) assertion that life style may best be observed under periods of stress but difficult to detect when the style of life is functioning well.

Statistical analysis did not support Hypothesis 4 which predicted that active-positive subjects would demonstrate a greater decrease in heart rate over time than passive-negative subjects. The data failed to show a relationship between the investigated groups and stress experienced over the 180-second interaction phase. Heart rate was examined at 30-second intervals with the expectation that subjects in the active-positive mode would experience a more rapid decrease in heart rate than those in the passive-negative mode. An assumption was made that such a trend would indicate a greater coping capability. Unexpectedly, results show a high degree of similarity in mean heart rate between the two groups at each stipulated point.

At two points in the final phases of interaction, two divergences, albeit statistically insignificant, were noted. The first, at the 120-second point, was in the predicted direction ($F = 1.68$) with active-positive subjects showing a mean decrease in heart rate below that of the passive-negative subjects. Conversely, in the final 10 seconds of interaction, a reverse occurred with passive-negative subjects decreasing heart rate below those in the active-positive category. In both instances, the divergencies can be attributed to chance. Results of analysis necessitate a rejection of the hypothesis.

Results of statistical analysis did not lend support for Hypotheses 5 and 6. Based on the lack of significant difference in the experimental groups, the conclusion can be made that rating ERs on the active-positive and passive-negative dimensions would not appear to be useful in predicting reactions to social stress. Contrary to the trend predicted by Hypothesis 5, both groups showed parallel increases in state anxiety following the experimental condition; therefore, the hypothesis was rejected.

Hypothesis 6 predicted that mean heart rate for active-positive subjects would be lower than passive-negative subjects at the conclusion of the experimental phase. Results indicated a non-significant reverse relation with active-positive subjects responding with a higher heart rate than the passive-negative group. The divergence in mean heart rate was not significant and can be attributed to chance. Results of the analysis of data dictate rejection of both Hypotheses 5 and 6, that ERs rated on the active-positive, passive-negative dimensions have no predictive value as to

the amount of stress as measured by change in heart rate and state anxiety experienced in an analogue social situation.

Discussion

As stated in the introduction, the purpose of this study was to investigate whether or not ERs may be used as a projective technique in predicting an individual's response to a socially stressful situation. This was done by monitoring heart rate and recording self-report anxiety; the results, generally, were unsuccessful. The seven possible explanations for failure to find significant differences in individuals on the dimensions investigated will be discussed.

The first explanation lies in the possibility that human beings cannot be considered as types because each person has an individual style of life. Adler (in Ansbacher & Ansbacher, 1956), when addressing the heuristic nature of types, stated:

> People who take types and classification seriously do not see how, once a person is put in a pigeonhole, he can be put into any other classification. . . . The classification by types can thus be a source of confusion if we do not realize that types are merely convenient abstractions [p. 167].

It becomes impossible, or at best difficult, to typify or classify the human being for each individual develops his own meaning of, or attitude toward, what he considers successful compensation, and as a result,

> each individual must be studied in the light of his own peculiar development . . . extensive[ly] reviewing all of

> facets. Yet too often psychologists are tempted away from this recognition to take the easier but unfruitful roads of classification. That is a temptation to which, in practical work, we must never yield [p. 167].

If Adler's (in Ansbacher & Ansbacher, 1956) assertion can be accepted, then the present investigation well reflects the difficulty of differentiating and dichotomizing individuals into groups by merely examining a few variables which may be indicative of personality development. Rather, only by extensively reviewing all facets can the individual be understood; and, even then, classification might be impossible or difficult to achieve.

A second explanation closely reflects Adler's (in Ansbacher & Ansbacher, 1956) warning that individuals develop life styles and behavior patterns in an effort to overcompensate for insecure attitudes or expectations. If this explanation is accepted, then those subjects who produce passive-negative memories may have developed the attitude that "life is unpleasant when I take a passive stance" and as a result may have effectively compensated. To emphasize this distinction in addition to illustrating complexities encountered when making behavioral inferences, Mosak's (1958) passage serves as a pertinent reminder:

> In interpreting early recollections it should be understood that what is elicited are the individual's attitudes and not a mere description of his overt behavior. Although these attitudes are predominately unconscious perceptions of the environment and the individual's role in the world, the

individual nevertheless operates in accordance with his attitudinal frame of reference. The recollections describe a modus vivendi rather than a modus operandi. The characteristic outlook rather than the characteristic behavior is portrayed. In the following recollections, among other things, the subject characterizes life as dangerous.

ER--Another child was riding on my bike. He fell off on some glass, cut his arm and had to be taken to the hosptial.

ER--A boy fell off the slide in the school yard. They took him into the school and waited for the doctor to come.

Such a person, behaviorally, may see danger where none exists. He may exaggerate the dangers of life. He may retreat from these perceived dangers with anxious or phobic behavior. Or he may call upon certain defense mechanisms to cope with the omnipresent threat. In the compulsive individual, for example, one observes reliance upon ritual and feelings of ommipotence and the necessity to control as response to this danger. Many compulsives are preoccupied with death because this is the greatest threat--the one force which cannot be controlled. Hypochondriacs may exaggerate each body symptom as expressing their conviction that life is fraught with danger. Other individuals may develop into towers of strength or become dependent upon or identify with "strong" people or groups in order to minimize the dangers of life. Still others may actually court or provoke personal disaster in order to confirm their basic attitude. Some

> flirt with danger in order to prove that they possess a charmed life. While these reactions do not exhaust the repertoire available to people who feel that life is dangerous, they do serve to exemplify the variety of reactions which are possible within a single dimension of an individual's perceptual frame of reference [pp. 6-7].

Third, the College of William and Mary, where the subjects were selected for the investigation, matriculates students who have demonstrated a history of high achievement. One might assume that such achievement requires a certain degree of activity indicating a possible compensatory attitude for those subjects whose ERs were of a negative-passive nature. Thus, the homogeneous grouping representative of the selected sample may well have influenced the overall responses observed.

Fourth, the subject's subjectively felt affective ER state may have been influenced by what "ought" to be, i.e., there might be a descrepancy between the stereotyped view of an incident as opposed to the Adlerian interpretation. For example, Adlerians maintain that dethronement, that is, birth of a sibling, is a disconcerting experience. However, at a conscious level, the individual may view the occurrence as positive due to familial expectations. Using the subject's generalized impressions may have biased the selection which resulted in the findings being more randomized than predicted.

A fifth consideration is the actual design of the stress phase of the investigation. As previously noted, the female confederate was instructed to respond no longer than 5 seconds to the

subject's questions and to initiate interaction only after 20 seconds of silence. Such an artificial limitation on the interaction segment may be contrary to general expectations for subjects, particularly those who generally portray social competence. As can be observed in Figure 2, a trend in the predicted direction begins to appear at the 60-second point and is maintained through the 130-second interval. This emerging trend is then reversed with heart rate for the active-positive subjects rising above the heart rate of the passive-negative group. It is possible that the active-positive subjects realistically recognized the lack of reinforcement from the female confederate, and, if so, then one of two possibilities may account for the increased heart rate. First, these subjects may have responded defensively, perceiving the situation as atypical and threatening. Second, and consistent with the theory, the rise in heart rate may indicate increased activity in an effort to overcome the lack of experienced reinforcement. Conversely, a drop in heart rate for the passive-negative group might indicate a resignation to the unpleasantness originally expected. Under these conditions, a longer interaction period may have been desirable if differentiation was to occur.

Sixth, the criterion for inclusion in the active-positive or passive-negative group may not have been stringent enough to differentiate between groups. As Adler (in Ansbacher & Ansbacher, 1956) pointed out, it is a difficult task to categorize individuals and perhaps more evidence of an individual's orientation should be required before he is classified into a group. This could be done in several ways. First, either a majority (four or more) or all six of

the collected memories might be required to fall into a particular category for an individual to meet the criterion for inclusion. Such a prerequisite would ensure that the subjects would be highly differentiated. A second alternative would be to require a larger number of ERs which support the established orientation. The researcher might elicit 10 to 12 ERs from each subject, and require that a majority of six consistently reflect a particular dimension, and that the remaining ERs be supportive of the trend.

Finally, using volunteers as subjects may have resulted in a self-selection bias. That is, subjects volunteering may have felt more confident and adept at handling various situations as compared to those who elected not to participate. As a result, subjects may have more closely approximated one another in their confidence in responding to and attitude toward the experimental situation.

Limits of the Study

This study was designed to investigate the utility of ERs to differentiate individuals as to their ability to respond to or cope with a structured socially stressful situation. The following limitations to this investigation are applicable:

1. Due to the nature of the study, only male subjects were chosen.

2. The subjects chosen for inclusion in the study were undergraduate students.

3. Only students who volunteered to participate were chosen.

4. Due to the universality of early recollections, this study did not control for age, experience, or socioeconomic level.

5. Only white males were used as subjects since Caucasian female confederates were utilized who may or may not have produced comparable stress in the Black male.

6. Only those subjects rated on the upper- and lower-levels of the research continuum were included in the study.

7. This study was based on a sample of subjects from one university in Virginia, and as such, findings should be applied with caution to other populations.

Recommendations

The foregoing conclusions and discussion give rise to the following recommendations for further research:

1. Subjects could be selected on the basis of extreme Global scores acquired on the Altman ER scale for social interest. To do so would provide a selection of highly differentiated subjects based on nine variables as opposed to the two used in this investigation.

2. A less contrived and more realistic social situation might be pursued in future research using a confederate who liberally offers social reinforcement. The experienced reinforcement could result in a more accurate perception during the interaction sequence. It is suspected that stress would be reduced considerably as a result.

3. Rather than using an analogue social situation, a representative sample of each of the four dimensions (active-positive, active-negative, passive-positive, passive-negative) could be tested with standardized tests for specific personality traits, e.g., internal-external, introversion-extroversion, self-actualization, etc. Another approach might be to administer the same tests to subjects

dichotomized on any of the nine variables of the ERRS. By utilizing standardized testing, a clearer understanding of the validity of such scales as the ERRS and projective usefulness of ERs might be established.

4. Another means to establish possible avenues of ER analysis might be to use multidimensional scaling. With such statistics, one might discriminate further the usefulness of the various continua thus providing implications for future research.

5. Gal and Lazarus (1975) suggest that when hormonal reactions to stress are observed as reflecting emotional arousal, then the duration rather than magnitude should be considered. Continued heart rate recording after the stress period might be analyzed for prolonged reaction indicating more intense stress.

6. In future studies, a heterogenous grouping of subjects may provide a varied attitudinal frame of reference conducive to significant results. As such, the population would have a variety of orientations from which to draw, providing a less biased sample.

7. A more imaginative and less systematic system of rating the level of activity and determining the pleasantness of memories could be developed to prevent conflicting ratings. By allowing a more clinical interpretation while retaining rater reliability, one might provide the flexibility needed in judging attitudinal outlook and preventing improper ratings.

8. In view of previous research (Chance, 1957; Purcell, 1952) affect in ERs may be instrumental in differentiating subjects as to secure and insecure feelings. Subjects reporting all pleasant ERs

compared to those reporting all unpleasant ERs may differ in their expectation of environmental responses and, therefore, differentially react to social stress.

9. The criterion for selection may be raised to require a majority of all six memories to be consistent with either the active-positive or passive-negative dimensions. An alternative would be to increase the number of elicited ERs (10 to 12) and require that the additional ones be supportive of the orientation established by the majority in the first six reported memories.

10. The guidelines for rating ERs in this study may have been too inflexible. Raters were required to apply, systematically, preselected rules which were unable to account for contradictory memories. Therefore, memories suggesting high social interest but not active-positive may have been rated passive-negative by the raters. An example follows:

ER--My first grade teacher harshly and unjustly accused another pupil, publicly, of a misdeed. I was shocked that anyone could treat another in such a manner.

Feeling experienced: anger toward the teacher, sympathy for the student.

Rated: very unpleasant experience.

Such a memory reflects a high degree of social interest and, while not active, should not be included in the passive-negative category. To prevent such misrating, future rating criteria might be developed to compensate for ER inconsistencies. A means to accomplish this objective might be to tease out a third component of social interest

which would detect these discrepancies.

11. In future studies, activity might be quantified so that subjects rated high on this variable could be selected out for inclusion in the investigation. To do so would provide a selection of highly differentiated subjects.

APPENDIX

Appendix A

The Early Recollection Questionnaire

The purpose of this questionnaire is to find out what you can recall as your earliest childhood memories. The responses are to be used for research purposes and will be treated in a professional, confidential manner. Please keep the following points in mind:

*The early memory (recollection) must be specific incident, event, occurrence, or happening that you can remember. Early memories which describe incidents that occurred over and over again (example: "We used to do such and such," or "I did this many times") are not true early recollections and consequently should not be written down.

*Write down any early recollections that comes to your mind, even if you are not sure the incident actually occurred.

*Report any specific recollection that you think of, regardless of how insignificant it may seem to you, and be complete.

*Write down the recollections in the order that you remember them, even if you are not sure which ones really occurred in their true chronological order; rather, in the order that you remember them.

*Write down only those recollections which you think occurred approximately before the age of six (6).

*Report six (6) early recollections.

*Please turn to next page and start.

Description of Your Earliest Recollection

(Please indicate all details)

1. Approximate age at which incident in early recollection occurred:

2. Describe how you were feeling (i.e., your emotions) during the incident:

3. Were any other people there: If so, who?

4. What is the clearest, most vivid part of the recollection for you?

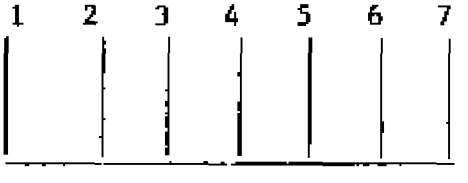
5. What happened right afterward?

6. How were you feeling right afterward?

7. (If appropriate) What was your purpose for behaving like that?

8. On a seven (7) point scale, with four (4) being the mid-point, i.e., impossible to decide, rate the following question. Remember, avoid the midpoint if at all possible; that is, give a rating of 3 or 5 for slight degrees. Circle the appropriate number.

a. At the time of the incident, was this a pleasant or unpleasant recollection:



Appendix B

EARLY RECOLLECTIONS RATING SCALE

Instructions to Raters

The Early Recollections Rating Scale (ERRS) is an instrument for rating nine different attitudes detected in memories of early childhood, each on a bi-polar scale broken into seven divisions. A check in one of the boxes 1-3 indicates a rating more in agreement with the leftmost pole (negative description term), with 1 being the strongest agreement. A check in block 5-7 represents a positive rating, with 7 being the strongest. Raters should place a mark in only one box for each of the nine scales. A rating in box four indicates "average" or "neutral" and should be used if any category is judged not present in a given ER. (A separate rating sheet is required for each ER.) Further explanation of attitude categories follows:

Behavior

1. Withdrawn--shy, lonely, avoids conflict by withdrawing from people.

   Gregarious--sociable, congenial, approaches people.

2. Passivity--person relies on others or is passive.

   Activity--person is active in his behavior.

3. Aggression, hostility--aggression or hostility may be expressed openly or by devious methods or by passive resistance.

   Benevolence, kindness--treats objects or others in benevolent or kind manner.

4. Mistreated--person relating ER is mistreated.

   Befriended, treated well--person giving ER is treated well by others.

Perception of the Environment

5. Threatening, frustrating--sees environment as physically or emotionally threatening or is denied wants by the environment.

   Friendly, nurturing--sees the environment as friendly or helpful.

6. Rejection--feels rejected by others or animal.

   Acceptance--feels accepted by others or animal.

7. Inferiority--feels weak, helpless.

   Self-confident--feels confidence in self.

8. Depressing--objects or people are seen as distant, sad, blank.

   Cheerful--objects or people are seen as pleasant, happy.

9. Dependence--relies on others for help or approval

   Independence--being able to stand on one's own feet, feeling okay without relying on others.

ACTIVITY-NONACTIVITY DEFINITIONS

The following are definitions to be applied to each ER. The same criteria as observed in the ERRS should be followed in rating on the activity-nonactivity dimension.

Active ER--subject initiated the recalled event, or in a situation already defined by another, initiated a resolution. The ER may convey acting on one's own, initiating and carrying out an activity, and/or participating with others.

Nonactive ER--If the situation is initiated by other persons or external circumstances and subject merely responded, reacted, remained where he was, allowing others or circumstances to determine his fate. The ER may convey being the follower. The recipient, relying on others, and/or observer of other's activities.

EARLY RECOLLECTION RATING SCALE

RATER NUMBER _____ ER NUMBER _____

Active	1	2	3	4	5	6	7	Inactive

BEHAVIOR

	1	2	3	4	5	6	7	
Withdrawal								Gregarious
Passivity								Activity
Aggression Hostility								Benevolence kindness
Mistreated								Befriended treated well

PERCEPTION OF THE ENVIRONMENT

	1	2	3	4	5	6	7	
Threatening frustrating								Friendly nurturing
Rejection								Acceptance
Inferiority								Self-confidence
Depressing								Cheerful
Dependence								Independence

Appendix C

Pilot Studies

Pilot 1

Purpose

The purpose of the following pilot is threefold: (a) to determine if the selected analogue situation would be effective in producing sufficient stress, (b) to establish the phase in which the base rate would be determined, (c) to increase the investigator's experience with the procedure and equipment.

Method

Subjects: 8 paid male sophomores represented the sample. All were residents of the French and German language houses at the College of William and Mary. Each were paid $5.00 for their participation.

Measures: Early recollections and STAI A-State scores were collected 1 week prior to the experiment. Heart rate was recorded by an E & M Instrument Company, Inc., Physiograph Six and heart rate was established by a Narco Bio-System, Inc., Photoelectric Pulse Pick-Up.

Treatment: Subjects were exposed to 8 situational phases--(a) a 10 minute "calibrating" period establishing the first base rate, (b) instruction period, (c) a 2 minute anticipation phase establishing the second base rate, (d) entrance of the confederates and 1 minute anticipatory period before interaction, (e, f, g) first, second, and third minute of interaction, (h) post period where

subjects completed a STAI A-State Questionnaire. Subjects were told that the experiment was to determine social skill levels for various academic levels in the university setting. Their task was to relate favorably with the female confederate who, with the observing male confederate, would be rating their performance. In addition, the subject was told that the video camera in the room was recording verbal and facial expressions which were to be rated later by psychologically sophisticated raters.

Experimental Design

A base-, stress-, and post-analysis was used in this study. Pre- and post-STAI A-State scores were taken while continuous heart rate data established the base-, stress-, post-measures.

Results

Analysis of data revealed the following:

1. Heart rate, using the last 10 seconds of the "calibrating" period, was significantly higher than either the first or last minute of interaction ($p < .000$).

2. Heart rate, using the last 10 seconds of the 2-minute anticipatory phase, was significantly higher than the first minute of interaction ($p < .002$) and the calibrating base period was significantly higher than the 2-minute anticipatory base period ($p < .002$).

3. Postexperimental A-State measurement on five subjects (three lost due to improper test administration) was significantly higher than pretest measures ($p < .044$).

Discussion

After viewing the above results, the examiner feels confident that the analogue social situation produces sufficient

stress for effectively testing the hypothesis in the main study. In addition, heart rate and A-State measures differentiate various phases as necessary. Resting base rate is viewed as the more desirable measure.

Pilot II

Purpose

The purpose of this pilot is twofold: (a) to determine if raters can differentiate between active and nonactive early recollections, (b) to determine if raters can consistently agree on the rating of nine social interest variables as observed in early recollections.

Method

Subjects: 20 graduate volunteers who supplied 3 ERs in response to the Early Recollections Questionnaire.

Raters: 3 individuals who had completed graduate study in rehabilitation counseling in addition to having previously taken a course in Adlerian practice. The raters were trained concurrently by the investigator for a total of 5.5 hours. Within the following week the raters scored 60 ERs using the ERRS.

Results

Correlations were determined by Spearman Correlations Coefficients. Correlations between judges on the active-nonactive variable were: J_1 with J_2, .8568; J_1 with J_3, .7793; and J_2 with J_3, .7380. Table 4 lists variables and correlations between each of the pair of judges. All correlations are significant at the .001 level and therefore judged as adequate for this investigation.

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Table 4

Results of Pilot Study II

Continuum	J_1 with J_2	J_1 with J_3	J_2 with J_3
1. Gregarious vs. withdrawal	.5812	.5738	.5380
2. Activity vs. passivity	.7895	.7842	.7201
3. Benevolence; kindness vs. aggression; hostility	.5448	.6503	.5961
4. Befriended; treated well vs. mistreated	.8037	.7534	.6837
5. Friendly; nurturing vs. threatening; frustrating	.7754	.7773	.7522
6. Acceptance vs. rejection	.8069	.5623	.5396
7. Self-confidence vs. inferiority	.8258	.5556	.4228
8. Cheerful vs. depressing	.7969	.7635	.6704
9. Independence vs. dependence	.7380	.6565	.3881

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ABSTRACT

THE USE OF SOCIAL INTEREST, ACTIVITY AND AFFECT AS REFLECTED IN EARLY RECOLLECTIONS AS PREDICTORS OF STRESS IN AN ANALOGUE SOCIAL SITUATION

Michael D. Traver, Ed.D.

Charles O. Matthews, Ph.D., Chairman
The College of Willian and Mary In Virginia

This study focused on six hypotheses investigating the association between the activity level and affect of early recollections (ER) and reaction to stress in an analogue social situation. The first hypothesis investigated the extent to which social interest in ERs correlates with the activity level and affect of ERs. The second and third focused on the comparison of initial stress levels between low social interest (LSI) and high social interest (HSI) groups. The relationship between LSI and HSI subjects in their coping capabilities comprised the fourth area of concern. The fifth and sixth areas investigated the relationship between HSI and LSI subjects in their responses to stress.

Memories were rated by each perspective subject as to the pleasantness or unpleasantness (positive or negative) of his memories. Judges rated memories on the Early Recollection Rating Scale (ERRS) as well as on the activity (active or passive) demonstrated in each recollection. From these ratings, two independent variables were developed: active-positive (A-P), and passive-negative (P-N).

The initial sample, 400 undergraduate students, were paid $1.00 each to complete the Early Recollection Questionnaire, requesting six ERs, and the State-Trait Anxiety Inventory (STAI). After rating all memories as to affect and activity, this sample was reduced to 30 by selecting out subjects who had three or more memories reflective of one of the two categories (A-P or P-N). These subjects were paid $5.00 each for their participation.

The experimental phase consisted of exposing each subject to an analogue social situation developed to produce stress. The dependent variable was anxiety as measured by the STAI and heart rate (HR).

T tests between the scores achieved by subjects in the A-P and P-N categories on the ERRS suggested that activity and affect are good indicators of the Global score achieved on the ERRS. T tests also indicated that preexperimental stress as measured by HR and the STAI does not differ.

A one-way analysis of covariance, covarying for resting HR, failed to find significant differences in stress experienced during the experimental phase. In addition, a one-way analysis of covariance controlling for both HR and STAI failed to find significant differences in stress as measured by HR and STAI at the conclusion of the experimental phase.

Specifically, activity and affect, as rated in ERs, appear to reflect the Global social interest score as measured by the ERRS. However, extreme scores on the activity and affect continuum reflected in ERs could not predict stress experienced by subjects in an analogue social situation.

VITA

General Information

Name: Michael D. Traver

Home Address: 199 Armistead Avenue (until July 1, 1978)
Williamsburg, Virginia 23185
100 Robinhood Road (after July 1)
Franklin, Virginia 23851

Telephone: Williamsburg: 804/253-4691 (home); 253-5478 (office)
Franklin: 804/562-4636

Date of Birth: February 12, 1947

Marital Status: Single.

Education

Institution	Years	Degree	Major
Chowan College			Business
Murfreesboro, North Carolina	1965-1967	A.S.	Administration
Virginia Commonwealth University			Business
Richmond, Virginia	1967-1969	B.S.	Administration
Virginia Commonwealth University			Rehabilitation
Richmond, Virginia	1973-1975	M.S.	Counseling
College of William and Mary			
Williamsburg, Virginia	1976-1978	Ed.D.	Counseling

Training Experience

1969 Attended the Defense Language Institute (USAF), San

Antonio, Texas, leading to a certificate to teach English as a foreign language.

1971 Attended the Race Relations Institute (USAF), Charleston, South Carolina, leading to a certificate as a race relations facilitator of small groups.

1974 Attended workshops offered by Stout University, Wisconsin, in Richmond, Virginia, on work/social evaluation and adjustment.

1977 Attended workshops offered by Bowie State University and conducted by Frank Walton and Harold Mosak in Columbia, South Carolina, on advanced Adlerian counseling techniques.

1978 Attended workshops offered by Christopher Newport College and conducted by David Drum in Williamsburg, Virginia, on structured group therapy.

Relevant Employment

1978- Research assistant and group therapist. Eastern State Hospital, Williamsburg, Virginia. Glenn Shean, Ph.D., Supervisor.

Group facilitator in structured and therapy groups with adults and adolescents. Trainer of paraprofessionals in human relations and structured group techniques. Coauthor of a manual on social skills and the implementation of structured groups. Coordinator of services in the hospital setting.

1975- Child Care Worker. Commonwealth Psychiatric Center,

1978 Richmond, Virginia. Shirley Anderson, Hospital Director,

Supervisor (part time).

Duties included conducting group sessions, patient interaction and consultation, implementation of various programs consistent with the milieu community.

1976 Counselor. Adult Skills Program, The College of William and Mary, Williamsburg, Virginia. Rita Welch, Director, Supervisor (self-study).

Counselor for college employees enrolled in a Graduate Equivalency Diploma program. Duties included counseling, vocational testing, and job placement.

1975 Counselor/Manager. Peninsula Lodge, Inc., Bremerton, Washington. George Thompson, Assistant Director, Supervisor.

Individual and marital therapist. Developer of work adjustment and work evaluation programs for inpatient psychiatric population. Duties also included job placement and follow-up.

1974 Director of Rehabilitation. Goodwill Industries, Richmond, Virginia. Michael Shriner, Director, Supervisor (internship).

Duties included development of work evaluation and adjustment program; individual and vocational counseling including psychometric testing, placement, and follow-up.