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A comparison of normals and neurotics under conditions of stress and non-stress

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University of Dayton

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A COMPARISON OF NORMALS AND
NEUROTICS UNDER CONDITIONS
OF STRESS AND NON-STRESS

Thesis
Submitted to
The Graduate School of Arts and Sciences
University of Dayton

In Partial Fulfillment of the Requirements for
The Degree
Master of Arts in Clinical Psychology

By
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Graduate School of Arts and Sciences
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Thesis

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Abstract

The present research was aimed at comparing the reactions of two subject groups, normal and neurotic, under two experimentally manipulated conditions, stress and non-stress. The theoretical views which suggested the need for such a study were those outlined by Alfred Adler. He suggested the existence of very different life styles for the normal and the neurotic individual. The exposure of these two groups to both experimental conditions made possible a comparison of their defensive styles.

In both experimental conditions, the subject worked on six separate tasks in the presence of two confederates. While all six problems in the non-stress conditions were solvable, only three of the problems in the stress condition could be completed according to the directions given.

It was hypothesized that the neurotic, when confronted with a situation in which he suffered a loss of self-esteem, would react with his characteristic defensiveness and lack of courage. The normal individual, on the contrary, was expected to accept the responsibility for a poor performance rather than to react with defensive maneuvers.

The results indicated that while the neurotic subjects did appear generally more threatened and defensive, this defensiveness did not manifest itself to a significantly greater degree after a loss of self-esteem.

Apparently, the reactions of the neurotic individuals were more stable across conditions whereas the behavior of the normal individuals varied more in accordance with the situations to which they were exposed.

In Memory of Antos C. Rancurello

"And when he had finished speaking, all bowed their heads,

And when they looked up again he was gone from them. . . .

But his words they remembered, for he spoke the secrets
of the heart."

Secrets of the Heart
Meditations of Kahlil Gibran

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TABLE OF CONTENTS

	Page
Abstract	iii
Dedication	v
Acknowledgements	vi
List of Tables	ix
 I. REVIEW OF THE LITERATURE	 1
Locus of Control	5
Current Research on the Distinction Between the Normal and the Neurotic Personality	 7
Effects of Stress	9
Threat and Its Relationship to Defense	12
The Defenses of Repression and Sensitization	14
 II. PRESENT RESEARCH	 16
Overview	16
Need For the Present Study	17
Operational Definitions	20
Hypotheses	22
 III. METHODOLOGY	 24
Subjects	24
Confederates	24
Ratings of Adjectives	25
Procedure	26
 IV. RESULTS	 30
Validity of Normalcy and Neuroticism as Operation- ally Defined	 30
Validity of Stress as Operationally Defined	30
Relationship Between Diagnostic Status and the Tendency Toward Excuse Making	 31
Number of Trials Attempted for Both Traceable and Untraceable Drawings	 34
Defensive Self-Report	37
Reaction of Normals and Neurotics to Stress and Non-stress	 44
Attempt to Avoid a Potentially Threatening Situation	47

Table of Contents (Cont.)

	Page
V. DISCUSSION	50
REFERENCES	62
APPENDICES	65
A. Traceable Drawings	65
B. Untraceable Drawings	72
C. Adjective Check List for Verbal Defensiveness	76
D. Questionnaire Measuring Stress	78
E. Questionnaire Measuring Defensive Self-Report on the Traceable Drawings	81
F. Questionnaire Measuring Defensive Self Report on the Untraceable Drawings	84

List of Tables

	Page
1. Mean Scores on the Check List for Excuse Making . . .	32
2. Source Table for the Analysis of Variance Conducted on Check List Scores	33
3. Mean Number of Trials Attempted on Traceable (and Untraceable) Drawings	35
4. Source Table for the Analysis of Variance Conducted on the Number of Trials Attempted on the Traceable Drawings	36
5. Mean Scores of the Difference Between Number of Attempts Needed and Number of Attempts Reported on Traceable (and Untraceable) Drawings	38
6. Source Table for the Analysis of Variance Conducted on the Difference Between Attempts Needed and At- tempts Reported on Traceable Drawings	39
7. Mean Scores of the Degree of Success Reported on Traceable (and Untraceable) Drawings	42
8. Source Table for the Analysis of Variance Conducted on the Degree of Success Reported on Traceable Drawings	43
9. Mean Scores on Stress Questionnaire	45
10. Source Table for the Analysis of Variance Conducted on Stress Questionnaire Scores	46
11. Source Table for the Chi-Square Conducted on the Degree of Absenteeism Displayed by Normals and Neurotics	49

CHAPTER ONE

REVIEW OF THE LITERATURE

Much has been written on the effects of stress and threat on the individual. Some have emphasized how the individual's self-concept and concept of others are changed as a result. Others have investigated the possible correlation between some personality variable and the manner in which the individual reacts to a stressful situation. Little research has been thus far aimed at discovering a possible relationship between a global life style and the manner in which one reacts to stress and threat. In the present work, we are interested in comparing two life styles, the normal and the neurotic, under two experimental conditions, stressful and non-stressful. The literature review will begin with an overview of Alfred Adler's conception of the neurotic personality. Other areas in the literature to be discussed are: locus of control, the self concepts of the normal and the neurotic, the effects of stress on the individual, and threat and its relationship to defensiveness.

To understand Adler's conception of the neurotic personality one must, at the very least have some conception of Adler's view of man. For some theorists, man is primarily a reacting organism automatically responding when the appropriate stimulus is present. One need only consider the contiguity and connectionist theories of Watson, Guthrie, Hull,

and Skinner for an example. Others are not so concerned with man's behavior as with his conscious, preconscious, and unconscious motives and drives. Sigmund Freud and Carl Jung are two more prominent representatives of this school. While these theorists envision man as a complex and compartmentalized being, others argue that man must be understood as a unity of past experiences, present situations, and future expectations. For them, man is much more than a S-R or S-O-R paradigm. We need only acquaint ourselves with the personalistic theories of Maslow, Allport, and Rogers to recognize this distinction. It is to this latter camp that Adler belongs. Man, as purposive, goal-directed, and unique is ultimately the master of his own destiny. Man is understood to be purposive and goal directed insofar as his actions are meaningful. While his behavior may seem incongruent or self-defeating to an observer they are reasonable if one understands their relationship to the goals which the individual has selected for himself. Which goals become significant for the individual depend greatly on his unique interpretation of early life experiences. The style which each individual develops to attain his goals, as well as the goals themselves, determine what Adler labels the individual's "life style."

The early experiences which play such a decisive role in the formation of a life style cannot be fully understood until one considers their interpersonal aspects. Adler refers to man as a "socially embedded unity" (Adler, xvii, 1969). Who one becomes is inextricably

tied to who one is allowed to become by those significant others in his life. Consider the concept of inferiority so central in Adler's "Individual Psychology." One cannot feel inferior if there exists no one who appears superior to him. Beginning in infancy and childhood one comes to know himself through others. It is obvious that the early experiences of the only child are quite different from those of a middle child in a large family. No experience of an individual is meaningful unless one evaluates it in light of those individuals who make it possible. Unlike other theorists, however, Adler does not visualize the individual's personality as determined at an early age. Rather, the individual, as well as his goals and expectations, remains flexible. Therefore, one's significant others change at various stages in one's life. The life style of the neurotic, then, must be understood in terms of his goals, his expectations, and the individuals with whom he comes into contact.

The goals which the neurotic selects are mistaken ones, just as his life style is a faulty one. While both the normal and the neurotic have certain life problems to face their manner of solving these problems are characteristically different. While each attempts to overcome inferiority feelings and maintain a sense of superiority the normal individual views himself as the vehicle for change. Specifically, he frequently compensates in the area for which he feels inadequate. The neurotic, however, makes excuses. He resorts to various forms of

abnormal behavior to safeguard his opinion of himself when confronted with situations he feels inadequate to meet (Ansbacher, 1956). More succinctly, the individual does not have neurosis. He is neurosis by virtue of his choices and perceptions. Consider this statement by Adler's daughter, Alexandra (1939). "The specific neurotic symptom will always be effective because it is the result of an intelligent choice on the part of the patient (p. 16)." The neurotic "allows himself to be tempted and seduced into his symptom (Ansbacher, 1956, p. 292)." The individual unknowingly selects certain symptoms and develops them until they impress him consciously as real obstacles. The neurotic life style, thusly, is a self-protective style of life. The neurotic style represents a "yes-but" manner of approach. Because of their logic, "neurotics say 'yes' to the various tasks confronting them and in saying 'but' they stress all the obstacles preventing their going ahead (Adler, 1939, p. 7)." This "but" is the epitome of all neurotic symptoms. "It offers an alibi to the neurotic (p. 90)." The "yes-but" attitude towards life may be seen as an attempt to escape future situations where feelings of inferiority may be heightened (Adler, 1927). When the individual becomes frightened of the problems he must solve, he looks for an excuse.

The neurotic, according to Adler, lacks a certain trait necessary for the fulfillment of a normal productive life--courage. "It is the fear of defeat, real or imaginary, which occasions the outbreak of the so-called neurotic symptoms (Adler, 1964, p. 13)." Neurosis, then, may

be viewed as a kind of psychological superstructure used to regain superiority with personally created safeguards. "Thus, what was desired is attained--the ordeal is evaded without disclosing, even to its owner, the hated feelings of inferiority (Adler, 1964, p. 11)."

Locus of Control

Adler's conception of the differences in the life styles of the normal and the neurotic personality has elements in common with the distinction noted in the literature between individuals with an internal and an external locus of control. Adler's neurotic is a coward who makes excuses for his failure to assume the responsibility for his actions. The normal individual, he contends, assumes this responsibility by compensating for his felt inferiority. Similarly, externals experience their lives as primarily shaped by factors such as fate, chance, or luck. Internals, on the other hand, consider themselves capable of determining the course of their lives. It is for this reason that a brief survey will be made of the various studies conducted which investigated the relationship between locus of control and some other personality attribute. One of the earlier studies was conducted by Liverant and Scodel (1961). The authors were interested in a possible relationship between locus of control and decision making under conditions of risk. The results indicated that internals chose significantly more intermediate and significantly fewer low probability bets than externals. Internals rarely selected an extreme high or low probability bet. A year later, Gore and Rotter investigated the relationship between locus of control

and social desirability motives on one hand and involvement in social action on the other. Internals proved more socially committed while those subjects highest in social desirability motives were the least committed.

Phares (1965) investigated the role of locus of control in determining the amount of social influence one exerts. The subjects in this study acted as experimenters. They were employed in an attempt to change the expressed attitudes of the chosen "subjects." Phares discovered that internally controlled experimenters were able to effect greater changes in attitude. One might hypothesize that an individual who believes himself responsible for the outcome of his actions is likely to exert more effort in any task undertaken. A somewhat similar study was conducted by Phares and Davies (1967). Here, the relationship between locus of control and the tendency toward information seeking was investigated. Consistently, in two out of the three experimental conditions, internals sought more information concerning both the individual they were to influence and the topic in question.

Somewhat more related to the proposed study was the research conducted by Phares, Ritchie, and Davies (1968). A group of internal and external students were provided with a personality assessment containing both positive and negative statements to test their reactions to threat. Contrary to prediction, there were no differences in anxiety level between internals and externals following the reading of the

threatening material. Moreover, externals recalled significantly more of the negative material than did internals and were superior in total recall of the material. As might be expected from previous research, internals were more likely to engage in remedial behaviors to confront their problems.

The literature on locus of control suggests two distinct types of individuals. The internal individual is one who accepts the responsibility for his life. A conservative person who enjoys a challenge, he selects goals which are neither too easy nor too hard to realize. When involved in a situation in which the desired results are clearly defined he takes advantage of all the resources available to him. The external individual, on the other hand, does not assume the responsibility for his actions. He is, therefore, less threatened by a poor performance because he can blame any results on factors external to himself. Once he is threatened, however, it is the internal individual who is more likely to initiate changes to overcome a failure.

Current Research on the Distinction Between the Normal and the Neurotic Personality

While the theoretical connections for the present study lean heavily on the views of Alfred Adler, other conceptions of both normal and neurotic personalities will also be herein considered. Current research concerned with the distinction between these two life styles will be reviewed in an effort to investigate the relevancy of other theories. Chodorkoff (1953) conducted a study in which thirty normal

undergraduates served as subjects. On the basis of their scores on various projective techniques each subject received three scores measuring the accuracy of self-description, perceptual defense, and adjustment. The results indicated that the more accurate the self-description the less defensive and the more adjusted the individual will be. Moreover, the more adjusted the individual, the less perceptual defense he will exhibit.

Nahinsky (1966) employed four subject groups: neurotics, inpatient psychotics, outpatient psychotics, and general population controls. He discovered that each diagnostic group differed significantly from the control group. For each group there was a lower average self-ideal correlation than for the control group. A year later, Ziller and Grossman compared the "self-social" constructs of the normal and the neurotic personality. It was hypothesized that those individuals with personality disorders will display "self-social" constructs reflecting greater power orientation and self-centrality, but lower self-esteem, identification, and social interest. The results supported the hypotheses related to the last four concepts.

The last study comparing normals with neurotics to be reviewed here was done by Vingoe (1968). Specifically, he employed normals and neurotics to investigate the validity of Rogers' "self" theory and Eysenck's theory of extraversion and neuroticism. Consistent with the "self" theory of Carl Rogers, neurotics were found to be less self-aware and less self-accepting than their normal colleagues. Interestingly,

no difference was found between introverts and extroverts in self-awareness, but introverts proved to be significantly less self-accepting than extroverts.

The studies reviewed here suggest some striking differences between the normal and the neurotic personality. Throughout the literature, the normal appears consistently more self-aware and self-accepting. The neurotic, on the contrary, is not only less self-aware and self-accepting, he is significantly more self-centered and defensive.

The Effects of Stress

Thus far, we have touched upon some generalized theoretical hypotheses regarding the differences between the normal and the neurotic personality. In the present study, however, we are interested in one specific aspect of this question, behavior under stress. There have been numerous studies on the effects of stress. Those studies which are applicable to the present research fall into three major areas: theoretical articles, articles attempting to investigate a possible relationship between self-concept and performance under stress, and those studies hypothesizing a correlation between behavior under stress and some other personality variable. An article by Lazarus, Deese, and Osler (1952) provided a theoretical rather than an experimental discussion of the research on stress. The authors delineated two major approaches to the study of stress: stress induced by the threat of failure and stress induced by the working conditions of the task itself.

One of the early articles concerning the relationship between self-concept and reaction to stress was written by Diller (1952). After exposing his subjects to success, failure, and neutral conditions, two very interesting results occurred. It was found that after the failure experience, self-attitudes were not positively correlated with attitudes towards others. On the contrary, self attitudes were positively correlated with attitudes towards friends after the experience of success. Three years later, Levanway (1955) explored another aspect of the problem posed by Diller. The authors discovered that following stress, the subject expressed liking for a greater number of pictures depicting other people, rated others more favorably, and significantly changed their self ratings. In 1955, Aronson investigated the relationship between self-concept and reaction to stress. The results indicated lack of support for the hypothesis that the individual is threatened by experiences incongruent with his self-concept. Suinn and Geiger (1956) conducted a study on stress and the stability of self and other attitudes. The results indicated that both attitudes are highly stable traits. Anxiety did not increase the correlation between self and other attitudes. Sellers (1963) investigated the effect of threat on self-esteem, esteem for others, and anxiety in well adjusted and poorly adjusted persons. Changes in self-esteem and esteem for others were scored. Self-esteem measures differentiated patients from normal subjects. Test scores and change scores showed no consistent differences.

Other authors attempted to discover a relationship between behavior under stress and some personality variable. In 1952, Eriksen, Lazarus, and Strange conducted one such study. Their subjects, after being subjected to a failure stress situation, were given the Group Rorschach Test. No relationship was found between performance under stress and any of the Rorschach variables. Vogel, Baker, and Lazarus (1957) conducted research to investigate the motivational characteristics of individuals as a source of individual differences in response to stress. Two types of motives were manipulated, induced and intrinsic; and two types of behavior were measured, perceptual motor and physical reactivity. The authors found that the strength of the motive was inversely related to performance output and reactivity. Atkinson and Litwin (1960) investigated the relationship between achievement motive and test anxiety. Those subjects who had a stronger need to achieve favored tasks of intermediate difficulty, showed more persistence in the achievement task, and displayed a higher level of accomplishment.

The research conducted on the stability of self and other attitudes after success and failure experiences provided contradictory findings. Some studies found that these attitudes are flexible and tend to be negatively correlated after failure but positively correlated after

success. Suinn, Geiger, and Sellers, however, found these attitudes to be highly stable.

For those studies attempting to correlate reaction to stress with a personality attribute, the literature suggested a relationship between motivation and performance under stress. The most significant finding correlated the motive to succeed with behavior in a stressful situation.

Threat and Its Relationship to Defense

Inherent in the concept of stress is yet another concept, that of threat. In any stressful situation, the individual necessarily feels some aspect of his being threatened. In some cases, it may be his self-concept that becomes uncertain. At other times, the individual's felt superiority vis -à- vis another becomes insecure. Hogan (1952) defined threat as the phenomenon which occurs when experience is perceived as inconsistent or incongruent with learned conceptions and evaluations of oneself. Defense is a response to threat designed to maintain one's established self-image by denying or distorting a threatening experience. The author contended that while defense may reduce awareness, it fails to actually resolve threat. Eriksen (1952) investigated the relationship between individual differences and defensive forgetting. Two groups of subjects were employed, those with a tendency to recall completed tasks under ego involvement and those with a tendency to recall failed tasks. The experimental group, unaware of the

unsolvable nature of the task before them, was led to expect success. The results discovered that both groups recalled the same number of completed tasks but the experimental group recalled significantly fewer incompleting ones. Lazarus and Longo (1953) conducted a study on the consistency of psychological defenses against threat. Subjects falling in the extremes of Eriksen's selective recall study were employed. They were asked to learn ten pairs of nonsense syllables and informed that they would be shocked on five of these pairs. Subjects who recalled successes also tended to recall material not associated with pain.

Chodorkoff (1956) conducted a study in which thirty male undergraduates were employed to test the following two hypotheses: (a) the greater the degree of anxiety present, the more defensive the individual will be, and (b) the greater the degree of threat experienced, the more defensive he will be. The only significant correlation discovered was that of degree of threat experienced with defensiveness. Davitz (1959) studied the relationship between fear, anxiety, and the perception of others. His results appear somewhat contradictory to those of Levanway. Davitz found that subjects who reported a relatively high degree of fear and anxiety described liked and disliked others as more threatening compared to those who reported little fear and anxiety. A similar relationship was investigated by Hammes (1963) on manifest anxiety and the perception of environmental threat. The results provided support for the hypothesis that high-anxious individuals would evaluate environmental stimuli higher on a dangerous-aggression-threat continuum than would low-anxious individuals.

The literature suggests a definite correlation between experienced threat and defensive reactions. The concept of threat discussed here was synonymous with threat to one's already established self-image. The threatened individual reacted by employing a selective memory. He remembered himself as being more successful than he was. Moreover, he perceived others as more threatening in these situations than he did under normal circumstances.

The Defenses of Repression and Sensitization

The research that has been done concerning neurotics suggest to the reader a very defensive individual with limited self-awareness and acute inferiority feelings. The literature available on repression and sensitization indicated a correlation between these two defense styles and self-acceptance. Other available literature suggested a correlation between diagnostic status and self-acceptance. A review of the appropriate studies may indicate an additional correlation between defense styles and diagnosis. An early study on the predictability of perceptual defense was conducted by Carpenter, Wiener, and Carpenter (1955). The purpose of the investigation was to determine whether perceptual behavior could be predicted from a knowledge of defense mechanisms. While the results indicated a significant difference between repressors and sensitizers, the authors failed to acquire proof that a particular defense mechanism was universal to any individual for all types of anxiety producing stimuli. A year later,

these same authors attempted to determine whether one could reliably determine repressive and sensitizing defenses from verbal material. While verbal material proved to be a reliable measure, the results, once again, did not lend support to a theory of the generality of defensive behavior.

Another aspect of defensive behavior was considered by Altrocchi, Parsons, and Dickoff (1959) in their study of self-ideal discrepancy in repressors and sensitizers. As hypothesized, repressors manifested smaller self-ideal discrepancies than sensitizers. The last article to be reviewed here is by Liberty, Lunneborg, and Atkinson (1964). These authors investigated the relationship between perceptual defense, dissimulation, and response styles. To clarify the relationship between these factors, sixty-five personality scales were administered to the subjects. The results indicated that repressors respond in a socially desirable direction while sensitizers endorse more socially undesirable statements.

The most significant finding offered by these studies indicated that there is little proof that any specific defense mechanism is universal for any type of individual. Another interesting finding which may attenuate the normal-neurotic distinction previously noted is that repressors appear more self-accepting than sensitizers. Perhaps, what was previously labeled normal self-ideal discrepancy may actually have been an indication of repression.

CHAPTER TWO

PRESENT RESEARCH

Overview

The aim of the present study was to compare the differential reactions of two subject groups, normal and neurotic, under two experimental conditions, stress and non-stress. The author was particularly interested in comparing the extent of defensiveness manifested by these subject groups. The Adlerian concepts of the normal and the neurotic personality, which formed the theoretical basis for the current research, suggested the existence of distinctly different life styles for both groups of subjects. Within this theoretical framework, the neurotic individual was conceptualized as a highly defensive individual who feels inferior and insecure and, therefore, develops a world perception which allows him to feel victimized by circumstances beyond his control. Thusly, he is excused from meeting challenges and risking failure. The author hoped to determine whether the creation of an experimentally stressful situation, which would heighten these inferiority feelings, would also lead to a significant increase in the degree of defensiveness already present in the neurotic subjects. With regard to the normal subjects, the experimenter wanted to determine whether or not these individuals actually were less defensive and more willing

to accept the responsibility for their failings than their neurotic peers. The implementation of this present experimental paradigm, along with its Adlerian foundation, lent itself to a discussion of numerous and potent theoretical questions. The author hoped to ascertain whether or not there was a significant difference in the way normals and neurotics reacted to a stressful as well as a non-stressful situation.

Need For the Present Study

In the previous section we have summarized a number of studies relevant to the present research. In this chapter, the author attempted to elucidate the need for a new study which may be viewed both as a continuation and a refinement of the areas already investigated. The literature review contained a summary of the research available in five major areas: locus of control, the self concept of the normal and the neurotic personality, reaction to stress, threat and its relationship to defense, and defense mechanisms. The present research was mainly concerned with two subject groups, normal and neurotic, under two experimental conditions, stressful and non-stressful. In previous studies investigating diagnostic groups (Nahinsky 1966, Ziller and Grossman 1967, Vingoe 1968), subjects were predominantly grouped according to their clinical diagnosis. This method of subject selection encouraged discrepancy due to the inherently subjective quality of each clinician's diagnosis. The present study operationally defined its subjects according to their scores on an objective questionnaire. A number of studies done in the past (Chodorkoff

1953, Nahinsky 1966, Ziller and Grossman 1967, Vingoe 1968) sought to investigate a possible correlation between self-concept, self-esteem, and self-centrality on the one hand and psychological adjustment on the other. Others (Diller 1952, Levanway 1955, Aronson 1955, Suinn and Geiger 1956, Sellers 1963, Eriksen 1952, Vogel 1957, Atkinson 1960) attempted to investigate the relationship between a specific personality variable and reaction to stress. The present research, however, was interested in a possible correlation between psychological adjustment and performance under stress. While previous studies have indicated that neurotics were significantly less self-accepting than their normal counterparts, the authors failed to further investigate how these individuals dealt with their felt inferiority. This experimental paradigm allowed the reader to evaluate how effectively the normal and the neurotic dealt with heightened inferiority feelings resulting from a failure stress experience. Moreover, this study led to a reevaluation of those studies already establishing a correlation between motivation and reaction to stress. Could we, in fact, explain a differential reaction to stress for normals and neurotics on the basis of their motivational characteristics?

Studies dealing with stress in the past have operationally defined stress in a number of ways. In some studies (Vogel, Baker, and Lazarus 1957; Lazarus and Longo 1953), stress was synonymous with physical stress. The two conceptions of stress with which we are herein concerned can be outlined as follows: stress resulting from the difficulty of the task

and stress resulting from one's experience of failure. The present study attempted to incorporate the latter two approaches to the creation of an experimentally stressful situation. The implementation of a failure stress condition allowed the reader to witness the individual's reaction to a situation in which his goals are thwarted. We recall that, according to Adler, the neurotic is continually attempting to allay feelings of inferiority. The use of an unsolvable task allowed the subject to directly experience his own inadequacy rather than be told at a later time that he performed poorly.

A predominant trend incorporated into studies of stress and threat was the attempt to correlate performance under stress with a single personality variable. The author felt that any one personality attribute must be understood in terms of the total personality of the individual. Therefore, the emphasis here was on the interaction between a global life style and performance under stress. Most significantly lacking in past research was a meaningful discussion of the situation's interpersonal aspects. The performance and attitude of the other subjects must inevitably influence the subject's perception of the experience. When the experimental paradigms used did lend itself to a discussion of interpersonal interaction this factor was largely ignored. In Eriksen's 1952 study, a large number of subjects were simultaneously exposed to a failure stress situation in the presence of a large number of confederates. We suspect that the use of groups of subjects and confederates led to a "watering down" of the intensity of the interpersonal interaction. The present study, hoping to intensify this interaction, employed one subject and two confederates for each experiment.

For those studies dealing with the subject's experience of failure (Diller 1952, Eriksen et al 1952, Atkinson and Litwin 1960), the consideration remained predominantly with each individual's reaction to failure. Again, the interpersonal aspects of the situation were left undiscussed. Even when there are no confederates present, there must inevitably be an interaction between subject and experimenter. The present research created an interpersonal paradigm wherein the subject experienced failure in the presence of two of his "peers." The emphasis on the interpersonal aspects of the experience allowed us to consider to what extent is the experience of one's failure the experience of failure in someone else's eyes. Specifically, how did the presence of his peers heighten the subject's experience of failure?

Operational Definitions

A primary problem was the determination of an adequate and objective measure to distinguish between normal and neurotic individuals. Among the various scales available, some would tap only one aspect of neuroticism, anxiety. The Taylor Manifest Anxiety Scale and its modified version, the Heineman's Forced Choice Anxiety Scale, were just two examples. Other tests, among them the Minnesota Multiphasic Personality Inventory, tapped a variety of personality dimensions of which neuroticism comprised only a small percentage. It was decided to employ the Neuroticism Scale Questionnaire. The N.S.Q. offered a number of advantages. First, it was a brief, easily administered scale which provided the experimenter with a standard scoring system. More importantly, however, the N.S.Q. allowed us to discriminate not only between neurotics and normals but also

between varying degrees of normalcy and neuroticism. Third, the N.S.Q. had been found, by validation research, to be consistent with the consensus of clinical judgment regarding the nature and symptoms of neurosis. Most significantly, the N.S.Q. tapped not one but six personality dimensions previously judged to account for the most marked differences between those individuals clinically judged as neurotic or normal. These six dimensions were outlined in the test handbook as follows: over-protection, submissiveness, depression, guilt, frustration, and emotional immaturity. The subjects scoring within the highest and lowest quartiles of the distribution of test scores were chosen as the neurotic and normal subjects respectively.

Next, the appropriate operational definitions for stress and non-stress had to be determined. A primary consideration was the selection of an experimental task which would be independent of the subject's ability to learn or to perform certain kinds of tasks. Hence, the control for I. Q. among the subjects and the decision to employ geometrical drawings. Another concern involved the obtaining of a stress score measured independently from the subject's initial ability and any change due to fatigue or learning. To deal with this methodological problem our experimental design made no use of successive trials.

For each experimental condition, the subject and two confederates posing as naive subjects were given six geometrical drawings and instructed to trace each drawing without lifting his pencil from the sheet of paper and without crossing over any portion of the drawing more than once. In the

non-stress condition, all six drawings were traceable. (See Appendix A.) Moreover, the subject was told that this experiment was a pilot study and that his performance on these drawings would be used to establish norms for the later study.

As previously mentioned, the operational definition of stress herein employed may be viewed as a combination of two predominant approaches to the creation of a stress condition: stress resulting from the complexity of the task and stress resulting from the experience of one's failure. In the stress condition, three of the six drawings given to the subject were impossible to trace according to the instructions given. (See Appendix B.) To add to the experienced stress of the individual, each subject was led to believe that his performance on these drawings represented a valid measure of his I. Q.

Hypotheses

This experimental design along with its theoretical foundation allowed us to investigate the validity of certain hypotheses. Within our study, we tested two primary and one secondary hypothesis which follow:

1. While the normal individual will take responsibility for and "own up" to a less than perfect performance, the neurotic, in his attempt to allay feelings of inferiority, will make excuses for himself emphasizing the obstacles presented by other individuals and the situation itself. We expect the "yes-but" character of the neurotic to be even more strikingly evident when the neurotic is experiencing a loss of self-esteem. The

neurotic is, in effect, saying: "If I fail it is because of circumstances beyond my control."

2. Over the course of his lifetime, the neurotic has developed characteristic ways of handling various life situations, particularly stressful ones. Consistent with his generally defensive and cowardly life style we expect that the neurotic will not admit the extent of a poor performance and, when given the opportunity, will present himself as having performed more successfully than he actually did. Moreover, we expect that the normal individual will be more accurate and honest in his reported estimation of his performance. Where both groups of subjects are exposed to a success situation we expect no difference in the accuracy of their self-evaluations.

3. Our secondary or minor hypothesis states that those subjects chosen as neurotics will try to avoid the possibility of performing poorly by failing to appear at the scheduled time to take part in the experiment.

The present research paradigm, with its emphasis on interpersonal interaction, loss of self-esteem, and both potential and actualized failure, allowed the reader to discover the different styles of handling a threatening situation by a consideration of the subject's behavior prior to and during the experiment.

CHAPTER THREE

METHODOLOGY

Subjects

As previously mentioned, the general experimental design of this study consisted of a comparison of two groups of matched normals and two groups of matched neurotic subjects under conditions of stress and relatively no stress. The author considered it necessary that these two diagnostic groups be matched with respect to such variables as age, intelligence, and socioeconomic background. In order that the subjects chosen be adequately matched on these variables they were selected from an undergraduate student population. The assumption here was that the subjects, on the basis of their student status, would be fairly equivalent with respect to all three variables.

Once the required number of normals and neurotics were obtained from this student population, they were randomly assigned to one of the two experimental conditions. While it was originally planned to have fifteen male subjects within each of the four experimental cells, the difficulty in obtaining students to participate for the required forty minutes made it impossible to do so. Eventually, it was decided to employ eight male and four female subjects per cell.

Confederates

Ideally, each subject would have worked on the experimental tasks with the same pair of confederates. Due to the impossibility of

obtaining two confederates able to volunteer this much time, it was decided to utilize five separate pairs of confederates who would appear in each experimental cell an equal number of times, thereby equalizing the influence of the different personalities involved. These confederates were chosen from among those students in an undergraduate social psychology class who volunteered to participate in a psychological experiment. Before the experiments began, it was deemed necessary to conduct some preliminary training of these confederates concerning the purpose of the experiment and the nature of their roles within it.

Ratings of Adjectives

Among the various protocols which had to be designed before the experiments could begin was a measure of verbal defensiveness. While the other protocols were composed specifically for this research, it was decided to use an abbreviated form of the Gough Adjective Check List to determine the extent of verbal defensiveness present in the subjects. For the purpose of ascertaining which adjectives chosen by the subject would be indicative of this tendency, the original Gough Adjective Check List was given to a group of ten graduate psychology students. These individuals were then asked to indicate each adjective which they judged to be indicative of verbal defensiveness. These students were asked to conceptualize this tendency in terms of excuse making, rationalization, and the failure to assume personal responsibility. The adjectives chosen by at least five of the ten students were later used to evaluate the subject's tendency toward excuse making.

Procedure

Non-Stress Condition. When each subject, scheduled singly, came to the appointed room he was met by the experimenter. Shortly thereafter, the subject was joined by two confederates both posing as naive subjects. All three individuals were seated at a rectangular table with the experimenter. No attempt was made to determine the exact seating positions of either subjects or confederates. This was done in an effort to maintain a spontaneous atmosphere which would be less likely to arouse suspicion on the part of the subject. The experimenter began by informing the subject that he would be working on six geometrical drawings which he would have to trace without lifting his pencil from the drawing and without crossing over any portion of the drawing more than once. The subject was told that his performance would be used to establish norms for a later study. He was, therefore, allowed as much time as he needed for each drawing since the average length of time each subject required for the task would be evaluated in order to determine an appropriate time limit for each drawing in the later study. Lastly, the subject was told that the experimenter was interested in his experience of the task to suggest further refinements of the experimental procedure. When these instructions were completed, the first drawing was administered. To insure some degree of consistency, the six traceable drawings were always administered in the same order. Each subject was given several copies of each drawing and asked to make only one attempt at tracing per sheet. The discarded sheets were placed in a box provided for each

subject. While the subjects and confederates worked on these drawings, irrelevant and extraneous conversation was kept to a minimum to avoid confounding the experimental design. To equalize the amount of success and failure experienced in this condition, one confederate completed each drawing before the subject and one confederate finished each drawing after the subject.

Once all the drawings were completed three protocols were administered to both subjects and confederates. In order to test the hypothesis that neurotics would make more excuses for a poor performance than would normals, the abbreviated form of the Gough Adjective Check List, previously discussed, was administered. (See Appendix C.) Two other protocols, both questionnaires, were also administered. The first questionnaire (see Appendix D) served to measure the degree of stress experienced by the subjects. The second questionnaire (see Appendix E) was designed to test the hypothesis that neurotics present themselves as having been more successful in their performance than they actually were.

Stress Condition. The basic design of the stress condition concerning confederates, seating arrangements, and irrelevant conversation, was equivalent to that of the non-stress condition. The experimenter in the stress condition, however, gave a much different explanation for the purpose of the experiment. Each subject was told that the present study was an exact replica of a study conducted on the general population. The purpose of the present study was to determine whether the results previously found would

be repeated with an exclusively student population. The subject was told that the experimenters in the original study were interested in modifying the currently used Wechsler Adult Intelligence Scale by adding a new task to the performance section of the test. In addition, the subject was informed that on the basis of their results the experimenters were satisfied that these drawings represented an adequate measure of I. Q. To create the expectation of success, the subject was told that while he would have four minutes to completely trace each drawing he very probably would not need that much time for any of the six drawings. When these instructions were completed, the first drawing was administered. Once again, the drawings were always administered in the same order. The first, third, and fourth drawings in this condition were identical with those in the non-stress condition. The remaining three drawings were, of course, the untraceable ones. Again, each subject was given several copies of each drawing and asked to make only one attempt at tracing per sheet.

The procedure utilized in the non-stress condition to equalize the amount of success and failure experienced by the subject was again employed in the stress condition for the three traceable drawings. However, on the untraceable drawings, both confederates cheated in order to finish before the subject. Thus, the subject was stressed through a loss of self-esteem in the presence of his peers. To maximize this interpersonal interaction, both confederates made their success, as well as their felt superiority, obvious to the subject while he was still struggling to complete an impossible task.

The first two protocols administered to the stress subjects were identical to those given in the non-stress condition. The last questionnaire given, however, made reference to a different set of drawings. (See Appendix F.) Once these protocols were completed, a careful explanation was offered to the subjects to inform them of the unsolvable nature of the experimental tasks and the use of confederates posing as subjects.

It was decided not to schedule subjects for the stress condition until all the non-stress experiments were completed. Therefore, if a discussion of the experiment did occur between the non-stress subjects and the potential stress subjects, no information would be gained concerning the use of confederates or unsolvable tasks. Moreover, by scheduling all the stress subjects within a relatively short period of time, the opportunity for discussion among the stress subjects was severely limited.

Experimenter Bias. In order to evaluate the hypothesis that neurotics would fail to participate as subjects more often than normals, the experimenter, who contacted each subject by phone, also kept a record of whether or not the subject appeared at the appointed time. To prevent experimenter bias, the experimenter was kept "blind" as to the diagnostic status of each subject. Each individual was simply labelled as belonging to Group One or Group Two, in order that the experimenter would assign an equal number of normals and neurotics to both conditions without knowing the status of any one individual.

CHAPTER FOUR

RESULTS

Validity of Normalcy and Neuroticism as Operationally Defined

Two t tests were computed to determine whether the selected normal and neurotic subjects were, in fact, significantly different from each other. One t test compared the mean raw scores on the Neuroticism Scale Questionnaire obtained by each group. The second test compared each group's score after it was converted to its equivalent position on the normal-neurotic continuum. The resulting scores indicated that our two populations were indeed significantly different from each other ($t = 14.12$, $p < .01$, $df = 46$; $t = 15.10$, $p < .01$, $df = 46$).¹

Validity of Stress as Operationally Defined

A t test for independent means was computed to ascertain whether or not our two experimental conditions, stress and non-stress, were significantly different from each other. The scores used in obtaining the t score were based on the subject's responses on the stress questionnaire. (See Appendix D.) Although "dummy" questions were interspersed throughout the questionnaire to camouflage its real purpose, only the questions pertaining to the subject's experienced stress were used to obtain a score for each subject. The results indicated that the two experimental conditions were, in fact, significantly different from each other ($t = 3.85$, $p < .01$, $df = 46$).

¹All t tests computed were two tailed.

Relationship Between Diagnostic Status and the Tendency Toward Excuse Making

A 2×2 analysis of variance was conducted on the verbal defensiveness scores of the Adjective Check List. (See Appendix C.) The subject's score, in each case, was the number of words he chose which were indicative of excuse making. The mean number of these adjectives chosen by each group under both conditions is given in Table 1 and the corresponding analysis of variance is given in Table 2. Interestingly, these scores indicated that the neurotics made more excuses under each condition than their normal counterparts made under the corresponding conditions. The results of the analysis of variance indicated that there was a significant difference in the extent of excuse making between normals and neurotics across both conditions ($F = 6.52$, $p < .05$, $df = (1, 44)$). Also indicated was a highly significant variation in the extent of excuse making depending on the amount of stress experienced by either subject group ($F = 12.63$, $p < .01$, $df = (1, 44)$). The interaction between the subjects and the conditions proved insignificant. Apparently, the number of excuses made under any one of the two experimental conditions did not vary significantly between either of the two subject groups. While the prediction that neurotics would make more excuses than the normals was substantiated, no evidence was gained to support the additional hypothesis that this tendency would be especially pronounced in a stressful situation.

To determine whether the variation between normals and neurotics was more prevalent under one of the two conditions, a Newman-Keuls test

TABLE 1

Mean Scores on the Check List for Excuse Making

	STRESS	NON-STRESS
NORMAL	4.33	1.41
NEUROTIC	5.08	3.75

Note. Each score is the mean number of "excuse" words chosen.

N = 12 per cell

TABLE 2

Source Table for the Analysis of Variance
Conducted on the Checklist Scores

SOURCE	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A (normal/neurotic)	27.98	1	27.98	6.52*
B (stress/non-stress)	54.19	1	54.19	12.63**
AB (subjects/conditions)	8.06	1	8.06	1.88
Error	188.75	44	4.29	

* $\bar{p} < .05$

** $\bar{p} < .01$

was done. The findings indicate that neither experimental condition contributed more to the significant variation between our normal and neurotic subjects.

A Newman-Keuls analysis of data was also performed to establish whether either subject group contributed more to the noted variation between conditions. Significantly, while there was a significant difference in the amount of excuses made by the normal subjects depending on the experimental condition they were exposed to, there was no such significant difference for the neurotics. These results suggest that while normal subjects made a significantly greater number of excuses when under stress the neurotic tendency to offer excuses was fairly stable regardless of the amount of stress he experienced.

Number of Trials Attempted for Both Traceable and Untraceable Drawings

Traceable Drawings. Another 2 x 2 analysis of variance was performed on the mean number of trials needed to successfully complete each traceable drawing. Although no specific hypothesis had been made relative to this variable, it was felt that it would prove interesting to consider the performance on these drawings with respect to the experimental condition they appeared in. Scores for these drawings and their corresponding analysis of variance are given in Tables 3 and 4 respectively. The analysis of variance revealed that the difference in the number of trials needed between subject groups was significant ($F = 6.27$, $p < .05$, $df = (1, 44)$, with normals requiring fewer trials.

TABLE 3

Mean Number of Trials Attempted on
Traceable (and Untraceable) Drawings

	<u>STRESS</u>	<u>NON-STRESS</u>
Normal	1.64 (8.16)	1.97
Neurotic	3.07 (6.19)	2.56
<hr/> N = 12 per cell		

TABLE 4

Source Table for the Analysis of Variance
Conducted on the Number of Trials Attempted
on the Traceable Drawings

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A (normal/neurotic)	12.41	1	12.41	6.27*
B (stress/non-stress)	.09	1	.09	.05
AB (subjects/conditions)	2.13	1	2.13	1.08
ERROR	87.09	44	1.98	

* p < .05

A Newman-Keuls test was then performed to evaluate which condition, if either, was more responsible for the variation between subjects. The results indicated that there was a significant difference between subjects only under the stress condition. This difference was significant at the .05 level indicating that while the number of trials needed in the non-stress condition was fairly equivalent for both groups, the normals needed significantly fewer trials than the neurotics in the stress condition.

Untraceable Drawings. Also evaluated was the difference in the degree of persistence manifested by the normals and neurotics for the untraceable drawings in the stress condition. (See Table 3.) While normal subjects displayed a greater degree of persistence, a t test for independent means proved insignificant indicating that neither group varied significantly in the number of trials it attempted to successfully complete the experimental task.

Defensive Self-Report

Traceable Drawings. To determine whether or not subjects reacted defensively when asked to evaluate their performance on a task which they successfully completed, a comparison was made between the number of trials each subject reported he needed for each drawing (see Questionnaire, Appendices E and F) and the number of trials he actually did need (as tabulated by the experimenter). Each subject's score was based on the mean difference between these two measures. Table 5 summarizes the mean difference scores for the two groups under both conditions while the corresponding analysis of variance is presented in Table 6. The

TABLE 5

Mean Scores for the Differences Between
Number of Attempts Needed and Number of
Attempts Reported on Traceable (and Un-
traceable) drawings

	STRESS	NON-STRESS
Normal	+ 1.80 (+ .60)	-.24
Neurotic	+.75 (+.28)	-.22

Note. A negative value indicates the tendency to present oneself as more successful than one actually was. A positive value indicates the opposite tendency.

N = 12 per cell

TABLE 6

Source Table for the Analysis of Variance
Conducted on Differences Between Attempts
Needed and Attempts Reported on the
Traceable Drawings

SOURCE	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A (normal/ neurotic)	3.22	1	3.22	3.09
B (stress/non-stress	27.10	1	27.10	26.06*
AB (subjects/condition)	3.40	1	3.40	3.27
ERROR	45.59	44	1.04	

*p < .01

2 x 2 analysis of variance which was performed on these means for the traceable drawings indicated that there was a highly significant difference between the two experimental conditions ($F = 26.06$, $p < .01$, $df = (1, 44)$). These results indicated that the tendency to describe one's performance as better or worse than it was on a completed task was directly related to the general atmosphere of the experiment.

A Newman-Keuls test was conducted to ascertain which subject group contributed more to the variance between conditions. These results indicated that this variance was predominantly due to the normal subjects whose self-evaluations differed greatly between the two experimental situations. Apparently, the normal individual reacted to the stress condition with a greater underestimation of his performance than the neurotic.

Untraceable Drawings. It was hypothesized that after an experience of failure, the neurotic would be particularly defensive about his performance. As a result, the neurotic would describe himself as having been more successful than he actually had been. In order to compare the defensive reactions of both subject groups to a failure experience, the method used for the traceable drawings was now applied to the untraceable drawings. A t test for independent means was computed to compare the degree of success reported by normals with the degree of success reported by neurotics regarding their performance on a task they failed to complete.

This t test also proved insignificant. Evidently, both subject groups were fairly equivalent in their reporting of a poor performance.

Six t tests for single populations were computed for the purpose of comparing the means for both traceable and untraceable drawings to the expected value of zero. These t scores enabled us to determine whether the difference between the number of trials a subject reported he needed and the number of trials he actually did need was significantly greater or smaller than zero. The larger this difference was, the more inaccurate was the subject's estimation of his performance. Only the two tests conducted on the means for the traceable drawings in the stress condition were significant (t = 3.41, p < .01, df = 11; t = 3.91, p < .01, df = 11). Apparently, the incongruence of experiencing success within a generally stressful situation resulted in the greatest degree of inaccuracy in the subject's estimation of his performance.

The second measure of the tendency on the part of the subject to present himself as more successful than he had actually been was based on the subject's responses to a questionnaire. (See Appendices E and F.) Each subject was asked to rate his success on each drawing relative to that of his co-subjects. The mean of the scores which each group chose to evaluate its performance are summarized in Table 7 and the corresponding analysis of variance is given in Table 8.

TABLE 7

Mean Scores Representing the
Degree of Success Reported
on Traceable (and Untraceable)
Drawings

	<u>SRESS</u>	<u>NON-STRESS</u>
Normal	33.77 (11.77)	38.38
Neurotic	31.16 (8.21)	37.93

Note. The higher the mean score the more successful the subject evaluated himself.

N = 12 per cell

TABLE 8

Source Table for the Analysis of Variance
Conducted on the Degree of Success
Reported on the Traceable Drawings

SOURCE	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A (normal/neurotic)	28.26	1	28.26	.41
B (stress/non-stress)	388.23	1	388.23	5.48*
AB (subjects/conditions	13.92	1	13.92	.20
ERROR	3043.88	44	69.18	

* $\underline{p} < .05$

Traceable Drawings. The analysis of variance which was performed on the four means pertaining to the traceable drawings indicated that the degree of success reported by both groups in the stress condition was significantly lower than that reported by these groups in the non-stress condition ($F = 5.48$, $p < .05$, $df = (1, 44)$).

A Newman-Keuls test on the scores for the stress and non-stress conditions indicated that both normals and neurotics contributed equally to this variation.

Untraceable Drawings. The t test for independent means computed for the means associated with the untraceable drawings proved insignificant. Evidently, normals and neurotics were equivalent in the degree of success they claimed for a poor performance.

Reaction of Normals and Neurotics to Stress and Non-stress

Although a t test had already been computed on the stress questionnaire in order to determine the validity of our operational definition of stress, a 2×2 analysis of variance was also conducted from the same items in the questionnaire that were used for the t test. This additional statistic enabled us to evaluate to what extent each subject group differed in its reaction to both experimental conditions. The means of the stress scores needed for this computation are given in Table 9. A consideration of these means indicated that in both experimental conditions the neurotic group experienced a greater degree of stress. The analysis of variance (Table 10) indicated that the reaction of the normal subjects to both conditions was significantly different from the reaction of the neurotic subjects to these same two conditions ($F = 6.61$, $p < .05$, $df = (1, 44)$). Also

TABLE 9

Mean Scores on Stress Questionnaire

	<u>STRESS</u>	<u>NON-STRESS</u>
Normal	30.25	39.58
Neurotic	22.08	34.16

Note. A higher score indicates a lesser degree of experienced stress.

N = 12 per cell

TABLE 10

Source Table for the Analysis of Variance
Conducted on the Stress Questionnaire Score

SOURCE	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
A (normal/neurotic)	553.52	1	553.52	6.61*
B (stress/non-stress)	1376.02	1	1376.02	16.44**
AB (subjects/conditions)	22.69	1	22.69	.27
ERROR	3681.75	44	83.68	

* $\underline{p} < .05$

** $\underline{p} < .01$

indicated was a highly significant difference between the degree of stress experienced by both subject groups in the stress condition and the degree of stress experienced by all subjects under the non-stress condition ($F = 16.44$, $p < .01$, $df = (1, 44)$). The lack of a significant interaction between our independent variables indicated that there was no greater variation between the reaction of normals and neurotics to either a stress or a non-stress situation. This may be partly explained by the fact that the amount of stress experienced by normals under the stress condition was similar to the amount of stress experienced by neurotics under the non-stress condition.

A secondary analysis of the data was conducted by means of two Newman-Keuls *t*-tests. With regard to inter-subject variation, the results indicated that each experimental condition contributed equally to this difference. Next, to determine whether or not the variation between conditions was due primarily to one subject group, a second Newman-Keuls test was performed. The results suggested an equally significant difference between each group under each condition. This difference was significant at the .05 level for each group of subjects.

Attempt to Avoid a Potentially Threatening Situation

The secondary hypothesis predicted that a greater number of neurotics would fail to participate as subjects than normals. This tendency was measured by the number of times (either once or twice) that

the subject failed to appear at the scheduled time after agreeing to do so. A chi-square was performed which indicated a significant difference in the tendency toward absenteeism between normals and neurotics. (See Table 11.) The X^2 obtained (5,274) was significant at the .02 level. These data suggest that the neurotics did evidence a much greater tendency to avoid the experimental situation than did our normal subjects.

TABLE 11

Source Table for the Chi Square Conducted on the Degree
of Absenteeism Displayed by Normals and Neurotics

	One Absence	Two Absences	
Normal	7	0	7
Neurotic	3	5	8
	10	5	15

CHAPTER FIVE

DISCUSSION

The results summarized in the previous chapter have yet to be evaluated in light of past research and implications for future studies. In this chapter, an attempt will be made to provide those results with some meaning.

While it had been established that our subject groups were significantly different from each other, it was considered necessary to determine exactly what this differentiation signified in terms of personality dimensions. One aspect of the neurotic personality as measured by the Neuroticism Scale Questionnaire was his propensity to adopt unrealistic, emotional goals. The finding that neurotics admitted to a greater degree of stress may have been indicative of the unreasonable goals they had chosen for themselves. Another dimension of neuroticism measured by the N. S. Q. was personality rigidity. These neurotic individuals were thought to be bound by their own habits insofar as they were unable to accept or adapt to various situations. Both experimental conditions required a great deal of adaptation to a situation over which the subject had no control. It was not surprising, then, to discover that the normal subjects were apparently less threatened by these demands as evidenced by the fact that they admitted to a smaller degree of stress in both conditions. The N. S. Q. further defined the neurotic

individual as being more sensitive to social approval and disapproval than his normal peer. Significantly, the approval of one's peers was one of the variables which changed with respect to each experimental condition. Perhaps, the greater degree of stress admitted to by the neurotic was in reaction to his concern for approval. Significantly, in the stress condition where the experience of disapproval was pre-arranged, the neurotic did appear to experience more stress. The last three dimensions of neuroticism, (guilt, frustration, and immaturity) were considered by the creators of the N. S. Q. as aspects of anxiety. This anxiety was conceptualized in terms of inferiority feelings, low frustration tolerance, and inability to deal with frustration and guilt. The present study discovered an apparent relationship between these personality traits and various others including rationalization, persistence, and the accuracy of one's self-estimation.

As previously mentioned, the neurotic subjects consistently appeared more highly stressed than the normal subjects regardless of the experimental condition they were assigned to. An important aspect of this datum was yet to be considered. The degree of stress which each person experienced was not determined by an objective evaluation by the experimenter or by some sort of anxiety scale. The subject, himself, made an evaluation of his feelings during the experiment. One must consider, then, to what extent a higher stress score was representative of a greater willingness to indicate environmental obstacles. The

neurotic subject, therefore, was able to explain his failure on the basis of the stress to which he was exposed. A more conservative interpretation of these scores (Table 9) indicated that neurotics were generally more stressed than normals. This possibility, also, would have been consistent with Adler's conception of the neurotic. Adler's neurotic individual is a person who characteristically makes excuses to avoid confronting inferiority feelings. The goal of overcoming these feelings is, by definition, always present in the neurotic, whereas the normal is not defensive and does not experience insecurity as a "way of life." If this is so, what the normal individual perceived as a relatively non-threatening, non-stressful experience may well have been perceived by the neurotic as another situation in which his already delicately balanced sense of confidence and self-assurance were to be threatened.

The greater degree of stress experienced by the neurotics in the non-stress condition was reflected in the greater number of excuses made by these subjects in comparison with the normal subjects. The neurotic traits of low frustration tolerance and personality rigidity contributed to this tendency which neurotics displayed after a non-stress experience. This inability to deal with frustration evidently limited his effectiveness in meeting the demands made upon him while his inherent rigidity allowed him to react in characteristic ways. Thus, he was free to explain the situation away instead of confronting it. The neurotic appeared to react as though he was always stressed. Apparently,

the tendency to make excuses and emphasize obstacles was ever-present. The neurotic's reaction to these experimental situations, like his reaction to life in general, revealed a readiness to act defensively. Specifically, he chose to feel limited by these circumstances instead of allowing the possibilities inherent therein to work for him. As predicted, the tendency toward excuse-making was also stronger in the neurotic in the stress condition. These results lent support to the findings arrived at by Chodoroff in his study (1956). He found that the more threatened the individual felt the more defensive he became. Contrary to expectation, the "yes-but" personality of the neurotic did not manifest itself to a particularly greater degree in the stress condition. In fact, it was in the non-stress condition that a greater differentiation between subjects was noted. Apparently, while both subject groups reacted similarly to stress, the neurotic reacted with almost equal defensiveness to a situation which did not demand it. The data also suggested that the neurotic tendency to make excuses was fairly stable across conditions while the propensity toward excuse-making for the normal was governed primarily by situational variables. The neurotic appeared to create his own anxiety regardless of the condition he was exposed to. The normal, on the other hand, increased his defensiveness only when his reliance on himself proved inadequate.

Thus far, the data had revealed a relationship between diagnostic status and experienced stress on the one hand, and rationalization on the

other. A further consideration of the results suggested a relationship between our independent variables and the approach to the solution of a problem. Normals proved more successful in solving the traceable drawings in both conditions as indicated by their need for a fewer number of trials. This tendency to be more effective and efficient subjects was also found to be true of those individuals labelled "internals." Phares and Davies (1967) discovered that these "internals" were more successful in the experimental task because they used more of the resources available to them. These findings lent more weight to the assumed similarity between normals and "internals." Based on experimenter observation, those who finished earlier displayed a more efficient approach to the problem "at hand." Their approach seemed characteristically more analytical in nature. Apparently, the normal individual who considered himself less determined by circumstances viewed himself as a major resource in the successful completion of a task. Those who required a greater length of time to complete the task employed more of a "trial and error" approach as though hoping to "stumble" upon the solution.

Another interesting finding indicated that normals in the stress condition displayed the tendency to be more successful than normals under non-stress in the completion of the traceable drawings. Neurotics, on the other hand, appeared slightly more successful on these tasks in the non-stress experience. The possibility existed that neurotics in the stress condition were more influenced than normals by

their failure on the other tasks present in the same situation. Once threatened, they performed less efficiently and needed more trials to succeed on those tasks which they were capable of solving. Another possibility which must be considered is that normals increased their diligence while under pressure because they accepted the competition of their "peers" as a challenge. Unfortunately, the performance on the traceable drawings did not greatly vary with the experimental condition for either group. Perhaps, had our subject sample been larger, these tendencies would have proven significant.

With regard to the nature of persistence under pressure, it was the normal individual who persisted more consistently. The results indicated that these normals tried harder and exhibited a greater need to succeed as evidenced by the fact that normals made a greater number of attempts to complete an impossible task. This type of behavior was found to be more typical of individuals who accepted more responsibility for their success and failure (Atkinson and Litwin, 1960). In the present research, the neurotic, like Atkinson and Litwin's external subject could always blame his failure on the stressful atmosphere of the experiment or the overbearing presence of his two "co-subjects." Phares, Davies, and Ritchie (1968) found that externals reacted less defensively to a negative personality profile because they accepted less responsibility for the course of their lives.

Thus far, the general predictions made concerning the defensive style of the neurotic have been validated. It was, however, further hypothesized that this defensiveness would be reflected by the subject's accuracy in an estimation of his performance. While the findings previously summarized offered partial support for our hypothesis, some conflicting evidence was gained from the analysis of the data. The first measure of the tendency to present oneself as having been more successful than was actually the case indicated that both normals and neurotics underestimated their success on the incompleting tasks. This finding contradicted an earlier study by Eriksen (1952) which found that individuals reacted to a failure experience by defensive forgetting. Significantly, the neurotic in the present study exhibited the tendency to underestimate himself to a lesser degree. In other words, he evaluated his performance slightly more favorably than did the normal subject. Moreover, it was found that even for the completed tasks, both subject groups rated their performance on these drawings more favorably when they occurred in the non-stress condition. The experience of success which was consistent throughout this condition evidently led to a strengthening of feelings of self-worth and superiority thereby influencing these subjects to evaluate themselves as even more successful than they were.

Interestingly, a significant degree of inaccuracy involved the traceable drawings of the stress condition. These findings were primarily evaluated in light of the haphazard manner in which a number of

subjects completed this questionnaire. Upon consideration of the responses made on this form it was obvious that both subject groups had confused those tasks which they completed with those tasks which they failed to complete. Another possible explanation of this phenomenon is that, after failing on three drawings, each individual's concept of how successfully he performed was changed. This interpretation lent some support to the studies done by Diller (1952) and Levanway (1955) although the present study was not directly measuring self-concept. By the same token, this interpretation would serve to somewhat attenuate the conclusions made by Suinn and Geiger (1956) that one's self-concept was a very stable trait.

The second measure of defensive self-report was evaluated on the basis of each subject's own evaluation of his performance in comparison with that of his co-subjects. As hypothesized, the neurotic did describe himself as being more successful than he was on the untraceable drawings. Chodorkoff's study (1956) was once more substantiated.

Of these two measures, the second was considered a more valid one for two reasons. First, it was much easier for the subject responding on this measure to intentionally present himself in a more favorable light. Second, the fact that he was comparing his performance with that of his "co-subjects" was made even more obvious.

The next portion of the hypothesis regarding defensive self-report was not confirmed. It had been predicted that normals would be more accurate in their estimation of their performance. On the contrary, neurotics were consistently more accurate in evaluating their performance in the stress condition. A possible explanation for this phenomenon is that the neurotic was less inclined to distort his performance because he did not feel as responsible for his behavior. If so, these data are consistent with those obtained by Phares, Ritchie, and Davies in their study (1968). As in the tendency toward excuse-making, the neurotic's self-evaluation varied less across the two experimental conditions than that of our normal subject. As predicted, there was no difference between subject groups in the accuracy of their evaluations involving those tasks completed in the non-stress condition.

Lastly, support was gained for the third hypothesis that neurotics, more so than normals, would fail to appear at the scheduled time in order to avoid becoming subjects. To participate meant to risk performing poorly. Normals, who are more inclined to consider themselves rather than circumstances the determinant of future events, were less threatened by a possible participation in the experiment.

Thus far, a number of distinctions between the performance of the normal and the neurotic have been noted. An attempt will be made here to consider these differentiations in light of their relevance to Adlerian

theory. The behavior of the normal individual throughout this study was suggestive of a generally responsible individual who reacted favorably to a challenge. When confronted with a difficult problem, he relied on his own abilities to arrive at a solution. Moreover, his approach to this solution was characterized by diligent and analytical efforts. Similarly, Adler theorized that the normal, when confronted with feelings of inferiority, would react by compensating for his inadequacies. The neurotic, on the other hand, was conceptualized as an individual who would not accept the challenge which life offered. Instead, he selects and maintains symptoms until they impress him as real obstacles. Significantly, the neurotic in the present research utilized his experience of stress as a symptom. If, then, his performance was characterized by less persistence, less success, and a greater number of excuses, this could and should be understood in terms of the stress he was experiencing. The neurotic life style is a self-fulfilling prophecy. He must fail in order to prove the existence of the obstacles he has indicated.

Another characteristic of the neurotic as outlined by Adler is his continual struggle to maintain a sense of stability and superiority through the use of personally created safeguards. He makes contact with reality in order to modify it in accordance with his neurotic goals. Again, the data lent support to this theory. The neurotic reacted to a non-stress condition in much the same manner that he reacted to a stress condition. Apparently, even when the situation confronting him offered

possibilities for new experiences, the neurotic chose not to modify his established behavior patterns. Interestingly, the neurotic performed as though it was necessary that the situation conform to his private goals whereas the normal individual reacted in accordance with situational demands. A specific example of this tendency indicated that although the neurotic appeared more threatened and insecure in both experimental conditions, his behavior in reaction to these feelings varied less with the circumstances he was exposed to. It was the normal subject who exhibited the tendency to make significantly more excuses after a stress experience than after a non-stress experience. Moreover, it was the normal individual who displayed the stronger tendency to either underestimate or overestimate the quality of a performance in which he failed to complete the required task. Adler's theory profiled the neurotic individual as one who not only avoided threatening situations but who consistently displayed a "cowardly" approach to life. Typical of this neurotic "life style" were the number of excuses he had available to "explain away" his failures or inadequacies. These Adlerian concepts were supported by the data. What did not receive unequivocal support, however, were those hypotheses which followed from this theoretical foundation. The neurotic, apparently, did not greatly change the quality of his reaction according to the degree of stress he experienced. He emerged as a more rigid personality whose defensive reactions were

somewhat more stable than those of the normal individual. Evidently, the behavior of the normal person was more situation-specific while that of the neurotic was understandable in terms of previously established and habitual reaction tendencies.

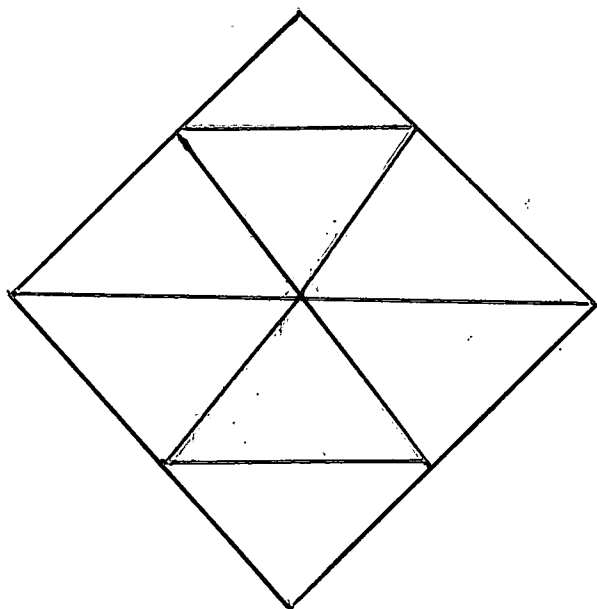
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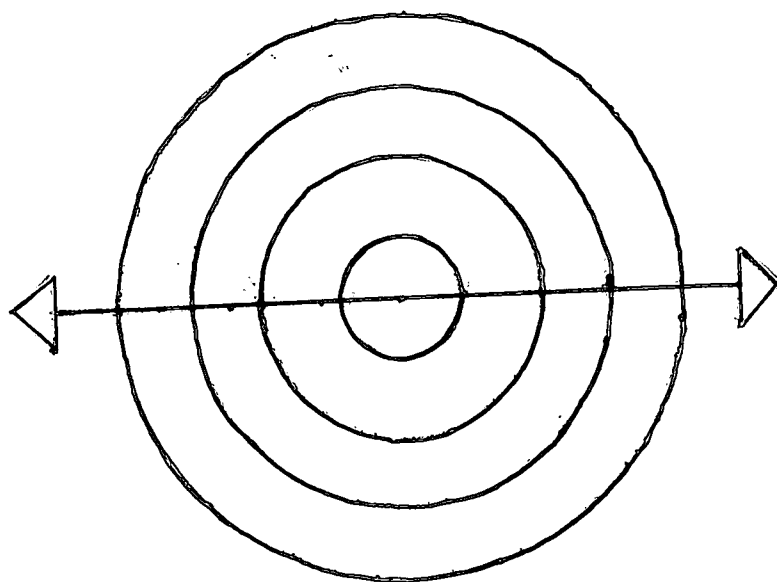
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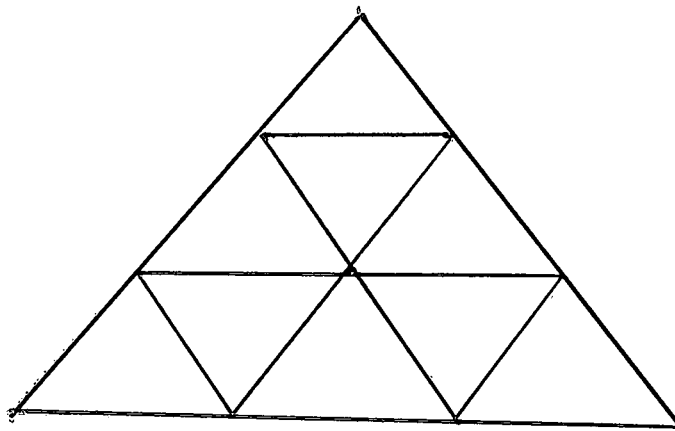
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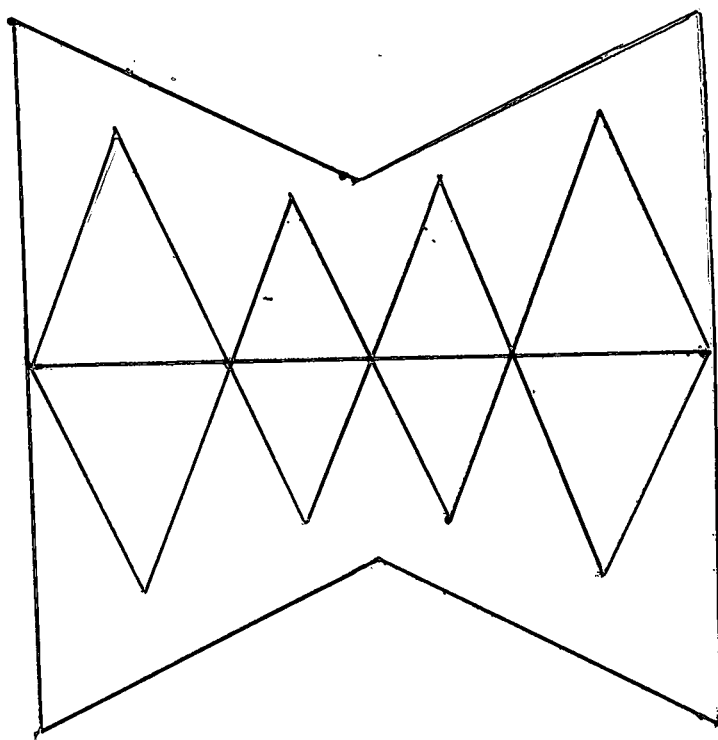
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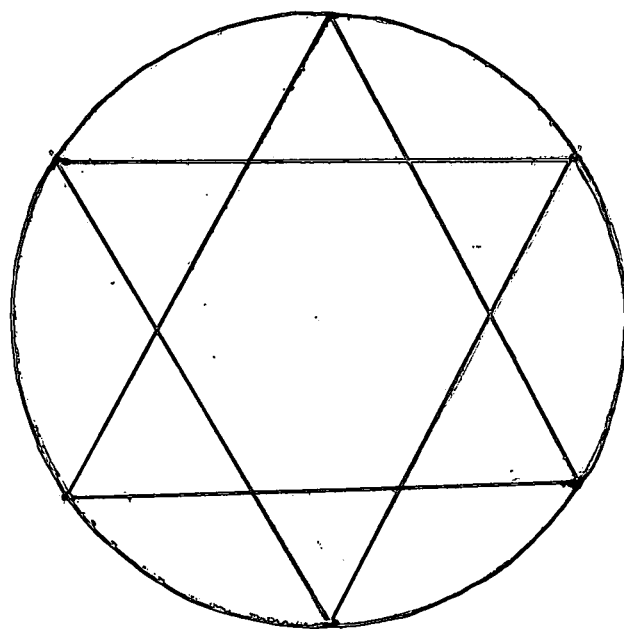
Appendix A
Traceable Drawings

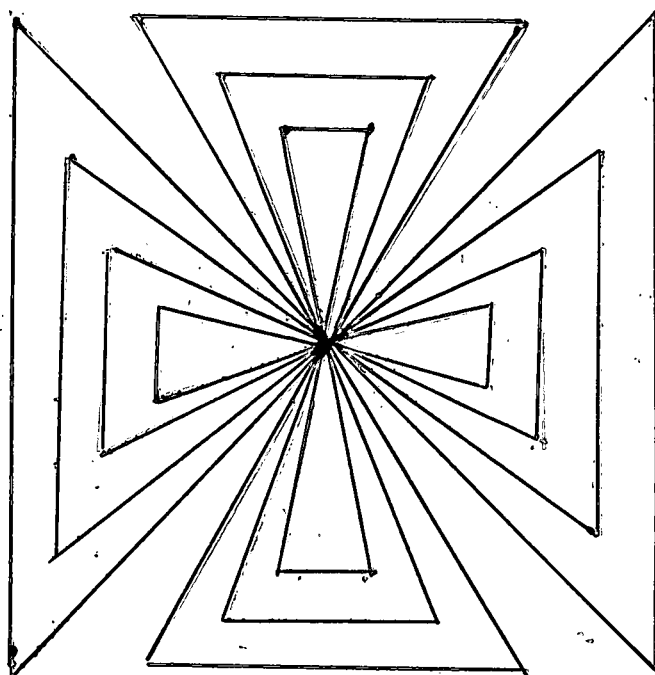




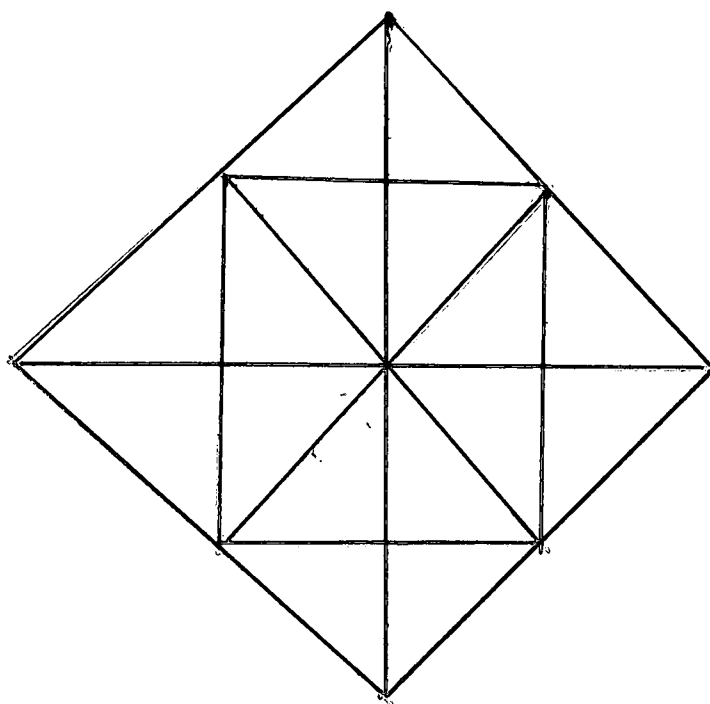


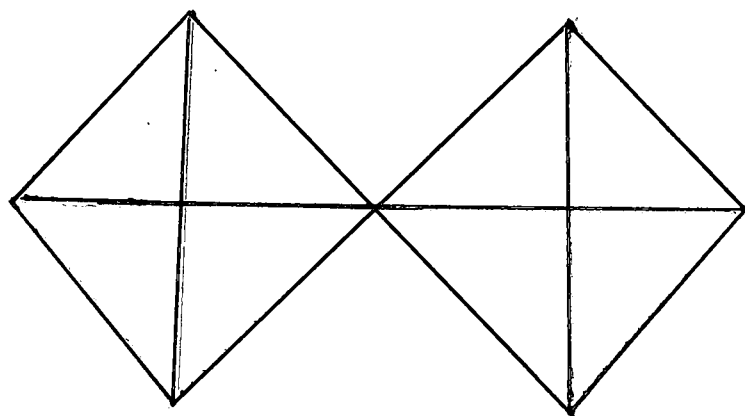


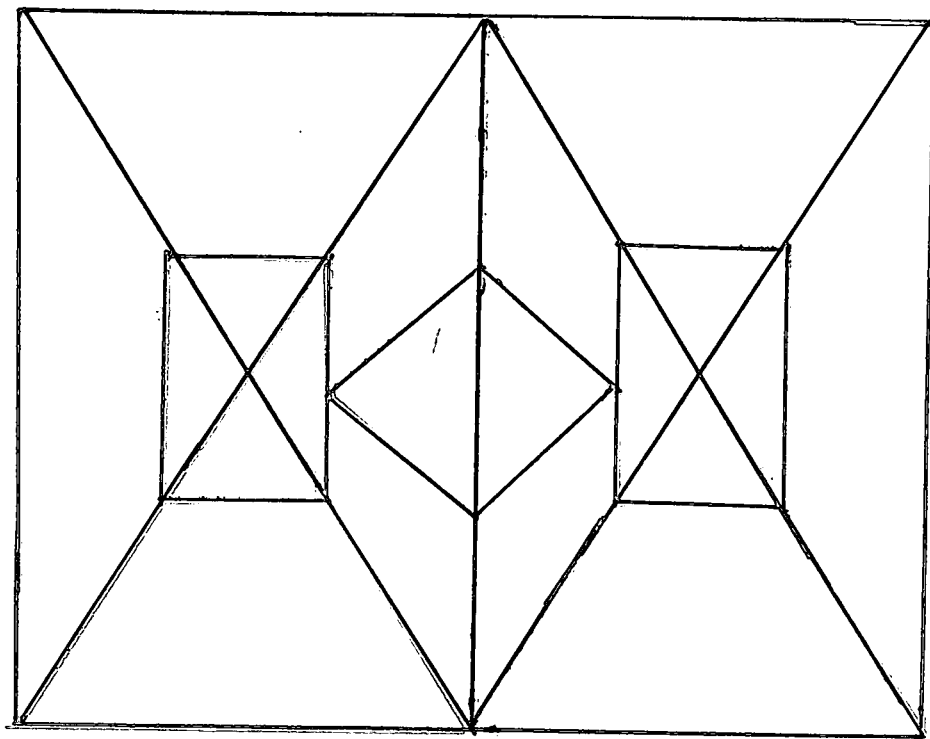




Appendix B
Untraceable Drawings







Appendix C

Adjective Check List for Verbal Defensiveness²

²Those adjectives previously judged as indicative of verbal defensiveness are indicated by an asterisk.

2. Carefully consider the following list of adjectives. Place a check mark on the line in front of each adjective which describes how you felt in the experiment recently concluded. Concentrate on those aspects of your experience which you felt had a direct influence on your performance of the experimental task. Be as candid as possible.

<input type="checkbox"/> absent minded	<input type="checkbox"/> distractible	<input type="checkbox"/> nervous*
<input type="checkbox"/> aggressive	<input type="checkbox"/> distrustful*	<input type="checkbox"/> organized
<input type="checkbox"/> alert	<input type="checkbox"/> emotional	<input type="checkbox"/> persistent
<input type="checkbox"/> anxious*	<input type="checkbox"/> energetic	<input type="checkbox"/> preoccupied*
<input type="checkbox"/> apathetic	<input type="checkbox"/> fault finding*	<input type="checkbox"/> quarrelsome*
<input type="checkbox"/> argumentative*	<input type="checkbox"/> fearful	<input type="checkbox"/> reckless*
<input type="checkbox"/> awkward	<input type="checkbox"/> gloomy	<input type="checkbox"/> resentful
<input type="checkbox"/> boastful	<input type="checkbox"/> hasty	<input type="checkbox"/> resourceful
<input type="checkbox"/> calm	<input type="checkbox"/> high strung	<input type="checkbox"/> restless*
<input type="checkbox"/> capable	<input type="checkbox"/> honest	<input type="checkbox"/> rigid*
<input type="checkbox"/> careless*	<input type="checkbox"/> hostile*	<input type="checkbox"/> self-controlled
<input type="checkbox"/> coarse	<input type="checkbox"/> hurried	<input type="checkbox"/> sensitive
<input type="checkbox"/> complicated	<input type="checkbox"/> imaginative	<input type="checkbox"/> sharp-witted
<input type="checkbox"/> confident	<input type="checkbox"/> impatient	<input type="checkbox"/> slipshod
<input type="checkbox"/> confused*	<input type="checkbox"/> impulsive*	<input type="checkbox"/> spontaneous
<input type="checkbox"/> cynical	<input type="checkbox"/> indifferent	<input type="checkbox"/> stubborn
<input type="checkbox"/> defensive*	<input type="checkbox"/> individualistic	<input type="checkbox"/> suspicious
<input type="checkbox"/> despondent	<input type="checkbox"/> ingenious	<input type="checkbox"/> tense*
<input type="checkbox"/> determined	<input type="checkbox"/> inventive	<input type="checkbox"/> touchy
<input type="checkbox"/> disorderly	<input type="checkbox"/> irritable*	<input type="checkbox"/> wary
<input type="checkbox"/> dissatisfied	<input type="checkbox"/> moody	<input type="checkbox"/> worrying

Appendix D
Questionnaire Measuring Stress³

³Those items in the questionnaire which were used to evaluate the subject's experience of stress are indicated by an asterisk.

Appendix D

Below you will find a series of questions. Beneath each question is a series of dots representing a continuum along some dimension. Consider each question carefully and then put a line through the dot which best corresponds to your position on the continuum.

1. Which adjective better describes how you handled yourself as a subject?
awkward capable
2. How conscientious were you in completing the task?
very very
unconscientious conscientious
- *3. How did you feel as you were working on the experimental task?
very insecure very secure
4. How interesting did you find the experiment?
very dull very interesting
5. How efficient were you in completing the task?
very inefficient very efficient
- *6. How would you describe the overall atmosphere of this experiment?
tense relaxed
7. How satisfied did you feel about your performance of the assigned task?
very
dissatisfied very satisfied
8. How clear did you find the directions for this experiment?
very unclear very clear

9. How would you describe the behavior of your co-subjects toward you?

threatening supportive

*10. How did the presence of other subjects in the room make you feel?

very defensive totally non-defensive

11. How conscientious would you rate your co-subjects in the completion of the experimental task?

very unconscientious very conscientious

*12. How would you describe the nature of the experimental conditions?

very stressful very non-stressful

13. How persevering did you remain in your attempts to redraw the pictures?

very easily discouraged very persevering

*14. How would you describe your feeling throughout the experiment?

very anxious very relaxed

15. Which adjective better describes your performance of the task?

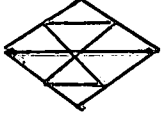
rigid flexible

Appendix E

Questionnaire Measuring Defensive Self-Report
on the Traceable Drawings

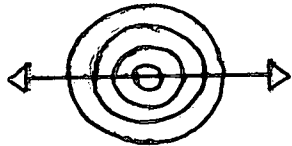
Appendix E

Below you will find a series of questions. Some of these are followed by a dash to be filled in with the appropriate number. Beneath other questions is a series of dots representing a continuum along some dimension. Consider each question carefully and then put a line through the dot which best corresponds to your position on the continuum.

1. On this drawing  how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

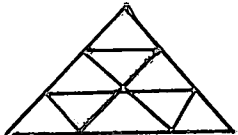
2. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

very
unsuccessful very
successful

3. On this drawing  how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

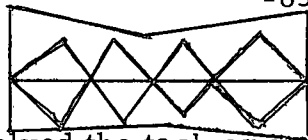
4. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

very
unsuccessful very
successful

5. On this drawing  how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

6. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

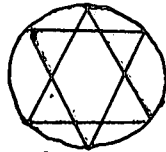
very
unsuccessful very
successful



7. On this drawing how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

8. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

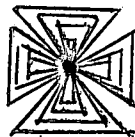
very unsuccessful very successful



9. On this drawing how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

10. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

very unsuccessful very successful



11. On this drawing how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

12. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

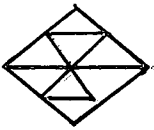
very unsuccessful very successful

Appendix F

Questionnaire Measuring Defensive Self-Report on the Untraceable Drawings

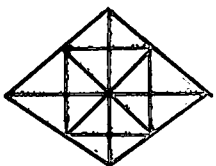
Appendix F

Below you will find a series of questions. Some of these are followed by a dash to be filled in with the appropriate number. Beneath other questions is a series of dots representing a continuum along some dimension. Consider each question carefully and then put a line through the dot which best corresponds to your position on the continuum.

1. On this drawing  how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

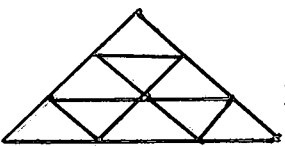
2. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

very
unsuccessful very
successful

3. On this drawing  how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

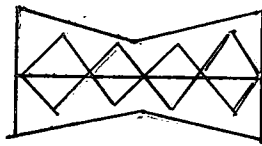
4. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

very
unsuccessful very
successful

5. On this drawing  how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

6. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

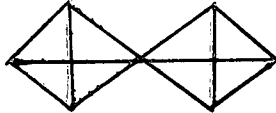
very
unsuccessful very
successful



7. On this drawing how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

8. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

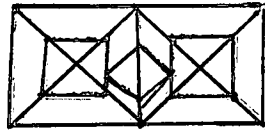
very unsuccessful very successful



9. On this drawing how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

10. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

very unsuccessful very successful



11. On this drawing how many trials did you complete before you either solved the task or were stopped by the experimenter? _____

12. How successful were you in correctly redrawing the above design in comparison with your co-subjects?

very unsuccessful very successful

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