

THE UNIVERSITY OF CALGARY

A STUDY OF REPRESSION-SENSITIZATION
IN INSTITUTIONALIZED MALES

BY

RONALD C. HARSHMAN

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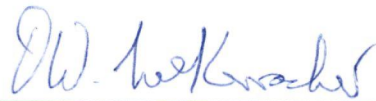
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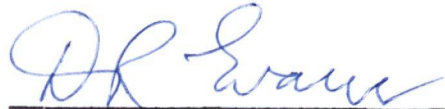
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THE UNIVERSITY OF CALGARY
FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled, "A Study of Repression-Sensitization in Institutionalized Males," submitted by Ronald C. Harshman in partial fulfillment of the requirements for the degree of Master of Education.



Dr. D. W. McKerracher - Supervisor
Department of Educational Psychology



Dr. D. R. Evans
Department of Educational Psychology



Dr. A. B. S. Meikle - External
Department of Psychology

DATE

May 7, 1971

Abstract

The present study was designed to investigate the repression-sensitization dimension of personality within a population of institutionalized, adult males. Subjects (N=27) were obtained from the Alberta Hospital at Ponoka, the Deerhome Provincial Institution at Red Deer, and the Vocational and Rehabilitation Research Institute at Calgary. The following eight instruments were administered to all subjects: the Eysenck Personality Inventory (EPI); the Calgary Biographical Questionnaire (consisting of Byrne's Repression-Sensitization Scale, as well as Welsh's A and R Scales of the MMPI); the Colored Progressive Matrices; the Standard Progressive Matrices; the Aggressive, Sexual, Collective Esoteric (A.S.C.) Verbal Association Test; the Rorschach Inkblot Test (Froced-Choice Method); the Calgary Projective Test of Perceptual Defensiveness (CPPD); and the Motivational Distortion Scale of the 16PF.

It was necessary to conduct a multivariate analysis of variance in order to validate the procedure of pooling all subjects into one large sample of institutionalized individuals. Correlational as well as first and second-order factor analyses were conducted.

Results of the present study indicate that those individuals who score as repressors on the R-S Scale are more intelligent, more stable, more introverted, younger, and more able to respond openly to anxiety-provoking stimuli, than are those individuals who score as sensitizers.

Furthermore, the results of the present study indicate that the new Calgary Projective Test of Perceptual Defensiveness is an effective instrument, which allows for a projective-type measure to be utilized in

order to assess an individual's overall adjustment level. The need for both further research and standardization of this instrument is clearly indicated.

Subjects did not respond as predicted on either the EPI Lie Scale or the CPPD. These findings were explained on the basis that these instruments were measuring the individual's ability to cope with anxiety-provoking stimuli, whereas it was originally thought that they would measure his propensity to distort in order to give a socially more acceptable picture of himself. It will be necessary for future research to either confirm or dispute this hypothesis.

Acknowledgements

"Non nobis solum" is a Latin phrase which is, most typically, translated into the English, "Not for ourselves alone." The fact that the writer was confronted daily with motto, inscribed in the archways of the high school which he attended, undoubtedly had a great deal of influence in establishing clinical psychology as his eventual choice for a professional career. In recounting the previous experiences which have culminated in the completion of the present text, the author has experienced many feelings which suggested to him, a slightly altered translation for the above-mentioned principle. In looking back over the past several years, it has become abundantly clear that this stage of one's professional career is reached, "Non nobis solum" - not BY ourselves alone.

It would be impossible for me to list all of those persons who have, in some way, assisted me in the reaching of this plateau, and to whom I should like to express my deepest gratitude. Limitations of space will allow me to only name a few of them, but non-inclusion in this list does not, in any manner, decrease the sincerity or depth of my appreciation.

It is to Dr. D. W. McKerracher, my thesis supervisor, that I should like to convey my deepest and most sincere feelings of gratitude. Without his constant encouragement, direction, and support, the completion of this thesis would not have been possible. For the many hours of supervision, guidance, and what developed into a very warm friendship, I can only say, "Thank you."

I feel it only fitting to express my very sincere appreciation to a small, autistic girl named Jayne, who was the first patient I ever worked with at Thistletown Children's Hospital in Toronto. The progress which we made together certainly inspired and convinced me to remain in this field.

I should also like to express my gratitude to the superintendents and directors of the Alberta Hospital at Ponoka, the Deerhome Institution, and the Vocational and Rehabilitation Research Institute, for extending to me their kind hospitality and co-operation throughout the entire implimentation of the present study. I am also indebted to the staffs and patients at these institutions, without whose assistance and co-operation this study would not have been possible.

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CHAPTER I

Introduction and Statement of the Problem

Introduction of the Term "Repression-Sensitization"

According to Byrne (1964a), repression-sensitization is a uni-dimensional categorization which has emerged from perceptual research carried out in the 1940's. It encompasses many of the diverse defense mechanisms which were first discussed by the psychoanalytic theorists. The "repression" end of this continuum consists of those responses which are concerned with the avoidance of anxiety-arousing stimuli and their consequents. The defense mechanisms employed include repression, denial, and many types of rationalization. The "sensitization" end of the continuum is composed of those responses which attempt to reduce anxiety by means of either approaching or controlling the offensive stimuli and their consequents. These responses are found in conjunction with the defense mechanisms of ruminative worrying and obsessive behaviors.

Gordon (1957) was the first investigator to employ the terms "repressor" and "sensitizer." He defined a "repressor" as one who does not appear to be able to verbalize unpleasant, disturbing, or threatening aspects of his experience." Gordon distinguishes between repression and forgetting by stating that the former is selective, and is only operative when the material involved has a 'negative hedonic value' to the individual. On the other hand, forgetting replaces repression when "the negative hedonic value changes to neutral or positive."

A "sensitizer" was defined as "one who is sensitive to threat, being anxious and having relatively few defenses." This differentiation between repressors and sensitizers indicated that the former would be characterized by differential recall for threatening and non-threatening stimuli, and also by high degrees of defensiveness and little manifest anxiety. The latter group, on the other hand, would consist of those individuals who evidence a great amount of anxiety, little defensiveness, and whose recall for threatening stimuli would be sharpened rather than depressed.

The Study of Perceptual Defensiveness

The concept of perceptual defense was given its original impetus in psychological literature by Bruner and Postman (1947a). Perceptual defense is seen as a phenomenon by which an individual is shielded from the perception of inimical stimuli, and hence, it functions in such a manner as to protect the individual from the anxiety-laden stimuli (Mackinnon & Dukes, 1962).

Eriksen (1963) claims that a great amount of interest was generated in the area of motivational-personality research because 'academic psychology' was becoming more and more receptive to the idea that motivations, although they were outside the awareness of the individual, could nevertheless affect behavior to a very large extent. Eriksen states that "in many ways need-in-perception experimentation was stimulated by the clinician's desire to demonstrate experimentally what he felt he already knew as truth." A more complete discussion of the research which has been done in the area of perceptual defensiveness is to be found in the next chapter of this text.

The Purpose of the Present Study

The reported research which is related to the repression-sensitization dimension of personality is both interesting and productive. Byrne (1964a) proposes that meaningful research which increases the amount of knowledge pertaining to one aspect of personality should be continued because "it is inevitable that the knowledge will have relevance to all aspects of personality." The present investigation was, therefore, designed to examine the repression-sensitization dimension of personality within an institutionalized population.

Most of the previously recorded research had been conducted using either student or other 'normal' populations as subjects. It was thought that as the dimension of personality under examination plays a major role in the adaptive behavior of individuals, it would be fruitful to examine its mode of functioning, as well as its other personality correlates within an abnormal population, composed of those individuals who had been unable to adapt themselves to a regular community life.

In addition to examining this aspect of personality within the said population, the author also wished to examine empirically the utility of three new instruments (McKerracher, 1970a), which had been designed both to measure the repression-sensitization dimension, and also to demonstrate the operation of perceptual defensiveness. The A.S.C. Verbal Association Test, the Calgary Projective Test of Perceptual Defensiveness, and the Forced-Choice Method for the Rorschach Inkblot Test were all developed hopefully to make available, additional measures of repression-sensitization which would supplement the questionnaire materials already at hand. The making available of projective measuring

instruments was seen as a very valuable addition to the testing repertoire, as it was assumed that the projective nature of the procedures would be able to break through the verbal-type defenses, and thus allow the tester the opportunity of observing the 'true' personality dynamics of the subject. Another thought was related to the idea that the process of repression-sensitization could possibly be better understood if the investigator were to examine both verbal and perceptual defensiveness. Although these new instruments still require a great amount of further investigation and refinement, it was hoped that the present study would be able to provide some groundwork information, as well as some indications and implications for further developmental research.

Specific Aims of the Present Study

The present investigation was planned as a study of the repression-sensitization dimension of personality, as it is found in an institutionalized population of adult males. More pointedly, it was the intention of the author to determine whether this facet of personality results from one specific and unique factor, or if alternatively, repression-sensitization is intercorrelated with other measurable personality traits.

As a result of the present investigation, it was hoped that the following questions would be answered:

- a) Is there an autonomous factor of repressiveness (as measured by the Repression-Sensitization type of scale) to be found in this sample of tests and subjects?
- b) If so, what are the various components of this factor?
- c) If there is not one general factor, are there several specific factors involved?

d) If the latter is true, what are these various factors, and how are they composed?

e) Are the findings from an institutionalized population comparable with those from a 'normal' population?

Hypotheses to be Tested

In consequence to the above questions, only two major deductive hypotheses can be clearly formulated:

a) There is no autonomous factor of repressiveness (as measured by the Repression-Sensitization Scale type of test: Byrne, Cattell, Eysenck), which is distinct from other measurable personality variables found in this sample of tests and subjects;

b) There are no differences in the mean results obtained on these measures, from an institutionalized population and from a 'normal' population (as supplied by the published test norms).

In regards to the new tests which were being piloted in the present study, the following null hypotheses were formulated:

a) There is no relationship between the scores obtained on the Calgary Projective Test of Perceptual Defensiveness and the scores obtained on the published repression-sensitization measures utilized;

b) There is no relationship between the scores obtained on the A.S.C. Verbal Association Test and the scores obtained on the published repression-sensitization measures utilized;

c) There is no relationship between the scores obtained on the Rorschach Inkblot Test, Forced-Choice Method and the scores obtained on the published repression-sensitization measures utilized;

d) There is no relationship between the scores obtained on the 'Emotionally-Loaded' and the 'Distorted' sections of the Calgary Projective Test of Perceptual Defensiveness.

The three new personality measures referred to in the above discussion will be described in greater detail in a later chapter of this text.

Chapter II

Review of the Literature

The Study of Repression

The study of repression is considered to have been instigated by Freud. The conceptualization of this process was basic to psychoanalytic theory, and as early as 1914, Freud is reported to have said that "repression is the foundation stone on which the whole structure of psychoanalysis rests" (Mackinnon & Dukes, 1962). Prior to Freud's final formulation of personality theory, in terms of the id, ego, and the superego, he had conceived the idea that the mind consisted of three regions. These were to be known as consciousness, preconsciousness, and lastly, unconsciousness. The preconscious region consisted of psychological material that could, if necessary, become conscious. The psychological material that was contained in the unconscious, however, was regarded as being relatively inaccessible to conscious awareness, and was said to be in a state of repression (Hall & Lindzey, 1963). With the revision of his theory of personality, Freud retained the idea of repression, and it was then perceived as one of the defense mechanisms of the ego.

Regression is said to occur when an object-choice that arouses an undue amount of alarm or anxiety, is forced out of consciousness by an anit-cathexis. Repressions are difficult to abolish, according to psychoanalytic thought, because the individual must be able to convince himself that the anticipated danger no longer exists, and he is unable to

do this because until the repression is lifted, he is unable realistically to test his assumption.

Freud distinguished between two phases of repression; one which he considered to be a 'primal repression,' and the other which he referred to as 'repression proper.' Primal repression consists of "a denial of entry into consciousness to the mental (ideational) presentation of the instinct" (Hilgard, 1956). The second phase, or repression proper, is concerned with mental derivatives of the repressed instinct-presentation, or other trains of thought which are associated with it. It can thus be seen that Freud's concept of repression proper presupposed a primal repression, and therefore, the pattern for all later repressions is established early in life.

Munroe (1955) points out that Freud's conception of repression changed from being conceptualized as the cause of anxiety to its being the result of anxiety. Whereas anxiety was originally believed to be an inborn response to present danger, it was later thought that it functioned as a signal of potential danger. It was believed that the individual possesses many ways of avoiding the danger, and repression is only one of them. Repression is distinguished from suppression in that the latter mechanism of defense involves a voluntary refusal to act upon impulse, whereas the former mechanism results in the inaccessibility of certain material to recovery by conscious efforts.

It would be impossible within the context of the present text, to include a very intensive review of the relevant literature, pertaining to the study of repression. The studies which are reviewed have been chosen as being representative of both the past and present positions

held by prominent investigators, who concern themselves with this particular area of psychological research.

According to Mackinnon and Dukes (1962), the first experiment in which the essential dynamics of repression were reproduced in the laboratory, was conducted by Zeigarnik (1927). She presented her subjects with a series of simple tasks, permitted them to finish half of them, but then interrupted the subjects while they were completing the others. Each task was then put away out of sight whether it had been completed or not. At the conclusion of the series, each subject was asked to recall the tasks upon which he had worked. The results of this study have become widely known as the 'Zeigarnik effect,' and in essence, it was found that the majority of subjects recalled more of the interrupted tasks than the completed ones. Zeigarnik's explanation was that the tension systems associated with the completed tasks had been discharged upon their completion; whereas the systems corresponding to the uncompleted ones were not discharged, and therefore, constituted the basis for the greater recall.

Zeigarnik also reported that there were several conditions upon which uncompleted tasks were not favored in recall, and she referred to one of these exceptions as "repressed tasks." In reference to this type of task, Zeigarnik (1927) claimed that the subjects had sometimes been given difficult tasks which they were unable to perform. In these instances, the subjects experienced a feeling of inferiority, and if these tasks were interrupted, the subjects assumed that the experimenter had detected their inferiority. The author goes on to state that at the time of recall, "the problems which in this sense could not be done, wereextremely often forgotten."

Zeller (1963a) begins his review of the literature with an article by Colgrave (1898), in which the latter has introduced the questionnaire method for studying repression. He simply asked subjects whether pleasant or unpleasant experiences were easier to remember. He then concluded from his results that pleasant items were better recalled than unpleasant ones. Zeller goes on to cite other studies which employ different methods for studying repression, but he concludes that no experiment (up to that time) had fulfilled his criteria for a laboratory test of repression. He claims that "no test of repression can be considered adequate until the removal of the repression factor has resulted in the restoration to consciousness of the repressed material." He then presents a proposed experimental design to test the theory of repression.

In his follow-up article, Zeller (1963b) reports on two studies which were conducted in accordance with his above-mentioned proposal. In both of these experiments, college students of both sexes were employed as subjects. Zeller states that the experiments were designed to "test the hypothesis that repression is an active process which inhibits memory for previously known material which has become unacceptable to the individual, but that the memory for the material may be restored by reducing the ego threat associated with the original material." In essence Zeller's results can be described as follows: a) induced failure at a task, when not indicated as specific to that task, serves to reduce the ability to recall material which was previously known, and which has become associated with the failure task; b) this reduced ability perseveres for some time; c) induced success at the same associated task serves to increase the ability to recall the original material; d) implied failure

is as disruptive to memory as is specific knowledge of failure; e) failure indicated as specific to a given task has no measurable effect on the ability to perform other tasks; and, f) although other explanations cannot be ruled out, the experiments fulfilled the requirements of an analogue of Freudian repression.

In an investigation of the repression hypothesis utilizing hypothetically induced conflict, Bobbitt (1958) attempted to control the effectiveness of the repression defense. The experiment was designed to test the following four hypotheses: a) repression serves the individual by protecting him from anxiety related to the repressed impulse; b) the less successful the repression, the greater is the anxiety experienced; c) complete failure of repression results in maximum anxiety; and, d) complete relief from both repression and conflict results in cessation of anxiety. Bobbitt states that all hypotheses were supported with the exception of the one predicting maximum anxiety when the subjects were made fully aware of the conflict. She suggests that this did not occur because either a) with the failure of repression, certain other defenses quickly become operative, in an effort to diminish the aroused anxiety, or b) the repression hypotheses, as stated by Freud, is in need of re-formulation.

As can be seen from the above review, the concept of repression has been both criticized and defended quite profusely throughout the psychological literature of the past seventy years. The criticisms and areas of conflict have been numerous, and the dispute is as yet, unresolved. The natural outcome of these studies into repression was the unveiling of yet another area of controversy; that known as the study of perceptual defense and perceptual vigilance.

The Study of Perceptual Defense and Vigilance

Bruner and Postman (1947a) co-authored a very influential article which outlined the basic assumption underlying the new experimental approach to perceptual behavior. Its operation reflects not only the character of sensorineural processes, but also the dominant needs, attitudes, and values of the organism. For perception involves a selection by the organism of a relatively small fraction of the multiplicity of potential stimuli to which it is exposed at any moment in time. In perception, moreover, certain stimuli are accentuated and vivified at the expense of others. Finally, what is 'habitually seen' in any given perceptual situation is a function of the fixation of past perceptual responses in similar situations. Through these three processes- selection, accentuation, and fixation- the adaptive needs of the organism find expression in perception."

In a series of three articles (Bruner & Postman, 1947a; Bruner & Postman, 1947b; Postman, Bruner & McGinnies, 1948), these investigators introduced the concepts of perceptual defense and perceptual vigilance. The former process is a defensive one, by which the individual either fails or is slow to perceive an anxiety-laden stimulus. On the other hand, the latter is a sensitization process, by which the subject more readily perceives the same type of stimulus. The magnitude of the number of reported studies, resulting from this work and relating to the phenomena of perceptual defensiveness, inspired Blum (1955) to state: "Probably no concept in psychology has enjoyed such dizzy popularity in a short span of time as perceptual defense."

Pastore (1964), in an article which first appeared in 1949, reviews the pertinent literature which had been reported prior to that time. He points out that those experiments were quite inadequate in their attempts to validate the hypothesis that need is a determinant of perception. One of his major criticisms is that the reviewed studies failed to differentiate between perceptual selectivity and perceptual distortion. Pastore points out that if an individual selects a portion of his environment to which he is going to respond, this fact, in itself, does not give credence to the thought that the individual is distorting the perceptual stimuli about him.

Carter and Schooler (1949) cite an experiment that was reported by Bruner and Goodman (1947), which purported to demonstrate that value systems are of great importance in the perception of size. In this experiment, Bruner and Goodman demonstrated that poorer children overestimate coin sizes more than their richer counterparts. In the Carter and Schooler article, the latter authors replicate the earlier study, but they obtain somewhat different results. They explain their contradictory results by stating that needs and values may play a role in perception, but only when the stimulus object is equivocal or absent, as in the case of judgments made from memory.

McGinnies (1949) reports an investigation in which he set out to determine whether or not the process of perceptual defense completely insulates an individual from the emotion-provoking qualities of the stimulus situation. He states that the process of "perceptual 'screening'" apparently is acquired by the individual as a technique for organizing perceptions around value expectancies so as to produce maximum reinforce-

ment of those expectancies." McGinnies goes on to ask how an individual's recognition threshold can be raised or lowered before the individual becomes aware of the quality of the stimulus. By means of an experiment involving the use of the Galvanic Skin Response, McGinnies demonstrates that during the 'pre-recognition' phase, an individual is at least responding physiologically to the anxiety-provoking stimuli.

In a follow-up article to that of McGinnies, Howes and Solomon (1950) offer an alternative explanation for the results reported by the former investigator. These authors claim that when word frequency, in normal usage, is considered for the words used by McGinnies, the GSR results may be explained, simply as being the outcome of physiological responses due to not being able to recognize the words as quickly as the subject feels he should. They point out that when the effects of Thorndike-Lorge frequencies are extracted, the duration at which verbal discrimination appears, is of the same order for both taboo and neutral words.

Cowen and Beier (1950) added to the discussion with an investigation in which their subjects were alerted to a threat experience, and the effects of the addition of this variable were noted. These investigators found that when subjects were warned with regards to the nature of the stimuli, the threat words no longer required significantly more trials or significantly more time for accurate verbal report. They also found, whereas no change in variance of perception of neutral words was noted. This increase in variance was interpreted to mean that the erratic perceptual behavior was stemming from the expectation of threat.

In a most interesting and clarifying investigation, Postman and Leytham (1950) clearly differentiate between motivational variables on perception, wish-fulfillment and defense. They state that perceptual sensitivity and recognition may be systematically influenced by the prevailing motives of the perceivers, but "the effect does not necessarily consist in selective sensitivity to positively valued stimuli and selective exclusion of negatively valued stimuli." They conclude that both negative and positive consequences serve to emphasize perceptual events and strengthen the perceiver's hypotheses about his environment. Whether perception will appear to be wish-fulfilling and defensive, overvigilant, or realistic depends at least in part, on the frequency with which positively and negatively valued hypotheses have been confirmed in the past. "No matter how strong the motivational support for any given perceptual hypothesis, confirmation or nonconfirmation from the environment continually modifies the strength of the hypothesis."

Lazarus, Eriksen, and Fonda (1950) report an investigation in which perceptual behavior is used as a means of studying personality dynamics. They point out that the extent to which an individual's perceptions are accurate should give some clues as to the strength of the relevant needs and also the 'reality contact' of the said individual. The study reported deals specifically with the expression of sexual and aggressive needs on a sentence completion test as well as the auditory recognition of sexual and aggressive material. They report high correlations between the data from the sentence completion test and the auditory recognition scores. These investigators also noted that there were two distinct reaction patterns to threatening stimuli, noted in their subjects. Some

subjects reacted with high perceptual accuracy and ready verbalization, while others reacted with low perceptual accuracy and minimal verbalization with blocking. Those subjects who had been classified as intellectualizers, as opposed to repressors, perceived threatening material with significantly greater accuracy than did the repressors.

McGinnies and Sherman (1952) point out the difficulty in differentiating between perceptual defense and suppressed verbal report. They admit that a degree of uncertainty must exist in descriptions of perceptual behavior to the extent that there is a failure to differentiate between perceptual and verbal responses. The investigation which they report was designed to demonstrate the generalization of perceptual defense to words, which observers would have no reluctance to verbalize. These investigators found that when task words, which were neutral, were preceded by a taboo word, the duration thresholds were significantly higher than for those task words preceded by another neutral word. These results were interpreted in terms of reinforcement of an avoidance reaction that generalized from the taboo to the neutral stimuli.

Eriksen (1952) reports an investigation which demonstrates that prior knowledge of the effect of ego-threat upon memory enables one to predict, with considerable accuracy, the individual's perceptual response to threat. He found that the manner in which an individual responds to ego-threat is an important variable in need and perception research. Those subjects who responded to failure-induced ego-threat by forgetting their failures showed a similar defense in perception. In both cases, the subjects responded to ego-threat by avoiding its recognition and keeping it from awareness. There were other subjects,

however, whose memory for ego-threat was not impaired, and who tended to perceive ego-threatening stimuli as readily as they did nonthreatening stimuli. Eriksen concludes by stating that the individual who responds to one kind of threat by avoidance defenses uses similar techniques against other forms of ego-threat, and this therefore, implies that the manner in which an individual responds to threatening stimuli must be closely related to some or many of this personality characteristics.

In an important paper which relates perceptual defense to the use of projective tests, Eriksen and Lazarus (1952) point out that the experimental study of needs and perception, and the projective approaches to personality study, have much in common. In both cases, the subject is presented with an ambiguous stimulus and asked for an interpretation. They define an ambiguous stimulus as one to which a number of interpretations might be reasonably given. The ambiguity of the stimulus depends upon the number of reasonable interpretations which can be applied. They point out that it must be recognized that distortion beyond reasonable limits can occur in either direction; that is, an individual might make an interpretation which other observers would not agree was reasonable, or on the other hand, he might fail to make an interpretation which others would feel was demanded by the stimulus. This investigation was similar to one reported earlier (Eriksen, 1951) and the results indicated that disturbance scores on the word association test for aggression and succorance, were significantly related to the tendency of subjects to reject corresponding concepts on the Rorschach test. The authors claim that their results confirm the familiar clinical belief that failure to make certain kinds of inter-

pretations of projective materials might reflect emotional disturbance toward that material.

McGinnies and Adornetto (1952) report on an investigation in which they set out to determine whether perceptual defense operates in psychotic individuals, in a manner similar to that manifested by normal individuals. The results of the study were purported to counter the attack made by Howes and Solomon (1950), against the prior study by McGinnies (1949). It was found that both normal and schizophrenic subjects showed significantly higher thresholds of recognition for taboo as compared to neutral words. It was also noted that the general level of threshold for both types of words was significantly higher for the schizophrenic patients than for the normal subjects. An interesting addition to this latter finding was the fact that those diagnosed as catatonic schizophrenics were closer to the normal pattern than were those patients classified as being paranoid schizophrenics.

In an article which attempts to re-relate perceptual vigilance and defense with psychoanalytic theory, Blum (1954) describes an experiment designed to test the "a)unconscious striving for expression of underlying psychosexual impulses (vigilance); and b) the warding off of these threatening impulses as they begin to approach conscious awareness (defense)." The basic hypothesis was that vigilance operates at an unconscious level, whereas defense operates at the conscious level. The results of the study indicate that there is a fair amount of substantiation to this idea, and the author interprets his findings as further evidence for the testability of psychoanalytic formulations.

In order to test out the findings cited by Blum and others (Blum, 1954; Nelson, 1955), taking into account the possibility that the 'negative' stimuli (i.e. the taboo words) held some instinctual intrigue, Pustell (1956) carried out an investigation in which shock was used to invest previously neutral stimuli with negative qualities. It was thought that electric shock would be able to give the negative qualities desired, without simultaneously making the stimuli attractive to the subject, in the same sense as might the taboo material. Pustell hypothesized that perceptual vigilance regarding shock stimuli would still be demonstrated even in the absence of 'such instinctually attractive qualities.' His results evidenced significant differences in reactions of males as compared to females. The male subjects tended to evidence perceptual vigilance as predicted, whereas the female subjects showed perceptual defense. This was explained as being the result of differential reactions to severe shock as an anxiety-provoking stimulus. Pustell claims that the female subjects would have a more intense anxiety reaction to electric shock than would their male counterparts, and therefore, he attributes the differential defensive reactions to the intensity of the anxiety-provocation.

Dulany (1957) reports an investigation which was designed to produce experimentally, the learning of perceptual defense and vigilance, and to relate these mechanisms to antecedent experimental procedures. He states that there is some evidence that perceptual vigilance holds the dominant position in an initial hierarchy of perceptual reactions to threat. The specific hypotheses to be tested were the following: a) when one perceptual response is followed by punishment

and competing perceptual responses are instrumental to the avoidance of punishment, the punished response becomes weaker as compared to the other competing responses; and, b) when one perceptual response is instrumental to avoidance of punishment and competing perceptual responses are punished, the avoidance response becomes stronger as compared with the competing perceptual responses. Dulany's study supports the view that perceptual defense and vigilance are learned reactions to anxiety-arousing stimuli. The learning of both perceptual defense and vigilance are experimentally produced in the study, and a behavior theory analysis of the learning process is proposed. The investigator states that perceptual defense is learned when the perceptual response to a threatening stimulus is punished, and competing responses are instrumental in reducing anxiety. On the other hand, perceptual vigilance is learned when the perceptual response to a threatening stimulus is reinforced by anxiety reduction and competing responses are punished.

In addition to the type of research investigations of which the above noted papers are only representative, there have been several reports appearing in the literature which purport to be an overview of the very controversial field of perceptual defense and vigilance research. Several investigators (e.g. Postman, 1953; Postman, Bronson, & Gropper, 1953; Eriksen, 1954; Lazarus, 1954; Blum, 1955; Spence, 1957) have attempted to consolidate all of the opposing findings, and in turn, come up with an irrevocable statement pertaining to the present status of the controversy.

Postman (1953) re-assesses his position with regards to the perceptual defense hypothesis, and states that just because motivational

factors may influence perception, this idea does not necessarily entail the neglect of stimulus determinants or a disregard for the individual's verbal and motor response dispositions. The hypothesis merely focuses attention on the possible contribution of additional variables, which in any given situation, may or may not be significant. He states emphatically that the concept cannot be regarded as an irreducible explanatory principle. He goes on to claim that perceptual defense need not be regarded as a special principle of perception, as the data to which it refers can be conceptualized in terms of more general principles.

In another article, Postman and his associates (Postman, Bronson, & Gropper, 1953) ask the question whether or not there is a mechanism of perceptual defense. The conclusion which is drawn is that there is no need to conceptualize a new principle of perception to account for the data subsumed under the classification of perceptual defense. These authors stipulate that these phenomena can be accounted for by other better known, and experimentally substantiated, factors.

Eriksen (1954) disputes much of the criticism against perceptual defense by stating that the investigators involved in the criticizing "have failed to analyze the concept in detail, and in general, have considered only a biased summary of the evidence in its favor." He claims that the general question of perceptual defense centers around the question of whether certain kinds of perceptual behavior are related to behavior in other areas where it is generally characterized as being defensive. He states that if it can be shown that perceptual recognition behavior is able to reflect defense mechanism, then it becomes

possible to use perceptual recognition as a means of bringing the general problem of defense mechanisms under experimental study. He cites two requirements which he considers to be basic to any study in which the perceptual defense hypothesis is being tested: a) it must be shown that the perceptual stimuli are anxiety-arousing for all subjects; and, b) it must be shown that the subjects have avoidance defenses available to counter the anxiety arising from these sources. In summation, he states that many experiments, both pro and con, are seriously inadequate insofar as these criteria are concerned, whereas most of the investigations which attempt to meet these criteria are able to present convincing evidence for the perceptual defense hypothesis.

Lazarus (1954), in a reply to Postman et.al. (1953), claims that those investigators had "some very serious flaws in their argument," and also that they "appear to ignore a number of relevant studies which have recently been published." He points out that the concept of defense originated from clinical observations and not from experimental data. This concept offers an explanation for apparently illogical and contradictory behavior, exhibited by individuals who do not seem to realistically evaluate their state of affairs. Lazarus makes it clear that perceptual defense is "merely one manifestation of the general idea of a defense process." He goes on to claim that the word frequency type of explanation is wholly unacceptable, and that at best, word familiarity can be looked at and thought of, as an intervening variable which might mediate the correlation between needs or values, and recognition thresholds. He concludes his rebuttal by citing experiments which deal with the consistency in a subject's style of handling threat-

ening stimuli, and he states that no one can question either the clinical or the everyday observations, regularly made about individuals who misperceive and/or misinterpret, the social situations in which they participate. He concludes that "even if the laboratory were unable to duplicate or verify this kind of observation with its feeble experiments with words and its minimally stressful situations, the compelling force of these observations still could not be disregarded."

Blum (1955) reports an experiment in which he tested the following hypothesis: "subjects predisposed to use the mechanism of repression in conjunction with a given conflict will, when confronted subliminally with a conflict-relevant stimulus, show defensive behavior directly traceable to the perceptual process itself." This experiment was devised in response to the criticisms of the perceptual defense hypothesis cited by Postman (1953) and Postman et.al. (1953). In this investigation, Blum demonstrates that an avoidance response cannot be expected solely from the existence of conflict, but that it requires, as an essential component, the predisposition to avoid. He claims that with "the variables of familiarity, set, and selective verbal report all controlled, an avoidance response to a subliminal stimulus has taken place." He indicates that conflict alone is not a sufficient antecedent factor to result in perceptual defense. Blum concludes that his findings are incompatible with the proposed rejection of the concept of perceptual defense.

The various articles and investigation findings which have been cited above, indicate the great amount of research which has been carried out in the field of perceptual defense and perceptual vigilance.

Similar to the situation found in the investigation of repression, the controversy pertaining to the attempts at explaining these phenomena is an ongoing and, as yet, unresolved area of conflict. At the present time, the concluding statement found in Blum's (1955) article, is still a very appropriate summation. He states that "current attempts to abandon perceptual defense in the interests of theoretical parsimony may very well be premature."

The Study of Repression-Sensitization

One outcome of some of the studies dealing with perceptual defense was the realization, by many investigators, of the presence of an approach-avoidance type of dimension with respect to individual's responses to threatening stimuli. This realization marked the opening of yet another area of research, the study of repression-sensitization as a unique dimension of personality. Many of the studies pertaining to this area of research utilized different measures as well as different terminology in reference to the repression-sensitization dimension.

The Minnesota Multiphasic Personality Inventory (MMPI) (Hathaway & McKinley, 1951) was originally devised as a psychiatric diagnostic aid. Since the classifications which were yielded by the test tend to characterize the defense patterns utilized by the testee, and also because of the relative popularity and familiarity of the test, it was inevitable that MMPI scales would be utilized in work on repression-sensitization. Byrne (1964a) reviews the usage of the MMPI as a measure of defense, and points out that there is "relatively good agreement among investigators as to the type of MMPI items most indicative of

repressing and sensitizing defenses."

Page and Markowitz (1955) were the first investigators to use MMPI scales as measures of defense. Utilizing scores obtained on the K and L scales, they found that defensive individuals (i.e. repressors) tend to bolster sources of information which reflect favorably upon themselves, while at the same time, they tend to evaluate negatively those sources of evidence which suggest their inadequacies.

As a follow-up to Shannon's work (1955) dealing with facilitators (sensitizers) and inhibitors (repressors), Ullman (1958) reports a study in which he attempts to find a scoring system to be utilized with case history material, in the investigation of this personality dimension. He found no significant differences in intelligence between facilitators and inhibitors, but he did find significant differences on several MMPI scores. Ullman pursued this line of research, and in a more recent paper (Ullman, 1962), he presents an empirically derived scale based upon the MMPI, which is designed to measure the facilitation-inhibition dimension. Ullman states that the need for this new device stems from the inter-rater reliability problems found in the use of the case history method. Scores obtained on Ullman's 44-item scale, were found to correlate significantly with scores obtained on the Byrne scale (Byrne, 1961).

Byrne (1961) reports the development of a new repression-sensitization scale, based upon MMPI material, which he purports to be "an easily administered, reliable, valid method by which these defenses could be measured." He cites the work of other investigators (Altrocchi, Parsons, & Dickoff, 1960) who reported a measure of defense which was

based on six of the MMPI scales. Byrne points out that his scale improves upon that of Altrocchi et.al. because of a new scoring system, in which each item is scored only once instead of possibly several times. This scale consists of 182 items presented in the same order in which they appear in the MMPI. Of the 182 items presented, 156 are scoreable while the remaining 26 are buffer items. Byrne reports both validity and reliability data regarding the new scale, and he concludes that "the R-S scale appears to be a reliable test, and with minor exceptions, the evidence suggests that it is a measure of defensive behavior." Byrne states that the R-S scale is positively related to the expression of sexual responses on the TAT, and unrelated to the expression of aggression and emotionality; it is unrelated to measures of intellectual ability, but it is negatively correlated with Ullman's Facilitation-Inhibition scale.

In follow-up research, Byrne and his associates (Byrne, Barry, & Nelson, 1963) carried out an internal-consistency item-analysis for the Repression-Sensitization scale. As a result, a new scoring system was devised in which only 127 of the original 182 items are scored. A high score indicates sensitization, whereas a low score indicates repression. According to the authors, the revised scoring method has greater face validity as well as greater reliability than does the original.

The studies referred to below, although having used various measures in order to differentiate subjects along the repression-sensitization continuum, appear to be investigations concerning the same personality dimension.

Gordon (1957) reports a study designed to examine the effects of repression on interpersonal functioning. He points out that the nature of an individual's perception of another person is basic to the process of the former's behaving in interpersonal situations. The study was carried out in an attempt to examine the accuracy of the perceptions of other people held by repressors, and also to test the hypothesis that sensitizers predict the responses of others more accurately than do repressors. The following results were obtained: a) repressors were more accurate in predicting similarities between themselves and others; b) sensitizers were more accurate in predicting differences between themselves and others, and also in predicting both similarities and differences in people who were generally different from themselves (i.e. repressors); c) repressors ascribed similarities between themselves and others (i.e. projection) more often than did sensitizers, even when such similarities did not exist; d) sensitizers ascribed differences more often, even when they did not exist; and, e) repressors were more accurately predicted by both groups.

Gordon concludes his article by pointing out that in a two-person interaction situation (e.g. individual therapy) where communication is especially important, there would apparently be better communication of both of the individuals were repressors. In this situation, both individuals would be responding in a manner which would be anticipated by the other. In the event that both the therapist and the client were not repressors, then Gordon states that it would be most beneficial if the therapist (i.e. the teaching communicator) were to be a repressor, as this would result in good communication and supposedly, better treatment effects.

Altrocchi, Parsons, and Dickoff (1960) report an investigation devised to test the following three hypotheses: a) repressors manifest smaller self-ideal discrepancies than sensitizers; b) as a result of training focusing on psychotherapeutic interpersonal interaction, the self-ideal discrepancies of repressors increase whereas discrepancies of sensitizers decrease; and, c) as a result of training focusing on psychotherapeutic interpersonal interaction, subjects' self-ideal discrepancies, in general, decrease. Results of the study only supported the first hypothesis, and it was found on further investigation that sensitizers have a significantly more negative self-concept than do repressors, and as a result, a greater self-ideal discrepancy. These authors point out that their findings are quite similar to those of Eysenck (1947), relating neurotic introverts to sensitizers, and neurotic extraverts to repressors.

When Byrne first introduced his R-S scale (Byrne, 1961), he included a fairly comprehensive review of the pertinent research reported to that date. He cites the work of Shannon (1955) in which the latter found that internalizers respond to sexual, aggressive, and dependency stimuli with perceptual repression, whereas sensitizers respond with perceptual sensitization. Byrne also reports a study in which he found a highly significant negative correlation between scores obtained on the Facilitation-Inhibition scale (Ullman, 1962) and those obtained on the R-S scale. The negative direction of the correlation results from the fact that these two tests are scored in opposite directions. Byrne also cites the results of Eriksen (1950), who found that subjects with low recognition thresholds for aggressive stimuli gave more TAT stories

with aggression as a main theme, then did those subjects who had high recognition thresholds for the same stimuli. Byrne hypothesized that subjects who obtain high scores on the R-S scale, should respond to TAT cards with more sexuality and aggression, and with a higher proportion of emotional words, than subjects with a low R-S score. He found that neither the aggression score nor the percentage of emotional words were found to be related to the defense measure. He did find, however, that the male sensitizers had significantly higher sexual scores than did the male repressors. Another finding of some importance was that no significant relationship was found between the verbal measures of intellectual ability and repression-sensitization.

Byrne and some of his associates (Byrne, Barry, & Nelson, 1963) revised the scoring system of the R-S scale. They report findings which indicate greater face validity for the revised system, but essentially, there were no actual gains in terms of precision and consistency. They also state that repression-sensitization is significantly related to self-ideal discrepancy and negative self descriptions, but not to negative ideal-self descriptions. They conclude with the following three possible hypotheses: a) psychodiagnostic instruments which rely upon self-ratings may tend to identify maladjustment, conflict, or dissonance only in individuals who typically respond to stress with sensitizing mechanisms; b) those individuals who score on the repression end of the R-S scale may be optimally adjusted and relatively free of conflict and dissonance; and, c) the R-S scale may be misnamed, as it may simply be measuring something in common with other self-report instruments.

Two studies of the relationship between projective-type test results and the repression-sensitization dimension (Tempone, 1963; Blaylock, 1963) are cited by Byrne (1964a), in his extensive review. Tempone utilized TAT cards and found that sensitizers gave significantly more aggressive content than did repressors, but the differences in sexual content were not significant. Using an association of homonyms procedure, Blaylock found that sensitizers perceived significantly more words as being aggressive in meaning than did repressors.

Ullman and McReynolds (1963) examined the relationship between anxiety and repression-sensitization-sensitization. They found a significant correlation between facilitation and ward ratings of anxiety as well as a significant correlation between facilitation and MMPI anxiety ratings. These findings were obtained both with college students and with neuropsychiatric in-patients.

Joy (1963) found significant correlations between the R-S scale and several MMPI and CPI subscales. As these other tests are seen as being measures of adjustment, Joy's results tend to support the hypothesis that a linear rather than a curvilinear relationship exists between repression-sensitization and adjustment. Of particular interest to the present study were the positive correlations between R-S and neuroticism, and R-S and social introversion, as well as the negative correlation between R-S and the Lie scale of the MMPI. With the CPI, the interesting findings were the negative correlations between R-S and sociability (i.e. extraversion), sense of well-being (i.e. stability), and intellectual efficiency.

Weibberg (1963) carried out a factor analytic investigation involving the R-S scale and several other personality variables. He found significant positive relationships between repression-sensitization and social introversion, depression, and emotional instability on Guilford's Inventory of Factors, and a significant negative relationship between repression-sensitization and extraversion on the Myers-Briggs Type Indicator. He then concludes that sensitizers are introverted, neurotic, and emotionally maladjusted individuals, whereas repressors are extraverted and well-adjusted. Whereas sensitizers respond on the basis of perception rather than judgment, repressors utilize judgment in preference to perception.

Byrne (1964b) attempted to examine the childrearing antecedents of the regression-sensitization dimension. He includes in his review of the pertinent literature, a study done by one of his students (Blaylock, 1963). Blaylock found that scores on the R-S scale are related to "response to aggressive-neutral word association homonyms in terms of the aggressive meanings." Byrne then goes on to cite his hypothesis that general patterns of defensive behavior are learned in childhood. He bases this hypothesis on the work done by Dulany (1957), in which the latter was able to teach repression and sensitization by means of electric shocks. Byrne hypothesizes that sensitizers have been raised in an environment in which "their parents were permissive in allowing the expression of affect, including sexual and aggressive impulses." These individuals are, therefore, taught to express emotionally-toned material in a manner acceptable to their immediate environment. Conversely, repressors have been reared in an environment where "almost all

attempts to express taboo impulses are punished." Byrne goes on to theorize that throughout childhood, repressors anxiety, perhaps even from themselves. Using three separate investigations in which three different measures of childrearing attitudes were used, Byrne was not able to find any significant antecedents of the repression-sensitization dimension. Indications given by the results were contrary to the expected findings (i.e. repressors appeared to come from more permissive and accepting homes, while sensitizers appeared to come from restrictive and rejecting ones). Byrne concludes that further research is required in order to determine whether it is necessary to change the conceptualizations of the antecedents and meaning of repression-sensitization, or if his findings are simply the result of repressing and sensitizing defenses at work.

In a study designed to examine other personality correlates of the repression-sensitization dimension, Byrne and some of his associates (Byrne, Golightly, & Sheffield, 1965) found that repressors appear to be best adjusted, sensitizers the most maladjusted, and neutrals appear to fall in between these two defense groups. These investigators utilized the California Psychological Inventory (Gough, 1957) as a measure of adjustment. Results of the investigation indicate that a linear, rather than a curvilinear relationship exists between the repression-sensitization dimension and overall adjustment. Of particular note to the present study were the significant correlations found between the R-S scale and the Following CPI scales: sociability (i.e. extraversion), intellectual efficiency, and sense of well-being (i.e. stability).

All of these correlations were significant and negative, indicating that sensitizers were more maladjusted insofar as these dimensions were concerned.

Blackburn (1965) states that a lack of integration has resulted in research on different personality questionnaires because investigators have failed to recognize that the same personality variable is being measured by scales of "social desirability," "repression-sensitization," or "the tendency to deny or admit symptoms." He states that the "essential characteristic in the self-ratings underlying this dimension appears to be a continuum of self-acceptance-dissatisfaction." His study was designed to investigate the relationship between repression-sensitization and emotional adjustment. Using a sample of neurotic psychiatric patients, he demonstrated that although the means and standard deviations were significantly different on the R-S scale between the neurotic and the normative (i.e. normal) samples, a comparison of the distributions revealed considerable overlap. Therefore, he states that "repression is evidently not synonymous with maximal adjustment." Blackburn found that repressors are more prone to temper outbursts, and they are more inclined to attribute their breakdown to external sources. He found that the correlation between the R-S scale and Welsh's R scale, "which is the 'purest' measure of the introversion-extraversion dimension in the MMPI" was not significant. He concludes that R-S is not a measure of maladjustment per se, and he points out that low scores are not the prerogative of the maximally adjusted.

Blackburn also points out that a feasible interpretation of Eysenck's neuroticism dimension is that it is a function related to

emotional reactivity, and the findings of his study seem to support this notion. He states that the sensitizer is emotionally over-reactive and is more likely to experience anxiety under stress than is the repressor, "and hence is more likely to be recognized as psychiatrically disturbed." The deviant behavior and the non-emotional symptoms exhibited by repressors under stress are less likely to be seen as being psychological in origin. He states that "it is apparent that sensitizers form a majority of psychiatric patients," and he concludes that low scores on repression-sensitization scales "appear to reflect lack of insight and uncritical self-acceptance rather than stability."

In a short report, Bernhardson (1967) cites a statistical study in which he determined that the R-S scale and Ullman's F-I scale are both measuring the same basic characteristic. He also included the Marlowe-Crowne scale, and he found that although both of the other two tests are significantly related to the Marlowe-Crowne scale, the relationship between them (i.e. the F-I and R-S scales) remains significant even after the influence of social desirability is nullified through the use of a first-order partial coefficient of correlation.

Golin and his associates (Golin, Herron, Lakota, & Reineck, 1967) report a factor analytic study designed to determine the similarities in factorial structure between the R-S scale, the Extraversion scale (Eysenck, 1957), and the Manifest Anxiety scale (Taylor, 1953). Several of the significant results reported by these authors relate to the present study. Their first factor, which they label "Defensiveness," shows high negative loadings for the R-S scale, the anxiety scale, and the Neuroticism scale (Eysenck, 1957), as well as a high positive loading

for the Lie scale of the MMPI. Extraversion is not significantly implicated in the factor, and in fact, appears on their fourth factor as the only high loading variable. Some of the significant correlations which these authors report are also of some interest. They report significant negative correlations between repression-sensitization and extraversion, R-S and the Lie scale, extraversion and manifest anxiety, the Lie scale and manifest anxiety, extraversion and neuroticism, and the Lie scale and neuroticism. Significant positive correlations were found between repression-sensitization and manifest anxiety, R-S and neuroticism, and manifest anxiety and neuroticism. Golin et.al. conclude that although repression-sensitization and manifest anxiety may be related to the introversion-extraversion dimension, they are both totally independent from it. The authors further state that both repression-sensitization and manifest anxiety are "practically identical in psychological meaning, both of them being largely determined by two bipolar, orthogonal traits, defensiveness and emotionality."

Duke and Wrightsman (1968) report an investigation designed to examine the relationship between an individual's perception of other people and his placement along the repression-sensitization dimension. Subjects were all administered the R-S scale and the Philosophy of Human Nature scale (Wrightsman, 1964), in order to determine the relation of a personality dimension of defensiveness to the dimensions of the philosophy of human nature. The results indicate that sensitizers do in fact, perceive other people and their expected behavior patterns quite differently than do repressors; sensitizers consistently viewing human nature as significantly more negative than repressors. Another

significant finding was that sensitizers and repressors do not differ in their perceptions of the complexity or variability of human nature. These authors conclude, therefore, that while repressors deny man's undesirable qualities, they do not attempt to simplify his nature any more than do sensitizers.

In a follow-up study to that of Blackburn (1965), McKerracher and Watson (1968) utilized a sample of "subnormal psychopaths" to examine the relationships between the extraversion and neuroticism dimensions with intelligence, lying, and defense patterns. These authors make the very important point that "it is essential to remember that.....verbal responses must be regarded as a behavioral act." They state that although individuals may not describe themselves accurately, a consistency in the direction of their replies may allow for differentiation between selected populations. They found that those individuals who filled the neurotic extravert quadrant were predominantly those with Lie scale scores, and they refer to these patients as "inadequate, neurotic psychopaths (sensitizers)." These authors also found that non-neurotic introverts had high Lie scale scores, and they were described as being "mainly repressors both of emotional disturbance (N scale) and socially undesirable attributes (L scale)." McKerracher and Watson also found that lying was negatively correlated with intelligence, and their male patients were predominantly repressors. They conclude that "great care must obviously be taken not to interpret EPI scores at face value when utilized with abnormal populations."

In a follow-up to the study reported by Golin et.al. (1967), Sullivan and Roberts (1969) examined the relationship between the Mani-

fest Anxiety scale and the R-S scale, taking into account the fact that 29 items are common to both of these instruments. They calculated correlation coefficients between these scales without the common items, and found that they were still highly significantly correlated. These authors conclude that research findings utilizing the Manifest Anxiety scale may be applicable to the R-S scale and vice-versa. They extend the hypothesis and refer to the work of Spence (1960), who found that high-MA subjects learn better than low-MA subjects. If these results are in fact, applicable to the R-S scale, then recent findings which suggest that sensitizers function better than repressors in stress and ego-involving situations (e.g. Lomont, 1965; Petzel & Gynther, 1968; Tempone, 1964), would tend to be both clarified and supported.

Gayton and Bernstein (1969) report another study designed to examine the relationship between repression-sensitization and adjustment. Subjects were administered the R-S scale and the Edwards Personal Preference Schedule. Using a method devised by Trehub (1953), incompatible need scores were derived from the EPPS. They found that sensitizers have significantly higher ego-disjunction scores than repressors, especially on the autonomy versus abasement pair and the succorance versus nurturance pair. These investigations led to the conclusion that since the EPPS is not as threatening as most questionnaires, and also as it is supposedly minimally affected by social desirability responding, the results of the study add significant weight to the hypothesis that there is a linear relationship between repression-sensitization and overall adjustment. They also point out that their results suggest that the greater conflict shown by sensitizers is limited to specific need areas.

The final study dealing with the repression-sensitization dimension which is to be included in this review, is that of Dana and Cocking (1969). These two investigators examined the relationship between the R-S scale and the Extraversion and Neuroticism scales of the Maudsley Personality Inventory (Eysenck, 1962). They found high positive correlations between R-S and Neuroticism scores, and moderate negative correlations between R. S. and Extraversion scores. They also found that repressors were low on deviation and social desirability response sets as well as being relatively unaffected by stress. Sensitizers on the other hand, were high on deviation and acquiescence, and low on dominance, having pronounced stress effects which greatly increased acquiescence scores and somewhat elevated love scores (utilizing the Interpersonal Check List). The impact of response set was only apparent in the test behavior of sensitizers. High sensitization scores were associated with neurotic extraverts and neurotic introverts, while high repression scores (i.e. low on the R-S scale) were associated with stable extraverts and stable introverts. Thus it can be seen that repression-sensitization was directly related to the neuroticism dimension but not the extraversion-introversion dimension.

From the above review, the reader can get some idea as to the vast area of research which has been opened as a result of some early work done in the field of perceptual defense. The articles cited herein are far from being an exhaustive review of the literature pertaining to the repression-sensitization dimension of personality, but rather, it is hoped that they effectively present an overview of the field, and serve as an introduction to the particular research study reported in the present text.

Chapter III

Methods and Procedure

The Subjects Utilized in the Present Study

The subjects used in the present investigation (N = 27 males) came from three separate institutions located in central and southern Alberta. The three institutions involved were the Alberta Hospital at Ponoka, the Deerhome Provincial Institution at Red Deer, and the Vocational and Rehabilitation Research Institute at Calgary.

The Alberta Hospital at Ponoka serves as an inpatient hospital for the mentally ill. Eighteen of the subjects were obtained from this institution, and these individuals came from one of two wards. Five of the subjects were housed on a ward comprised mainly of middle-aged and elderly schizophrenics, and the remaining thirteen subjects came from the maximum security and remand ward. The latter ward houses patients who are considered to be dangerous to themselves or others, and also those who are committed by the courts, either for detention or for observation. These eighteen subjects were classified on the hospital files under the following diagnoses: Catatonic Schizophrenia (5); Unspecified Schizophrenia (4); Paranoid Schizophrenia (4); Anti-Social (2); Simple Schizophrenia (1); Manic-Depressive, Manic stage (1); and, Anxiety Neurosis (1).

The Deerhome Provincial Institution serves as a residential setting which houses mental defectives. Patients are placed on different wards depending upon their level of mental functioning. There were

six subjects involved in the present study who came from the Deerhome population, and these individuals were being housed in one of the two male 'high-grade' wards.

The Vocational and Rehabilitation Research Institute is located close to the University of Calgary campus, and was established to provide assistance to the mentally and physically handicapped. The Institute is connected with the University of Calgary, and its program is devised to assist patients in becoming useful members of the community. Three of the subjects utilized in this investigation were obtained from this Institute.

In all three of the institutions, subjects were chosen at random from the available populations, with the only delimiting criteria being the following: a) subjects had to have an ability to verbalize and be able to comprehend verbal material; and, b) subjects had to be obtained from each institution, and the results of all twenty-seven subjects were therefore, grouped together for the statistical analyses employed in this study. The statistical justification for this procedure will be discussed in a later section of this text.

The Instruments Utilized in the Present Study

The instruments used in this study were eight in number: the Eysenck Personality Inventory, Form A; the Calgary Biographical Questionnaire; the Coloured Progressive Matrices; the Standard Progressive Matrices; the A.S.C. Verbal Association Test; the Rorschach Inkblot Test, Forced-Choice Method; the Calgary Projective Test of Perceptual Defensiveness; and, the Motivational Distortion Scale of the Sixteen Person-

ality Factor Questionnaire. The ages (in months) of all subjects were obtained from the institutional records.

The Testing Procedure Utilized in the Present Study

All of the testing involved in the present study was conducted by the author, and each of the subjects was tested on an individual basis. The testing took place over a period of approximately two months, from mid-March to the end of May, 1970. The total amount of time required to complete the test battery varied greatly amongst the individual subjects, and ranged from three to twelve hours. In most cases, all of the tests were completed in three sessions of approximately equal duration, but in the cases of the three subjects who took the longest periods of time to complete the tests, four sessions were required. The three fastest subjects, on the other hand, only required two sessions to complete the battery.

In all instances, the subjects were given the instructions for the individual tests through the use of a tape recorder, which was located in the testing room, and which was controlled by the investigator. The actual test questions for the Eysenck Personality Inventory, the Calgary Biographical Questionnaire, the A.S.C. Verbal Association Test, and the Sixteen Personality Factor Questionnaire were also given over the tape recorder. All of the remaining test items were administered directly by the investigator. The use of the tape recorder, whenever possible, was advocated in order to standardize the test procedure as much as possible for all subjects. An automatic foot control attached to the recorder allowed the tester to start and stop the tape instantly,

so that any questions on the part of the subjects could be dealt with as they arose.

In all three of the institutions, the testing was conducted in small, office-type rooms, furnished with a large table (on which the recorder was placed), and at least two comfortable chairs. Each room was located in a setting which allowed for only a minimal amount of noise and distraction from neighboring areas.

The investigator recorded all of the individual responses, in a number code, so as to permit easy and fast transformation onto I.B.M. data cards at a later time. This procedure had two purposes: a) to ensure accurate recording of the subjects' responses; and, b) to facilitate the use of the computer programs in both the scoring and the analyzing of the data.

The tests were administered to all subjects in the following order, after the purposes of the testing had been explained, and sufficient rapport had been established: the Calgary Biographical Questionnaire; the Eysenck Personality Inventory; the Rorschach Inkblot Test (Forced-Choice Method); the A.S.C. Verbal Association Test; the Standard Progressive Matrices; the Colored Progressive Matrices; the Sixteen Personality Factor Questionnaire; and, the Calgary Projective Test of Perceptual Defensiveness. With each subject, the testing session was terminated as soon as the subject completed the test on which he was working, either at the time when he said that he was tired or when it appeared to the tester that the subject was becoming tired. In most cases, subjects completed the first two tests in the initial session, the next four tests in the second session, and the last two tests during the final session.

Both the Colored and the Standard Progressive Matrices were utilized in this study, because the former has been shown to measure differentially, intellectual ability levels below I.Q. of seventy-five (Orme, 1961), and the latter test has been shown to accurately assess intellectual ability above that level. It was originally hoped that the investigator would be able to follow the standard procedure advocated by Raven (1965), whereby the Colored Progressive Matrices could be immediately followed by Sets C, D, and E of the Standard Matrices, in cases where this procedure would be indicated (i.e. where the subject scored very high on the Colored sets). However, in order to validate the employment of this procedure, a pilot study was conducted (Harshman, 1971), and as a result of that study, it was determined that there would be no justification for the use of this procedure. Therefore, in accordance with the implications and indications derived from the above-mentioned study, the Standard Matrices were administered to all subjects, and following this administration, the Colored Matrices were given.

After the subject was introduced to the investigator, the latter explained that the subject had been selected at random to assist in some research work which the author was doing through the University of Calgary. The subject was asked if he wished to co-operate in the study, and a general introduction and explanation was given to him with regards to the purpose of the investigation. The underlying motive of the study was stated to be, a desire to find out how the people in different institutions in Alberta think and feel about things. The use of the tape recorder was explained, as was the procedure which was to be used in recording the subject's responses. It was also pointed out to each

subject that he should feel free to ask any questions as they arose, and also to inform the investigator as soon as he (the subject) began to feel tired. After this general introduction had been made, the instructions for the Calgary Biographical Questionnaire were played over the recorder.

The Statistical Treatment of the Obtained Data

Computer programs were written in Fortran IV by the author, so that each of the tests and questionnaires utilized in this study, with the exception of the Calgary Projective Test of Perceptual Defensiveness, could be scored using the I.B.M. 360 Computer at the University of Calgary. The projective test was scored by hand, and once the scores on all of the variables were obtained, the following statistical procedures were carried out.

The Multivariate Analysis of Variance

In order to justify grouping all of the subjects into one large group of institutionalized individuals, it was necessary to determine whether or not the results obtained from the three samples differed significantly on any of the variables which were being examined. The writer utilized a computer program (Finn, 1968) available in the University of Calgary Library, to effect the Multivariate Analysis of Variance.

Bock (1966) states that "...multivariate analysis of variance is appropriate to scientific problems of detecting and characterizing differences among experimental groups on many variables simultaneously." This statistical procedure allows the investigator to examine simultaneously, different sets of data related to many variables, in order to

test the hypothesis that the groups of subjects from whom the scores were obtained, all come from the same common population.

In the present study, for example, if it were found that the results obtained from the subjects at the Alberta Hospital, the Deerhome Institution, and the Vocational and Rehabilitation Research Institute were not significantly different, then the investigator would be justified in combining the results from the three smaller groups, and treating them as if they had come from one group of subjects.

Correlational Analysis

After it had been determined that all of the collected data could be treated collectively, subjects' scores on the nineteen variables involved in the study were subjected to a correlational analysis. Product-moment coefficients of correlation were calculated between all variables, utilizing a computer program devised by Dr. H. Hallworth and Mrs. A. Brebner.

Factor Analyses

The results of a correlational analysis are expressed in terms of a correlation matrix which reveals a general and broad indication as to the patterning which exists amongst several variables. This procedure might be substantially refined through the use of factor analytic techniques. Factor analysis is a branch of statistical science which originally came into being specifically to provide mathematical models for the explanation of psychological theories of human ability and behavior (Harman, 1960). In essence, the purpose of factor analysis is to determine the number and nature of the underlying variables or factors,

which account for a large proportion of the variance amongst many individual measures. Through the use of factor analytic procedures, a table or matrix of intercorrelations may be condensed into a set of one or more factors, a factor being defined as a construct or hypothetical entity which is assumed to underlie tests and test performance (Kerlinger, 1964).

It should be noted that there are several methods of factor analysis, and the main differentiation between them lies in the selection of the axes to be utilized in locating the variables within the factorial space. The type of analysis, the number of factors to be extracted, and the question as to whether or not different rotations of the axes should be used, are to a large extent, arbitrary questions which must be answered by the individual investigator. Coan (1964) underlies the arbitrariness of the choice of method when he states that "a factor remains a mathematical function of the correlations with which one begins regardless of the procedure by which it is derived."

Principal Components Analysis

The principal components method of factor analysis was developed primarily by Pearson (1901) and Hotelling (1933). It is a method of breaking down a correlation matrix into a number of orthogonal axes or components, equal to the number of variables concerned (Lawley & Maxwell, 1963). Cooley and Lohnes (1962) points out that "the principal components solution is the most desirable way to obtain the initial factor structure of a correlation matrix, whether or not subsequent rotation is desired." An important mathematical property of the principal com-

ponent solution is that all of the components are orthogonal to each other. When this method is utilized, a small number of components might extract a rather large proportion of the total variance of the variates, and it is, therefore, common practice to evaluate and utilize only the first few components, interpreting only those found to have a latent root value greater than unity. This practice has been adopted by the present author.

The minimum loading value of a variable which is considered to be significant varies greatly, due to the fact that this is somewhat an arbitrary decision which must be made by the individual investigator. It has been suggested that loadings of less than .30 should be considered to be insignificant (Fruchter, 1954; Kerlinger, 1964; Lawley & Maxwell, 1963). In the present study, the writer had arbitrarily chosen .40 as being the minimum loading value to be considered as being significant.

Vernon (1950) states that any test can be regarded as divisible into two portions which he calls its communality and its specificity (i.e. what it has in common with other tests, and what is specific to it alone). From the factor matrix, it is possible to calculate the communality of the test, or its total factor content, is shown by the squares of its factor loadings. The communality of the measures is usually referred to as h^2 . The sum of the squares of the loadings in each column equals the latent root represents the portion of the total variance of all the variates, which has been 'taken out' by that factor (Thomson, 1960).

Varimax Rotation

In order to move the axes from the particular location determined by the principal components method, to some position which is more useful for the interpretation of the factors, the axes may be rotated. A major role for the rotation is to obtain meaningful factors that are as consistent as possible from analysis to analysis (Fruchter, 1954). Since a psychological factor reality is presumed to lie behind the test scores, some unique or correct position of the axes must be found in order to so view the variables in n-dimensional space (Frost, 1967). The choice amongst alternate solutions is generally dependent upon considerations relating to the subject matter, rather than those relating to statistical biases. According to Cooley and Lohnes (1962), the construct-seeking task of factor analysis is most frequently accomplished by first conducting a principal components analysis, and then using the determined principal factors as a set of reference axes for determining the simplest structure, or the most easily interpretable set of factors, for the domain in question. It is important to note that when a pair of axes is rotated, the new projections or loadings differ systematically from the projections on the original axes, but the rotation has no effect on the sum of the squares of the projections of a single point. DuBois (1965) points out that as factor loadings are actually representative of the correlations between the variables and the factors, the square of any factor loading gives the proportion of the variable explained by that particular factor, and therefore, rotation of the axes does not in any way, change the proportions of the original variables which were explained by the initial analysis.

The Varimax rotation (Kaiser, 1958) is a technique based upon mathematical criteria, which involves the simplification of the columns within the factor matrix. It emphasizes the cleaning up of factors rather than variables, and for each factor, it tends to yield high loadings for a few variables, while at the same time, yielding very low loadings for other variables on that particular factor. Cooley and Lohnes (1962) point out that one "important advantage of the Varimax solution is that the resulting factors tend to be 'invariant under changes in the composition of the test battery'." They go on to state that if the purpose of multiple-factor analysis is to allow inferences to be made about the dimensionality or basic structure of some psychological domain on the basis of tests drawn from that domain, the invariance property of this method is of utmost importance. The inference made should not be affected by small changes in the sample of tests utilized.

Thomson (1960) makes the point that sometimes orthogonal simple structure cannot be attained with orthogonal factors, but it may be possible to reach it with oblique factors. He states that although it is hoped that factors will be different qualities, and although it is statistically beneficial for them to be, it is sometimes better to allow the factors to "sag away a little from strict orthogonality," in order to achieve simple structure. He claims that although the factors might be uncorrelated in the entire population, they might well be correlated to some extent in the sample of people who are actually tested. It is, therefore, beneficial to examine the effects of rotating the axes obliquely as well as orthogonally, in the event that simple structure is

not attained through the use of the orthogonal rotations alone.

Promax Rotation

Cattell and Dickman (1962) point out that although Varimax does a good job when the factors are truly orthogonal, "orthogonal factors are as common as a straight tree." Cattell himself had earlier pointed out that the pursuit of maximum simple structure with the restriction to orthogonality is an impossible goal and must end in some sort of compromise (Cattell, 1966). In the Cattell and Dickman article, the authors conclude that the goals of orthogonal axes and uniquely determined simple structure are mutually inconsistent, and they refer to the arguments posited by Thurstone (1947), who postulated that oblique factors could alone be expected to correspond to scientific entities.

Hendrickson and White (1964) introduce the Promax method of rotation to oblique simple structure, after prefacing their work with the comment that up until that time, the computational time required to obtain the desired oblique solution had often been "beyond the means of a research worker." They point out that previous methods had relaxed the restriction to orthogonality throughout the computations, whereas they had decided to use an orthogonal method initially, construct an ideal oblique solution from the results of the orthogonal rotation, and then rotate the orthogonal results to a least squares fit to this ideal solution. The accepted ideal solution was required to have high loadings increased while low loadings were decreased. These authors state that, "it was therefore proposed to generate a matrix wherein each element would be a function of the orthogonal loading, the length of the test

vector, and the length of the factor vector." They found that the most productive method was to have each element of this latter matrix equal to the corresponding element in the row-column normalized orthogonal matrix, taken to the fourth power.

Due to the fact that the computer program utilized by the author, computes the second-order factor structure by using the Promax rotation of the first-order factors, and also as the Promax rotation was very similar to the Varimax solution, the Promax solution was chosen for the interpretation.

Second-Order Factors

Thurstone (1961) defines second-order factors as those "that are obtained from the correlations of the first-order factors." He states that factors of this type seem to be of fundamental significance in the interpretation of correlated variables. Thomson (1960) points out that it is possible that when oblique factors appear in the factorial analysis of psychological tests, there is a hidden general factor which causes the obliquity. He goes on to state that this general factor (or factors) can be arrived at by analyzing the first-order factors into second-order factors, or 'factors of the factors'.

Once the second-order factors have been derived as principal components, they may be rotated on either orthogonal or oblique axes, in order to attain simple structure. Hendrickson and White (1966) have described a method of rotation which involves rotating the matrix consisting of the projections of the original variables upon the second-order factors (orthogonally rotated), in order to obtain oblique rotation.

They report that this method is superior to the usual method wherein the orthogonal higher-order matrix is itself rotated, and they state that their method should be used if simple structure is not obtained with the orthongonal rotation.

Although it is certainly interesting to look at second-order factors when one is involved in the carrying out of a factor analysis, but a comment made by Thomson (1960) must be given careful consideration. He states that "whether such a procedure (the derivation of higher-order factors) could be justified by the reliability of the original experimental data is very doubtful in most psychological experiments. The superstructure of theory and calculation raised upon these data is already..... perhaps rather top-heavy, and to add a second story unwise."

In the present study, the correlational matrix expressing the coefficients of correlation between the original test variables, was subjected to a series of factor analyses, again utilizing a computer program devised by Hallworth and Brebner. This program calculates the Principal Components, the Varimax rotation of these components, the Promax rotation of the Varimax factors, as well as the correlation matrix of the correlations among the Promax factors. In addition, the program contains a method whereby the matrix of intercorrelations between the primary factors can also be factored, and the resultant solution orthogonally rotated. In order to assist the investigator in the interpretation of the second-order factors, the program also computes the factor loadings of the original variables on the higher-order factors. The present author utilized all of these aspects of the computer program, in order to obtain as clear a picture as possible to the underlying

structure of personality variables, as found in the present sample of tests and subjects.

Chapter IV

Results

The Test Scores of the Subjects

The means and standard deviations of the raw scores obtained on all variables are shown below in Table 1. The distributions of the scores obtained on all variables are shown in Appendix H. In order to obtain a larger variance in the age scores, all ages were expressed in terms of months rather than years.

The Multivariate Analysis of Variance

Utilizing a computer program referred to above (Finn, 1968), a multivariate analysis of variance was conducted to determine whether or not the data obtained from the three separate institutions could be pooled together and statistically analyzed as if it had all come from one common population sample. The residual was chosen as the error term with 24 degrees of freedom. The F-ratio for the multivariate test of equality of the mean vectors was found to be 1.17, which with 38 and 12 degrees of freedom, has a probability of less than .40. It was, therefore, determined, that the three sets of scores did, in fact, come from the same population, and this finding gave justification for the data to be pooled and treated as having come from the same single sample.

The Correlational Analysis

A product moment correlation matrix was obtained in which all of the intercorrelations among the variables are listed. This matrix is

Table 1

Means and Standard Deviations of Raw Scores

(Norms shown in brackets)

Scale	\bar{X}	S.D.
Extraversion EPI	12.48 (12.07)	3.82 (4.37)
Neuroticism EPI	14.56 (9.06)	5.98 (4.78)
Lie Scale EPI	2.52 (0-3)	1.73
Repression-Sensitization	62.81 (42.25	19.16 (20.10)
Welsh's R Scale MMPI	13.59 (15.57)	5.79 (4.78)
Welsh's A Scale MMPI	23.63 (12.20)	8.89 (8.00)
Colored Matrices	27.70	6.81
Standard Matrices	29.30	13.46
Verbal Association Test Sex	4.22 (4.10)	2.04 (2.75)
Verbal Association Test Aggression	5.56 (5.02)	2.13 (2.23)
Verbal Association Test Miscellaneous	4.56 (4.17)	2.01 (2.83)
Rorschach Sex	23.33	5.51
Rorschach Aggression	27.59	3.55
Rorschach Arson	23.19	3.16
Rorschach Neutral	25.96	3.80
CPPD Emotional Loading	8.04	4.47
EPPD Distortion	9.44	5.48
Motivation Distortion 16PF	6.07 (8.50)	2.21
Age (in months)	386.85	142.43

shown in Table 2 below. In addition to these coefficients, the author also calculated the correlations between the scores obtained on both the Standard and the Colored Progressive Matrices, and Factor B of the Sixteen Personality Factor Questionnaire (i.e. the intelligence factor), as well as the correlation between scores on the R-S scale and total scores on the Calgary Projective Test of Perceptual Defensiveness. The correlations between the measures of intelligence were thought to be necessary, in order to demonstrate the presence or absence of validation for the use of the Matrices as measures of intellectual ability within this population. It was thought that the correlation between the R-S scores and the total scores on the CPPD (i.e. the sums of the Emotional Loading and the Distortion scores) might yield some indication as to the relationship of the former variable to overall personal adjustment. The premise upon which this hypothesis was based was that persons scoring high on both parts of the CPPD would tend to be general maladjusted. High Distortion scores would reveal inability or unwillingness to face threatening stimuli, and high Emotionally Loaded scores would indicate disturbed and maladjusted environmental backgrounds.

The coefficient of correlation found to exist between the Colored Matrices and Cattell's Factor B was .25, which is insignificant. The correlation between the Standard Matrices and Factor B was found to be .50, which is significant beyond the .005 level. The correlation between the R-S scale and the total score from the CPPD was found to be .43, which is significant beyond the .025 level.

Table 2
Correlation Matrix

Scale	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. EPI/E	02	-07	04	-63	05	-27	-38	-14	24	-18	-00	-07	06	02	-16	05	-17	17
2. EPI/N		-11	78	-17	73	-45	-54	-42	10	11	02	-08	-19	-08	-19	31	-30	-17
3. EPI/L			06	-09	08	-36	-33	-22	-12	-08	-03	-01	38	-26	-51	67	18	64
4. Repression-Sensitization				-27	96	-57	-53	-30	17	17	-05	12	32	-31	-00	34	-51	-18
5. R Scale MMPI					-30	32	33	06	-07	-06	12	-06	-21	11	12	-19	-06	-17
6. A Scale MMPI						-56	-50	-34	13	11	-10	05	37	-25	-08	38	-48	-15
7. Colored Matrices							82	44	-06	34	-06	21	-27	10	36	-52	30	-23
8. Standard Matrices								62	-08	37	-02	18	-31	09	53	-60	32	-40
9. Verbal Association Sex									07	47	23	22	-29	-34	51	-45	23	-38
10. Verbal Association Aggression										-05	-12	12	35	-22	21	-32	-11	-13
11. Verbal Association Miscellaneous											05	47	-19	-37	27	-11	-16	-34
12. Rorschach Sex												-46	-55	-53	06	-28	23	-03

(Table continued on next page)

Table 2 (continued)

Scale	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
13. Rorschach Aggression													-07	-23	15	06	-25	-11
14. Rorschach Arson														-00	-24	40	-11	12
15. Rorschach Neutral															-07	03	00	12
16. CPPD Emotional Loading																-65	-05	-52
17. CPPD Distortion																	-26	53
18. Motivation Distortion 16PF																		24
19. Age																		

Coefficients required for significance

$r = .67, p < .05$

$r = .80, p < .01$

The Factor Analyses

The Principal Components analysis yielded six components with an eigen-value greater than unity, and this matrix is shown in Appendix I. These components were rotated first by the Varimax method, and then by the Promax method to yield the matrices shown in Appendix J and Table 3 respectively. The author had chosen .40 as the minimum loading which was to be considered significant, and had also chosen the Promax solution as being the most amenable to meaningful interpretation. Table 4 shows the Promax loadings which are greater than .39 in value.

The six Promax factors account for a total of 80.55% of the overall variance found in the data. Each of the factors is discussed below, and the bases for the names chosen are also indicated. The factors, listed in order of magnitude, are the following: Questionnaire Repressiveness, Perceptual/Projective Sensitization, Susceptibility to Sexual Responses, Susceptibility to Anti-Social and Hostile Responses, Extraversion, and, Susceptibility to Aggressive and Arson Responses. The amount of variance for which each of these factors accounts is noted below.

The First Factor: "Questionnaire Repressiveness"

The first factor loads very heavily and negatively with the R-S scale, the MMPI A scale, and the EPI N scale. It is also loaded moderately and positively by the MD scale of the 16PF, as well as by both the Colored and the Standard Progressive Matrices. This factor is labelled the "Questionnaire Repressiveness" factor, and it accounts for 21.6% of the total variance.

Table 3

Promax Factors
(first-order factors)

Scale/Factor	I	II	III	IV	V	VI
Extraversion EPI	102	010	-164	-012	970	020
Neuroticism EPI	-921	155	046	-103	-097	-056
Lie Scale EPI	205	-1.02	318	115	-157	163
R-S Scale	-980	090	174	127	-048	110
R Scale MMPI	018	118	-083	-272	-856	-022
A Scale MMPI	-937	046	116	095	-047	121
Colored Matrices	550	279	-145	272	-170	-048
Standard Matrices	510	364	-055	271	-246	-015
Verbal Association - Sex	379	253	411	377	065	030
Verbal Association - Aggression	-025	413	128	-192	157	847
Verbal Association - Miscellaneous	-185	053	286	804	002	-247
Rorschach Sex	-051	082	802	-408	-019	-338
Rorschach Aggression	-002	-107	-133	912	149	-015
Rorschach Arson	-123	-263	-172	-071	-130	771
Rorschach Neutral	182	182	-896	-252	-014	-156
CPPD Emotional Loading	-014	756	059	106	-035	164
CPPD Distortion	-269	-861	-113	244	-046	-166
Motivational Distortion 16PF	686	-243	291	-281	-067	107
Age	408	-847	002	-088	159	-046
Percentage Variance	21.6	18.8	10.4	11.5	9.7	8.5

Table 4

Promax Factors
(first-order factors)
(loadings $\leq .40$)

Scale/Factor	I	II	III	IV	V	VI
Extraversion EPI					97	
Neuroticism EPI	-92					
Lie Scale EPI		-1.02				
R-S Scale	-98					
R Scale MMPI					-86	
A Scale MMPI	-94					
Colored Matrices	55					
Standard Matrices	51					
Verbal Association - Sex			41			
Verbal Association - Aggression		41				85
Verbal Association - Miscellaneous				80		
Rorschach Sex			80	-41		
Rorschach Aggression				91		
Rorschach Arson						77
Rorschach Neutral			-90			
CPPD Emotional Loading		76				
CPPD Distortion		-86				
Motivational Distortion 16PF	69					
Age	41	-85				

The Second Factor: "Perceptual/Projective Sensitization"

The second Factor is highly saturated negatively by the Lie scale of the EPI, the Distortion scale of the CPPD, and Age. It is also highly loaded positively by the Emotionally Loaded scale of the CPPD. This factor is labelled the "Perceptual/Projective Sensitization" factor because of its depiction of the overly-honest, non-distorting type of individual is also younger and more likely to evince an anti-conventional social response set (on the CPPD). The second factor accounts for 18.8% of the total variance.

The Third Factor: "Susceptibility to Sexual Responses"

The third factor saturates negatively with neutral responses to the Rorschach, and positively with sexual responses to the Rorschach. This factor is labelled the "Susceptibility to Sexual Responses" factor, and it accounts for 10.4% of the total variance.

The Fourth Factor: "Susceptibility to Anti-Social and Hostile Responses"

The fourth factor, which accounts for 11.5% of the total variance, is heavily and positively loaded with both aggressive responses to the Rorschach and Miscellaneous (i.e. anti-social) responses to the A.S.C. Verbal Association Test. This factor is labelled the "Susceptibility to Anti-Social and Hostile Responses" factor because of the nature of the common responses elicited by the ambiguous stimuli.

The Fifth Factor: "Extraversion"

The fifth factor, labelled the "Extraversion" factor, accounts for 917% of the total variance. This factor is saturated by both of the

extraversion scales, the MMPI R scale negatively, and the EPI E scale positively. This difference in direction is due to the fact that these two scales are scored in opposite directions.

The Sixth Factor: "Susceptibility to Arson and Aggressive Responses"

The final factor is loaded quite heavily by the aggressive responses to the A.S.C. Verbal Association Test, as well as by the arson responses to the Rorschach. This factor is labelled the "Susceptibility to Arson and Aggressive Responses" factor, and it account for 8.5% of the total variance.

The Second-Order Factor Analyses

The six Promax factors, by definition, correlate with each other, and as described in an earlier chapter of this text, the correlation matrix found to exist between oblique factors, may itself be factor analyzed, in order to obtain higher-order factors. The correlation matrix containing the intercorrelations among the Promax factors, is shown in Table 5. This correlation matrix was first subjected to the Principal Components, and then, a Varimax analysis. Two factors emerged with eigen-values greater than unity, and the factor matrices are shown in Table 6. These two second-order factors account for 50.8% of the total variance found in the data. Table 7 shows the loadings of the original variables upon the second-order factors.

The minimum loading which was to be considered significant (first-order factors upon second-order factors) was arbitrarily chosen by the author as .50, since there are only two factors and they are derived from a 5X6 correlation matrix. Using this criterion for significance, it is

Table 5.

Correlations Between Promax Factors
(first-order factors)

Factor	2	3	4	5	6
1. Questionnaire Repressiveness	34	12	10	-27	-18
2. Perceptual/Projective Sensitization		22	27	-23	-14
3. Susceptibility to Sexual Responses			09	-04	-08
4. Susceptibility to Anti-Social Responses				-25	17
5. Extraversion					13
6. Susceptibility to Aggressive Responses					

Table 6

Second-Order Principal Components and Varimax Factors

First First-Order/Second-Order Factors	Principal Components		Varimax Factors	
1. Questionnaire Repressiveness	668	-231	684	-178
2. Perceptual/Projective Sensitization	741	034	736	092
3. Susceptibility to Sexual Responses	397	-084	402	-052
4. Susceptibility to Anti-Social Responses	476	711	418	747
5. Extraversion	-618	-099	-609	-147
6. Susceptibility to Aggressive Responses	-301	788	-362	762
Eigen-Values	1.85	1.20		
Percentage Variance	30.8	20.0		

Table 7

Second-Order Varimax Factors
(original variable loadings)

Scale/Factor	I	II
Extraversion EPI	-49	-14
Neuroticism EPI	-46	07
Lie Scale EPI	-40	09
Repression-Sensitization	-49	36
Welsh's R Scale MMPI	48	-08
Welsh's A Scale MMPI	-54	33
Colored Matrices	76	13
Standard Matrices	86	17
Verbal Association - Sex	72	23
Verbal Association - Aggression	-14	51
Verbal Association - Miscellaneous	45	43
Rorschach Sex	31	-58
Rorschach Aggression	16	65
Rorschach Arson	-58	56
Rorschach Neutral	-14	-27
CPPD Emotional Loading	58	28
CPPD Distortion	-67	04
Motivational Distortion 16PF	29	-28
Age	-46	-27

Table 8

Second-Order Varimax Factors

(original variable loadings)

(loadings $\leq .40$)

Scale/Factor	I	II
Extraversion EPI	-49	
Neuroticism EPI	-46	
Lie Scale EPI	-40	
Repression-Sensitization	-49	
Welsh's R Scale MMPI	48	
Welsh's A Scale MMPI	-54	
Colored Matrices	76	
Standard Matrices	86	
Verbal Association - Sex	72	
Verbal Association - Aggression		51
Verbal Association - Miscellaneous	45	43
Rorschach Sex		-58
Rorschach Aggression		65
Rorschach Arson	-58	56
Rorschach Neutral		
CPPD Emotional Loading	58	
CPPD Distortion	-67	
Motivational Distortion 16PF		
Age	-46	
Percentage Variance	30.8	20.0

noted that the first second-order factor is saturated positively with the first and second first-order factors, and negatively with the fifth first-order factor. The second second-order factor, on the other hand, is loaded quite heavily and positively with both the fourth and the sixth first-order factors. These second-order factors have been labeled the "Defensive" and the "Susceptibility to Aggressive and Anti-Social Responses" factors, and they account for 30.8% and 20.0% of the total variance, respectively. Table 8 shows the variable loadings on the second-order factors (i.e. the original variables), which are equal to or greater than .40 in value.

The results described above are discussed in greater detail in the following chapter. At this point, however, it may be noted that neither of the two major null hypotheses, stated in the last part of the introductory chapter of this text have been supported. An autonomous factor of repressiveness did emerge, and it was quite distinct from the personality characteristic of extraversion. Also there were several variables measured which indicated a significant difference between the study sample and the normative populations.

Chapter V

Discussion and Conclusions

The Sample and Normative Test Data

The means and standard deviations shown in Table 1 clearly indicate that the sample subjects did not differ significantly from the normal population on the Extraversion scale of the EPI, the Lie scale of the EPI, or the R scale of the MMPI. By contrast, however, the sample subjects were significantly higher than normals on the Neuroticism scale of the EPI and the Repression-Sensitization scale, and they were significantly lower on both the Standard Matrices and the Motivational Distortion scale of the 16PF. In essence, this means that the subjects used in this investigation are more neurotic, less intelligent, less likely to evince a need and/or a willingness to distort for the sake of social approval, and finally, they are closer to the sensitization end of the repression-sensitization continuum, than the general population. These findings are in agreement with those of other investigators working with institutionalized populations (e.g. Blackburn, 1965; McKerracher & Watson, 1968).

Normative data must still be gathered for the new instruments which were utilized in the present study, before any comparative analyses will be possible. The fact that these new tests were found to be significantly related to several of the more established instruments which were used, certainly indicates that they do merit further investigation and standardization.

The Correlational Analysis

The Repression-Sensitization scale was found to be positively correlated with the Neuroticism scale as well as with Welsh's A scale. These findings are in support of the works of several investigators (e.g. Welsh, 1960; Ullmann & McReynolds, 1963; Joy, 1963; Weinberg, 1963; Byrne et.al., 1965; Golin et.al., 1967; Dana & Cocking, 1969; and McKerracher, 1970b). Interestingly, extraversion was not found to be related to repression-sensitization. This is in agreement with Blackburn (1965), but contradicts the findings of several other investigators (e.g. Altrocchi et.al., 1960; Welsh, 1960; Joy, 1963; Weinberg, 1963; Byrne et.al., 1965; Golin et.al., 1967; Dana & Cocking, 1969; and McKerracher, 1970b).

A zone analysis of the extraversion, Neuroticism, and Lie scales of the EPI, as well as the Repression-Sensitization scale yielded results similar to those reported by McKerracher and Watson (1968) and Dana and Cocking (1969). Neurotic extraverts were found to be relatively low on the Lie scale, and R-S scores were found to relate to the neuroticism-stability dimension, but not to the introversion-extraversion dimension. Sensitizers were found to score high on neuroticism, while repressors were found to score low on the same dimension.

The Factor Analyses

In order to further refine the correlational analysis, the correlation matrix was subjected to several factor analytical computations. The results of these analyses were described in an earlier section of this text, but a more complete discussion of them will now be

offered. The Promax factors will be dealt with initially, and then the higher-order factor structure will be examined and reviewed.

The first factor derived bears a strong resemblance to the first factor reported by Golin et.al. (1967). The only significant difference between Golin's "Defensiveness" factor and the present author's "Questionnaire Repressiveness" factor is that the former was highly loaded by the Lie scale of the MMPI, whereas the latter is loaded by the Motivational Distortion scale of the 16PF, but not at all, by the Lie scale of the EPI. This would tend to indicate that the EPI Lie scale is not measuring the same dimension as is the MMPI Lie scale. The Motivational Distortion scale of the 16PF is purported to identify those individuals who have a need and/or a willingness to distort in order to gain social approval (Cattell, 1962), and it appears reasonable to assume that this is the same tendency being measured by the MMPI Lie scale. The question is then raised as to the effectiveness of the EPI Lie scale. This variable saturates the second factor, and a possible answer to this question will be offered in the discussion of the second factor. Intelligence is also implicated on the first factor, which would indicate that it was the more highly intelligent subjects who showed up as being less neurotic, less anxious, and further from the sensitization end of the repression-sensitization dimension than did the less intelligent ones.

The second Promax factor is loaded very heavily and negatively by the EPI Lie scale, the Distortion scale of the CPPD, and age. It is also heavily loaded, in a positive direction by the Emotionally Loaded scale of the CPPD. As discussed above, it appears that sensitizers, and

not repressors, are the ones who score higher on the Distortion scale. This was explained as being the result of the greater maladjustment, and hence, the stronger emotional conflicts exhibited by sensitizers. Weinberg (1963) points out that repressors utilize judgment rather than perception, whereas sensitizers utilize perception rather than judgment when reacting to incoming stimuli. If this premise is accepted as being valid, then the present results are somewhat clarified.

Assuming that repressors do utilize judgment to a greater degree and with greater efficiency than do sensitizers (and this would also be suggested by the negative relationship between intelligence and R-S scale scores), one would then expect that repressors would respond in a manner which would reveal few or no emotional conflicts or emotional disturbances. The findings of Eriksen and Lazarus (1952), which indicate that subjects reject any perceptions related to emotional disturbance, would likewise lead to the prediction that those subjects who suffer from the greatest amounts of emotional disturbance (i.e. those who are most poorly adjusted), will have higher Distortion scores and lower Emotional Loading scores.

The high negative loading by the EPI Lie scale would suggest that this scale is not effectively measuring an individual's propensity to distort his responses in the direction of social acceptability. One possible explanation which appears to have a great deal of merit to the author, is the following: the EPI Lie scale does not measure the degree to which the individual is attempting to make himself "look good," but rather, it is measuring the degree to which the individual is unable to accept (or perceive) any stimuli which are threatening to his self-

esteem. This explanation would account for the high correlation between the Lie scale and the Distortion scale, and it would also be congruent with the finding that the first two factors are positively correlated with each other. In terms of Weinberg's (1963) findings, repressors, being more intelligent, are better able to "see through" the EPI Lie items, and they utilize their judgment capabilities to realize that socially acceptable responses would be in the direction of admitting to certain human failures which are referred to in the items. As a result, repressors think their way through the situation and do, in fact, show up as being overly honest on the EPI Lie scale.

The fact that age is significantly and negatively loaded on this second factor indicates that younger subjects are more able to see through the EPI Lie items than are the older subjects, and as well, the younger subjects also evince a much lesser need to distort perceptions of anxiety-provoking stimuli.

The third factor is saturated negatively with the neutral responses to the Rorschach, and positively with sexual responses, mainly to the Rorschach, but also to the A.S.C. Verbal Association Test. In effect, this means that those subjects who are most likely to choose sexual responses when given the opportunity, also tended to reject neutral and non-committal responses to the same stimuli. This factor does not correlate highly with any of the other factors, and does not appear to be related to any of the specific personality dimensions samples.

The fourth factor was found to be highly loaded by both the aggression responses to the Rorschach and the miscellaneous (i.e. anti-social) responses to the A.S.C. Verbal Association Test. The fact that

this factor is positively correlated with the second factor, indicates that those individuals who score high on the EPI Lie scale, low on the Emotionally Loaded scale of the CPPD, and high on the Distortion scale of the CPPD, would also tend to reject the aggressive interpretations of the Rorschach, as well as the anti-social responses on the Verbal Association Test. In accordance with the interpretation of the second factor, this would indicate that the more maladjusted subjects tend to reject any perceptions of anti-social or aggressive stimuli. This finding should be investigated further as it is certainly an interesting one.

The fifth factor is very clearly an "Extraversion" factor, and is in accordance with the findings of Golin et.al. (1967), who also found a separate factor of this personality dimension.

The final factor is saturated positively by both the arson responses to the Rorschach and the aggressive responses on the Verbal Association Test.

The Second-Order Factor Analyses

As explained in an earlier section of this text, it is sometimes useful to submit, to a factor analysis, the correlation matrix found to exist between the first-order oblique factors. This procedure allows the investigator to obtain a somewhat more basic factor structure in order to explain the variance in the experimental data. As mentioned earlier, however, the amount of weight which might be given to this higher-order structure is somewhat questionable. In the present study, therefore, the second-order factors were derived in order to allow for

greater speculation, based upon some evidence, as to the underlying determinants of the variable data. Two second-order factors were obtained, and together they account for 50.8% of the total variance. Of greater interest than the first-order factor loadings upon the second-order factors, are the actual original variable loadings upon the second-order factors. As described in the previous chapter, these second-order factors have been labelled the "Defensive and the "Susceptibility to Aggressive, Arson, and Anti-Social Responses" factors, respectively.

The first factor is loaded quite heavily by the measures of intellectual ability, which indicates that the more intelligent the subject, the more likely he is to reveal himself as being a stable, introverted, honest, and non-anxious repressor, who is able to handle anxiety-provoking perceptual stimuli. One explanation, supported by the data, is that the individual who is depicted as being a 'repressor' on the R-S scale, is a fairly intelligent individual who wants to make himself 'look good,' and who is also able to see through many of the psychological test questionnaires, and give socially acceptable, unrevealing responses. It is very interesting to note that rejection of arson responses to the Rorschach is also very much implicated in this factor. McKerracher's subnormal arsonist syndrome (McKerracher, 1970b) is replicated by the present findings, with the exception that the EPI Lie scale loads in the opposite direction. A possible explanation for this finding relates to the fact that McKerracher was dealing with subnormal arsonists, whereas the present findings were revealed with the more intelligent subjects. The present subjects indicated that arson is

an area of emotional disturbance for them, although they are not arsonists. These differences in the subject samples could account for the different findings pertaining to the EPI Lie scale. McKerracher's subjects, all being subnormal in intellectual ability, might not have been able to see through the EPI Lie scale items, and hence, they would have responded simply in a socially acceptable manner (i.e. similar to how the present subjects responded to the Motivational Distortion scale of the 16PF). The discrepancy in this particular finding is similar to the discrepancy between the present results and those of Golin et.al. (1967), who found that the MMPI Lie scale was implicated with repression.

It has been postulated above that in the present study, repressors were apparently able to think their way through the EPI Lie items, and therefore, they scored very low on the scale. The major difference between the MMPI and the EPI Lie items, is that the former are less extreme and definite in their wording than are the latter. For example, one of the MMPI Lie items states, "Sometimes at elections I vote for men about whom I know very little," whereas a similar item on the EPI Lie scale asks, "Do you sometimes talk about things you know nothing about?". Weinberg (1963) claims that repressors respond on the basis of judgment rather than perception, and as it certainly appears that it would be easier to see through the EPI Lie scale items than it would be to see through the MMPI items, differences in results could be predicted depending upon the Lie scale being utilized. The subjects in McKerracher's study might not have had the necessary amount of insight to see through the EPI items, and as a result, they might have simply responded as if the items were less extreme than they really were.

The other second-order factor is loaded only by the Rorschach sexual, aggressive, and arson scales, as well as the Verbal Association Test aggression and miscellaneous scales. Sexual responses on the Rorschach are rejected in favour of the aggression and arson ones, and this would indicate that individuals who found sex to be an area of emotional disturbance did not appear to have similar difficulties with either aggression or arson. This finding raises some questions about the common thought linking arson with sexual disturbance.

Conclusions and Implications

The results of the present study do not appear to support either of the two major deductive hypotheses stated in the introduction of this text. The first Promax factor was labelled "Questionnaire Repressiveness" and it consists of the major questionnaires which have been shown to relate to the repression-sensitization dimension. This factor was found to be quite distinct from the personality dimension of extraversion, and therefore, repressiveness was seen as an autonomous factor, being distinct from other measurable personality variables. The means and standard deviations found in the scores of the institutionalized sample did, in fact, differ significantly from those found in the 'normal' population. This result indicates that the personality traits which characterize institutionalized individuals are different from those which are seen in the general population at large.

The four null hypotheses relating to the new tests which were being piloted, could not be fully supported. The Calgary Projective Test of Perceptual Defensiveness was found to significantly correlate

with the EPI Lie scale, and the factor structure indicated a close relationship to the MMPI A scale and the R-S scale.

The scores obtained on the A.S.C. Verbal Association Test was related to the scores obtained on the repression-sensitization measures, but only insofar as the number of sexual responses was concerned. The evidence against the null hypothesis was not very strong, and at the present time, it is still questionable as to the value of this test in the study of the repression-sensitization dimension.

Similarly with the Forced-Choice Method of the Rorschach, the selection of arson responses was found to relate to the repression-sensitization dimension measures, and it was also found to be significantly implicated in both of the second-order factors. This finding would suggest that there might be some merit in the use of this technique, especially in the study of the repression-sensitization dimension of personality.

The final hypothesis, relating to the relationship between the two sections of the CPPD was also rejected, on the basis of a fairly high negative correlation being found to exist between them. It appears that the two parts of this test are related to each other, and that the manner in which an individual responds to one section will have a marked effect upon how he responds to the other. It will be necessary to investigate this finding further.

The results of the present study suggest that the individual who reveals himself as a sensitizer on the standard questionnaire measures, also tends to be the individual who is less intelligent, and who is unable to respond to (or correctly perceive) anxiety-provoking stimuli.

The results pertaining to the CPPD indicate that further research is essential in order to determine the reliability of the instrument. It would certainly be most helpful to obtain some standardization data, as well as an item analysis. It appears that this new instrument has been an effective measure of the stability and overall adjustment of the subjects tested. It will now be important to determine whether or not these results are replicable, both in a similar population, and also in a non-institutionalized one.

The present results also indicate a possible explanation as to why different results are obtained when the EPI Lie scale is used in lieu of the MMPI Lie scale. This finding deserves more investigation, and should be pursued.

Finally, the present results indicate the necessity to re-evaluate the validity of investigating the repression-sensitization dimension as if it were a bipolar continuum. Certainly in the present sample, the evidence indicates that it would be most useful to concentrate on the investigation of the maladjusted (i.e. sensitizing) individual.

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APPENDIX A
EYSENCK PERSONALITY INVENTORY

The Eysenck Personality Inventory

This inventory was designed (Eysenck & Eysenck, 1964) for use with adults, and is composed of three different scales. There are two scales consisting of twenty-four items each, which measure "Extraversion" and "Neuroticism," respectively. The third scale consists of nine items, and constitutes a measure of "social desirability response set" (McKerracher, Zwirner, & Harshman, 1970), or a "Lie" scale. Each of the fifty-seven items is in the form of a direct question, and the subject is asked to give either a "Yes" or "No" answer.

APPENDIX B

CALGARY BIOGRAPHICAL QUESTIONNAIRE

The Calgary Biographical Questionnaire

The Calgary Biographical Questionnaire was constructed by the author for use in the present study. This questionnaire is a composite of three other scales, which have been shown to relate to the repression-sensitization dimension of personality in normal populations. The three component scales are the following: the Repression-Sensitization scale (Byrne, 1961), the A scale of the MMPI (Welsh, 1956), and the R scale of the MMPI (Welsh, 1956). This questionnaire was constructed as a single inventory due to the fact that each of its components is comprised solely of questions from the MMPI. It was felt by the author that these questions should all be asked together in the same sequence in which they appear on the MMPI. In total, the questionnaire consists of two hundred and eight questions, some of which are scored on more than one of the three component scales. All of the items are phrased as statements, and the subject is asked to classify each statement as being either "True" or "False" for him.

Instructions for the Calgary Biographical Questionnaire

The instructions for this questionnaire were as follows:

"I am going to be asking a number of questions about you and I want to know how you feel about yourself. Every person is different, and I just want to know how you think about yourself. There are no real right or wrong answers, because whatever is true about one person does not have to be true about another person.

With this first test, I shall be making a lot of statements about you. Some of the statements will be true about you, and others will not be true. What I should like you to do, is to listen carefully to each of the statements, and decide if they are true or not true about you. If the statement is true about you most of the time, then you would answer that it is true. If the statement is not true about you most of the time, then you would say that it is not true.

If there are any words which you do not understand, or if you are not sure about anything, please ask me to explain. Remember, there are no right or wrong answers, and I just want to know how you see yourself.

Repression-Sensitization Items

Number in Scale

3. I wake up fresh and rested most mornings.
6. My hands and feet are usually warm enough.
7. My daily life is full of things that keep me interested.
9. There seems to be a lump in my throat much of the time.
11. Once in a while I think of things too bad to talk about.
13. At times I have fits of laughing and crying that I cannot control.
15. I feel that it is certainly best to keep my mouth shut when I'm in trouble.
17. I find it hard to keep my mind on a task or job.
18. I seldom worry about my health.
20. I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going."
21. My sleep is fitful and disturbed.
22. Much of the time my head seems to hurt all over.
26. I am in just as good physical health as most of my friends.
27. I prefer to pass by school friends, or people I know but have not seen for a long time, unless they speak to me first.
28. I am almost never bothered by pains over the heart or in my chest.
29. I am a good mixer.
33. I wish I could be as happy as others seem to be.
36. Most of the time I feel blue.
39. I am certainly lacking in self-confidence.
40. I usually feel that life is worthwhile.

41. It takes a lot of argument to convince most people of the truth.
43. I think most people would lie to get ahead.
44. I do many things which I regret afterwards (I regret things more often than others seem to).
46. I have very few quarrels with members of my family.
48. My hardest battles are with myself.
49. I have little or no trouble with my muscles twitching or jumping.
50. I don't seem to care what happens to me.
52. Much of the time I feel as if I have done something wrong or evil.
53. I am happy most of the time.
54. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.
56. Often I feel as if there were a tight band about my head.
58. I seem to be about as capable and smart as most others around me.
59. Most people will use somewhat unfair means to gain profit or an unfair advantage rather than to lose it.
62. Often I can't understand why I have been so cross and grouchy.
64. I do not worry about catching diseases.
67. I commonly wonder what hidden reason another person may have for doing something nice for me.
69. Criticism or scolding hurts me terribly.
71. My conduct is largely controlled by the customs of those about me.
72. I certainly feel useless at times.
73. At times I feel like picking a fist fight with someone.
74. I have often lost out on things because I couldn't make up my mind soon enough.

75. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.
77. Most nights I go to sleep without thoughts or ideas bothering me.
82. I cry easily.
83. I cannot understand what I read as well as I used to.
84. I have never felt better in my life than I do now.
85. I resent having anyone take me in so cleverly that I have to admit that it was one on me.
86. I do not tire quickly.
87. I like to study and read about things that I am working at.
88. I like to know some important people because it makes me feel important.
90. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of things.
91. I frequently have to fight against showing that I am bashful.
93. I seldom or never have dizzy spells.
94. My memory seems to be all right.
95. I am worried about sex matters.
96. I find it hard to make talk when I meet new people.
97. I am afraid of losing my mind.
99. I frequently notice my hand shakes when I try to do something.
100. I can read a long while without tiring my eyes.
101. I feel weak all over much of the time.
102. I have very few headaches.
103. Sometimes, when embarrassed, I break out in a sweat which annoys me greatly.

104. I have no difficulty in keeping my balance in walking.
107. I wish I were not so shy.
108. I enjoy many different kinds of play and recreation.
110. In walking I am very careful to step over sidewalk cracks.
111. I frequently find myself worrying about something.
115. I hardly ever notice my heart pounding and I am seldom short of breath.
117. I get mad easily and then get over it soon.
118. I bood a great deal.
119. I have periods of such great restlessness that I cannot sit long in a chair.
120. I dream frequently about things that are best kept to myself.
121. I believe I am no more nervous than most others.
122. I have few or no pains.
126. I have difficulty in starting to do things.
128. It is safer to trust nobody.
129. Once a week or oftener I become very excited.
130. When in a group of people I have trouble thinking of the right things to talk about.
131. When I leave home I do not worry about whether the door is locked and the window closed.
135. I have often felt that strangers were looking at me critically.
136. I drink an unusually large amount of water every day.
140. I am always disgusted with the law when a criminal is freed through the arguments of a smart lawyer.
141. I work under a great deal of tension.

- 142. I am likely not to speak to people until they speak to me.
- 144. Life is a strain for me much of the time.
- 145. In school I found it very hard to talk before the class.
- 146. Even when I am with people I feel lonely much of the time.
- 147. I think nearly anyone would tell a lie to keep out of trouble.
- 148. I am easily embarrassed.
- 149. I worry over money and business.
- 152. I easily become impatient with people.
- 153. I feel anxiety about something or someone almost all the time.
- 154. Sometimes I become so excited that I find it hard to get to sleep.
- 155. I forget right away what people say to me.
- 156. I usually have to stop and think before I act even in trifling matters.
- 157. Often I cross the street in order not to meet someone I see.
- 158. I often feel as if things were not real.
- 159. I have a habit of counting things that are not important such as bulbs on electric signs, and so forth.
- 160. I have strange and peculiar thoughts.
- 162. I have been afraid of things or people that I knew could not hurt me.
- 163. I have no dread of going into a room by myself where other people have already gathered and are talking.
- 164. I have more trouble concentrating than others seem to have.
- 165. I have several times given up doing a thing because I thought too little of my ability.

166. Bad words, often terrible words, come into my mind and I cannot get rid of them.
167. Sometimes some unimportant thought will run through my mind and bother me for days.
168. Almost every day something happens to frighten me.
169. I am inclined to take things hard.
170. I am more sensitive than most other people.
171. At periods my mind seems to work more slowly than usual.
172. I very seldom have spells of the blues.
173. I wish I could get over worrying about things I have said that may have injured other people's feelings.
174. People often disappoint me.
175. I feel unable to tell anyone all about myself.
176. My plans have frequently seemed so full of difficulties that I have had to give them up.
177. Often, even though everything is going fine for me, I feel that I don't care about anything.
178. I have sometimes felt that difficulties were piling up so high that I could not overcome them.
179. I often think, "I wish I were a child again."
181. It makes me feel like a failure when I hear of the success of someone I know well.
182. I am apt to take disappointments so keenly that I can't put them out of my mind.
184. At times I think I am no good at all.
186. I worry quite a bit over possible misfortunes.

- 188. I am apt to pass up something I want to do because others feel that I am not going about it in the right way.
- 196. I have several times had a change of heart about my life work.
- 201. I have a daydream life about which I do not tell other people.
- 203. I have often felt guilty because I have pretended to feel more sorry about something than I really was.
- 205. I feel tired a good deal of the time.
- 207. I sometimes feel that I am about to go to pieces.

Welsh's R Scale Items

- 1. I like mechanics magazines.
- 5. I like to read newspaper articles on crime.
- 8. I am about as able to work as I ever was.
- 10. I enjoy detective or mystery stories.
- 19. At times I feel like smashing things.
- 26. I am in just as good physical health as most of my friends.
- 38. I think I would like the kind of work a forest ranger does.
- 55. I frequently find it necessary to stand up for what I think is right.
- 60. I like dramatics.
- 64. I do not worry about catching diseases.
- 70. I like to cook.
- 73. At times I feel like picking a fist fight with someone.
- 79. I have never had a fit or convulsion.
- 81. I have had periods in which I carried on activities without knowing later what I had been doing.

103. Sometimes, when embarrassed, I break out in a sweat which annoys me greatly.
109. I like to flirt.
112. I think I would like the work of a building contractor.
113. I like science.
132. I do not blame a person for taking advantage of someone who lays himself open to it.
133. At times I am all full of energy.
137. I do not often notice my ears ringing or buzzing.
138. Once in a while I feel hate toward members of my family whom I usually love.
150. My mother or father often made me obey even when I thought that it was unreasonable.
180. I have often met people who were supposed to be experts who were no better than I.
183. If given the chance I would make a good leader of people.
185. I like to attend lectures on serious subjects.
187. I try to remember good stories to pass them on to other people.
189. I was fond of excitement when I was young (or in childhood).
190. I am often inclined to go out of my way to win a point with someone who has opposed me.
191. I enjoy social gatherings just to be with people. I enjoy the excitement of a crowd.
193. My worries seem to disappear when I get into a crowd of lively friends.
195. I have no difficulty starting or holding my urine.

- 197. I am often sorry because I am so cross and grouchy.
- 198. I am fascinated by fire.
- 200. I like to let people know where I stand on things.
- 202. Some of my family have quick tempers.
- 204. I would like to wear expensive clothes.
- 206. I like repairing a door latch.
- 208. I am very careful about my manner of dress.

Welsh's A Scale Items

- 17. I find it hard to keep my mind on a task or job.
- 20. I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going."
- 33. I wish I could be as happy as others seem to be.
- 36. Most of the time I feel blue.
- 44. I do many things which I regret afterwards (I regret things more often than others seem to).
- 69. Criticism or scolding hurts me terribly.
- 74. I have often lost out on things because I couldn't make up my mind soon enough.
- 118. I brood a great deal.
- 126. I have difficulty in starting to do things.
- 130. When in a group of people I have trouble thinking of the right things to talk about.
- 135. I have often felt that strangers were looking at me critically.
- 144. Life is a strain for me much of the time.
- 146. Even when I am with people I feel lonely much of the time.

- 148. I am easily embarrassed.
- 153. I feel anxiety about something or someone almost all the time.
- 156. I usually have to stop and think before I act even in trifling matters.
- 157. Often I cross the street in order not to meet someone I see.
- 158. I often feel as if things were not real.
- 164. I have more trouble concentrating than others seem to have.
- 167. Sometimes some unimportant thought will run through my mind and bother me for days.
- 171. At periods my mind seems to work more slowly than usual.
- 172. I very seldom have spells of the blues.
- 173. I wish I could get over worrying about things I have said that may have injured other people's feelings.
- 174. People often disappoint me.
- 175. I feel unable to tell anyone all about myself.
- 176. My plans have frequently seemed so full of difficulties that I have had to give them up.
- 177. Often, even though everything is going fine for me, I feel that I don't care about anything.
- 178. I have sometimes felt that difficulties were piling up so high that I could not overcome them.
- 181. It makes me feel like a failure when I hear of the success of someone I know well.
- 182. I am apt to take disappointments so keenly that I can't put them out of my mind.
- 184. At times I think I am no good at all.

- 186. I worry quite a bit over possible misfortunes.
- 188. I am apt to pass up something I want to do because others feel that I am not going about it in the right way.
- 196. I have several times had a change of heart about my life work.
- 199. I must admit that I have at times been worried beyond reason over something that really did not matter.
- 201. I have a daydream life about which I do not tell other people.
- 203. I have often felt guilty because I have pretended to feel more sorry about something than I really was.
- 205. I feel tired a good deal of the time.
- 207. I sometimes feel that I am about to go to pieces.

Buffer Items

- 2. I have a good appetite.
- 4. I am easily awakened by noise.
- 12. I am very seldom troubled by constipation.
- 14. I am troubled by attacks of nausea and vomiting.
- 16. At times I feel like swearing.
- 23. I do not always tell the truth.
- 24. My judgment is better than it ever was.
- 25. Once a week or oftener I suddenly feel hot all over, without apparent cause.
- 30. Everything is turning out just like the prophets of the Bible said it would.
- 31. I do not read every editorial in the newspaper every day.

32. I sometimes keep on at a thing until others lose their patience with me.
34. I think a great many people exaggerate their misfortunes in order to gain sympathy and help of others.
35. I get angry sometimes.
37. I sometimes tease animals.
42. Once in a while I put off until tomorrow what I ought to do today.
45. I go to church almost every week.
47. I believe in the second coming of Christ.
51. Sometimes when I am not feeling well I am cross.
57. My table manners are not quite as good at home as when I am out in company.
61. The sight of blood neither frightens me nor makes me sick.
63. I have never vomited blood or coughed up blood.
65. At times my thoughts have raced ahead faster than I could speak them.
666. If I could get into a movie without paying and be sure I was not seen, I would probably do it.
68. I believe that my home life is as pleasant as that of most people I know.
76. I would rather win than lose in a game.
78. During the past few years I have been well most of the time.
80. I am neither gaining nor losing weight.
89. What others think of me does not bother me.
92. I have never had a fainting spell.
98. I am against giving money to beggars.

- 105. I do not have spells of hay fever or asthma.
- 106. I do not like everyone I know.
- 114. I gossip a little at times.
- 116. I have at times stood in the way of people who were trying to do something, not because it amounted to much but because of the principle of the thing.
- 123. Sometimes without any reason or even when things are going wrong I feel excitedly happy, "ontop of the world."
- 124. I can be friendly with people who do things which I consider wrong.
- 125. Sometimes at elections I vote for men about whom I know very little.
- 127. I sweat very easily even on cool days.
- 134. My eyesight is as good as it has been for years.
- 139. Once in a while I laugh at dirty jokes.
- 143. I have periods in which I feel unusually cheerful without any special reason.
- 151. I almost never dream.
- 161. I get anxious and upset when I have to make a short trip away from home.
- 194. I find it hard to set aside a task that I have undertaken, even for a short time.

APPENDIX C

A.S.C. VERBAL ASSOCIATION TEST

The A.S.C. Verbal Association Test

The A.S.C. Verbal Association Test (McKerracher, 1970b) is one of the new instruments which were piloted during the course of the present investigation. The test was designed to differentiate between those individuals who have experienced some type of anti-social and/or institutional encounters, and those who have never had these types of experiences. The test consists of fifty-two stimulus words, each of which is followed by two alternative words. Of the fifty-two stimulus words, thirteen are definitely neutral and the remaining thirty-nine are ambiguous. Although both of the alternatives accompanying the neutral words are themselves neutral, only one of the alternatives following the ambiguous words is neutral, while the other alternative is emotionally-loaded. The emotionally loaded sets are designed so that there are thirteen possible sexual, thirteen possible aggressive, and thirteen possible miscellaneous or anti-social associations which might be made by the subject. The subject is asked to state which of the two alternatives is the one which he is most likely to associate with the stimulus words.

Instructions for the A.S.C. Verbal Association Test

The instructions for this questionnaire were as follows:

"I am now going to read you a list of words, and after each word, I am going to read two other words. These two other words will be associated with the first word, and what I should like you to do will be to tell me which of these two words, you associate more with the first word.

Again in this situation, there is no right or wrong answer, because both of the second words are associated with the first words, in all cases. However, some people will associate one of the words given as alternatives, more with the first word, than they will the other alternative word. All I would like you to tell me is which word you associate more with the first words.

For example, if I were to say, "Cup--saucer or plate?," which of these two words would you associate more with the word 'cup'?

Once the tester was certain that the subject understood the task, he proceeded to administer the list of words.

Miscellaneous Items

Number in Scale

6. Grass	=	Pot	or	Shrub
7. Sentence	=	Word	or	Prison
11. Lift	=	Steal	or	Raise
16. Dope	=	Dummy	or	Drugs
18. Fix	=	Shot	or	Mend
25. Bull	=	Cow	or	Guard
27. Smash	=	Accident	or	Grab
28. Court	=	King	or	Judge
33. Speed	=	Car	or	Pill
35. Fence	=	Rail	or	Receiver
39. Fuzz	=	Police	or	Fluff
43. Job	=	Work	or	Heist
48. Rap	=	Blame	or	Knock

Aggressive Items

3. Boot	=	Shoe	or	Kick
8. Box	=	Fight	or	Case
13. Knife	=	Stab	or	Fork
15. Socks	=	Punch	or	Trousers
20. Paste	=	Dough	or	Bash
23. Strike	=	Smack	or	Walk-out
31. Blow	=	Hit	or	Puff
37. Hammer	=	Tool	or	Punch

42. Wrench	=	Pull	or	Spanner
45. Gag	=	Trick	or	Bind
47. Chop	=	Cut	or	Meat
51. Punch	=	Drink	or	Blow
52. Claw	=	Scratch	or	Bear

Sex Items

4. Neck	=	Collar	or	Kiss
10. Bottom	=	Buttock	or	Basement
14. Organ	=	Sex	or	Music
19. Tart	=	Cake	or	Skirt
21. Screw	=	Nail	or	Girl
24. Strip	=	Comic	or	Clothes
29. Bed	=	Woman	or	Sleep
32. Bust	=	Statue	or	Breat
34. Hand	=	Thigh	or	Finger
38. Stroke	=	Heart	or	Thigh
40. Bird	=	Girl	or	Feather
44. Pick Up	=	Truck	or	Prostitute
49. Prick	=	Pin	or	Cock

Neutral Items

1. Paper	=	Ink	or	Pencil
2. Table	=	Stool	or	Chair
5. Day	=	Night	or	Light
9. Door	=	Window	or	Floor
12. Train	=	Plane	or	Bus

17.	Cigarette	=	Smoke	or	Match
22.	Toothbrush	=	Comb	or	Hairbrush
26.	Coffee	=	Tea	or	Soup
30.	Wool	=	Cotton	or	Leather
36.	Patient	=	Illness	or	Doctor
41.	Board	=	Poster	or	Black
46.	Book	=	Page	or	Story
50.	Hand	=	Finger	or	Thumb

APPENDIX D

RORSCHACH FORCED-CHOICE METHOD

The Rorschach Inkblot Test, Forced-Choice Method

The Rorschach Inkblot Test was first introduced to the field of psychological assessment and diagnosis when its author published the monograph entitled, "Psychodiagnostik" (Rorschach, 1921). In essence, the Rorschach is a diagnostic test based upon the perceptions of the subject, when he is exposed to a series of ten standardized inkblots. The test consists of ten cards, each measuring approximately six and three-quarter inches by nine and one-half inches. Upon each card is printed a nearly symmetrical inkblot design. Each blot is unique, and as a result of its individual form, shading, coloring, et cetera, it tends to provoke typical responses with which the tester becomes more and more familiar (Klopfer & Davidson, 1962).

The Forced-Choice Method of administering the test was devised to allow the investigator the opportunity of measuring the amount of perceptual defensiveness employed by a subject in regards to specific areas of emotional conflict (McKerracher, 1970a). In this instance, the examiner shows the cards to the subject, and simultaneously offers to him, four possible descriptions for each blot. The subject is then asked to rank-order the given descriptions, from the one which is least descriptive of that particular blot. The four descriptions which are given for each inkblot are categorized as being sexual, aggressive, arsonistic, or neutral. Through the use of this method, the examiner obtains four scores for each subject, based upon the weighted ranks given to the descriptions by the subject. As the subject rank-orders the descriptions, the examiner gives each category a ranking of 1, through 4, for each of

the ten blots, thus obtaining a total of 10 through 40 for each category.

In accordance with the theory underlying all of the projective techniques, these four scores should be indicative of the amount of emotional disturbance within the individual, with regards to these specific areas of emotional conflict. With this approach, however, since the subject is given other possible choices of responses to the inkblots, he should repress problem areas. It would be expected that repressors would reject problem areas, and tend to choose the neutral responses.

Instructions for the Rorschach Forced-Choice Method

The instructions for the Rorschach Forced-Choice Method were as follows:

"I am going to show you a series of ten inkblots, and I would like you to look carefully at each of them. These are only inkblots, and they are not pictures of anything. However, when people see these blots, they remind them of different things, and the people can see different things in the inkblots.

As I show you each of the inkblots, I am going to give you four descriptions of what the inkblot might look like, and I want you to tell me which description fits the inkblot best. After you tell me which description fits the blot best, I would like you to tell me which is the next best description and so on.

Remember, they are only inkblots and I just want to know which descriptions you think are the best ones for each of the ten inkblots. I shall repeat the descriptions until you have made all of your choices."

To avoid the problem of subjects developing a set order to respond, the alternatives were given in random order.

<u>Card Number</u>	<u>Description</u>	<u>Type of Description</u>
I	Two animals fighting.....	Aggressive
	Figure of a woman.....	Sexual
	A burning torch.....	Arson
	A bat.....	Neutral
II	Two animals attacking each other and bleeding.....	Aggressive
	Two dogs mating.....	Sexual
	Two men running towards a fire.....	Arson
	A butterfly.....	Neutral
III	Two boxers facing each other	Aggressive
	X-ray of a woman's body.....	Sexual
	Sparks rising from a cooking fire....	Arson
	Two hens.....	Neutral
IV	A dead man.....	Aggressive
	A woman's private parts.....	Sexual
	Black smoke from a fire.....	Arson
	A beetle.....	Neutral
V	A smashed body among wreckage.....	Aggressive
	A striptease girl with black veil....	Sexual
	A plane in flames.....	Arson
	A swallow.....	Neutral

VI	Skin of a dead animal.....	Aggressive
	A man's private parts.....	Sexual
	A blazing tree.....	Arson
	A fish.....	Neutral
VII	Two children scrapping.....	Aggressive
	Two bunny girls.....	Sexual
	Smoke billowing from a chimney.....	Arson
	A map.....	Neutral
VIII	Two animals killing their prey.....	Aggressive
	Part of a woman's body.....	Sexual
	A forest fire.....	Arson
	A badge.....	Neutral
IX	Two deer fighting.....	Aggressive
	Birth of a baby.....	Sexual
	A factory on fire.....	Arson
	A lobster.....	Neutral
X	Insects eating each other.....	Aggressive
	Inside parts of a body.....	Sexual
	Fire in a paint shop.....	Arson
	A flower garden.....	Neutral

APPENDIX E

CALGARY PROJECTIVE TEST OF PERCEPTUAL DEFENSIVENESS

The Calgary Projective Test of Perceptual Defensiveness

This test was developed (McKerracher, 1970b) as a dual purpose test to be used in the area of personality research, where the use of a projective instrument seems to be indicated. The test is composed of fifty-four color pictures in which line continuity has been obscured by a dot screen. One half of the pictures are designed to be ambiguous representations of social situations, while the other half of the cards depict the same types of social situations in an unambiguous manner.

The ambiguous pictures are designed to elicit responses which are more typical of a minority part of the general population than of the majority. This minority group would consist of those individuals who possess an anti-conventional social response set, and/or esoteric experiences in mental hospitals, penal institutions, or hospitals for the mentally subnormal. Responses given to the ambiguous pictures are scored in the usual projective test; manner, i.e. they are scored as being 'loaded' or 'unloaded'. In order for a response to be scored as being 'loaded', it must consist of an emotionally-disturbed, sexually over-sensitive, hostile, criminal, or anti-social interpretation of the obscured picture. The underlying assumption with this half of the test is that an individual's social experiences shape his response set, and that those individuals with esoteric or abnormal experiences and habit patterns will more readily perceive cues relevant to their atypical activities or tendencies (McKerracher, 1970a).

The other half of this test is designed to measure the strength of the social desirability response set inherent in an individual, in

much the same manner as does the typical "Lie scale" which is commonly found on most standard personality questionnaires. Although these pictures represent the same areas of social behavior as are seen in the ambiguous pictures, the situations depicted in these instances are ambiguous. If honest or accurate interpretation is avoided, distorted, or neutralized, it is reasonable to hypothesize that the origins of this suppression are defensiveness and an unwillingness to describe what is actually perceived. Responses to the unambiguous pictures are scored as being either "distorted" or "undistorted," the subject's description of the picture must be either euphamistic or innocuous, and it must attempt to ameliorate or reduce the amount of emotionality depicted. Those responses which are scored "distorted" must, therefore, be attempts at both avoiding emotionally loaded descriptions, and simultaneously, they must be ascribing more socially acceptable contexts to the test items.

In summation then, the Calgary Projective Test of Perceptual Defensiveness renders two distinct scores for each subject. The score for "loaded" interpretations gives an indication as to the esoteric or abnormal experiences in the background of each subject, while on the other hand, the score for "distortions" indicates the amount of co-operation displayed by the subject in the projective situation.

Instructions for the C.P.P.D.

The instructions for this test were given as follows:

"Now I am going to show you a series of different pictures, and I should like you to look at each of them carefully. After looking at the picture, I should like you to tell me what is going on in the picture. In other words, I should like you to tell me what you see. Then, I should like you to make up a short title which explains what is happening in the picture.

Now look at this first picture and tell me what you see. (After the subject had completed his description). Do you see anything else? Now, can you give me a title for this picture?"

This procedure was repeated for each of the fifty-four pictures, and the subjects' responses were recorded verbatim for this particular test.

Ambiguous Pictures

Number in Order

Description of Picture

1. Man bending over a child.
2. Man in a white coat leading another man down a corridor.
3. Man carving loaf.
4. Man climbing a high wall.
5. Man climbing in a window at ground level.
6. Man with stool raised above head (using both hands). He might be lifting it or throwing it.
9. Man swallowing a table knife.
11. Man standing apart from two women. One has her back to him, the other is standing with her back to the viewer, but looking towards the lone figure.
12. Man standing beside a haystack partially concealed.
16. Man's figure is uniform (could be naval or police) standing in a doorway. He could also be a commissionaire.
17. Man climbing a drainpipe.
18. Man drinking a pint of beer beside a woman seated on a stool.
19. Woman sitting with a baby across her knee. She could be spanking it or changing its diaper.
20. Man wielding an axe above his head. He might be chopping wood or preparing to kill someone.
26. Man and woman facing each other close together.
29. Man in a white coat closing the door of a room.

- 32. Man putting his hand in a car window.
- 33. Man with hands around the neck of a sack-like object below waist level.
- 34. Child figure lying half in bed, half on floor, back to camera. A man's figure is in the doorway.
- 35. Man lifting an object off a counter to put in a bag.
- 36. Man holding a pair of scissors as though about to cut his wrist or fingernails.
- 37. Woman holding a boy's hand. Man's figure is walking away without looking back.
- 39. Man standing in foreground facing viewer, with a burning house in the background.
- 41. Man peeping in a window.
- 43. Uniformed figure holding a baton. He could be a policeman.
- 47. Man holding a revolver looking at it, not pointing it.
- 49. Two men standing close together with backs to viewer and hands hidden.

Unambiguous Pictures

- 7. Bikini girl posing towards camera with a sun-hat on.
- 8. Man kneeling before a safe wearing a mask.
- 10. Woman holding baby to her breast feeding it.
- 13. Man with a knife upraised to stab.
- 14. Plain view of a woman in underwear lying on a bed.
- 15. Man in a white coat taking the pulse of a man who is lying on a couch.

21. Man flinging a brick through a shop window in order to steal something.
22. A woman in underwear adjusting her stocking.
23. Man slashing his wrist with a knife.
24. Policeman writing in his notebook beside a car with a driver.
25. Man bending down striking a match to light a fire to a bundle of rubbish.
27. Man striking another man on the jaw.
28. Woman pushing a pram.
30. Strip-tease dancer performing--peeling off a shoulder strap.
31. Man sliding down a rope from a barred window.
38. Dog lifting its hind leg against a post or tree.
40. Man standing facing a noose with hands tied behind his back.
42. Man in a white coat injecting the arm of a man lying in bed with a hypodermic syringe.
44. Man taking a wallet out of someone's hip pocket.
45. Man with a hand on woman's knee, sitting on a bench facing the viewer.
46. A pregnant woman standing side-on.
48. Man stealing a woman's handbag with a walking stick whilst she chats to a friend.
50. Man smashing a room window with his hands.
51. Man setting fire to a pile of faggots surrounding a stake to which a woman is tied.
52. Warden locking a cell door on an man.
53. Man with a beard wearing a woman's dress.
54. Man beating a woman with a whip.

The Calgary Projective Test of Perceptual Defensiveness Scoring Examples

A) Ambiguous Pictures Scored "Loaded"

Picture Number	Description
26.	"Boy trying to goose up the girl. She'll slap him in the face. He'll run away. Police will go after him. He'll go to jail." Title: 'The Troublemaker'.
33.	"Man strangling someone." Title: 'Murder'.
35.	"Girl standing on table holding something. Could be a gun." Title: 'Going to Kill Herself'.
43.	"Policeman with billy in his hand. Ready to knock someone on head." No title.
49.	"Big dope sale being made." Title: 'Obviou'.

B) Unambiguous Pictures Scored "Distorted"

Picture Number	Description
8.	"Man trying to repair something." Title: 'Engine'.
22.	"Lady sitting in chair looking at fireplace. Seeing how what she's cooking is doing. Hamburger. She might burn herself." Title: 'The Lady in the Chair'.
25.	"Huge bear on the ground. Man giving him something to drink." No title.
38.	"Little dog looking for a bone to play with." Title: 'The Little Dog'.

APPENDIX F

MOTIVATIONAL DISTORTION SCALE 16PF

The Motivational Distortion Scale of the 16PF

The Sixteen Personality Factor Questionnaire was developed by Cattell (1950), and has been used chiefly in the areas of vocational and educational guidance. According to its author, Form C of the test was developed to serve four functions: a) to obtain the same measures of personality as do Forms A and B, only in a shorter period of time; b) to use a more elementary language than is used in the other forms; c) to include an index to guard against attempts at distortion of the self-picture; and, d) to be used as a third extension of the test, to give a more reliable picture of the testee, when time permits (Cattell, 1962).

The total test consists of one hundred and five questions, six for each of fifteen factors, eight for the intelligence factor, and seven items are arranged in a manner which is planned to give maximum convenience in scoring by stencil. There are three alternative answers for each question, so that the testee is not forced into giving an incorrect distribution of attitudes because of the lack of possible 'middle of the road' compromises (Cattell, 1962).

Cattell defines the Motivational Distortion scale as "a scale introduced to determine the amount of faking or sabotage which goes on in answering a questionnaire" (Cattell, 1965). In an earlier text, Cattell (1957) points out that there is much research which clearly indicates that a subject's perception of the relation of his answers to the major purpose for which the test is being given, will significantly distort his responses. The score obtained by an individual on the Motivational Distortion scale is, therefore, an indication of his tendency to distort verbally, his self perceptions.

In the present study, only the Motivational Distortion scale scores were utilized, although the entire questionnaire was administered in its full context to all subjects (Note: the intelligence factor scores were also used in relation to one finding discussed in the text).

Motivational Distortion Items 16 PF, Form C

Number in Scale

1. I think my memory is better than it ever was.
18. I have sometimes, even if briefly, had hateful feelings towards my parents.
35. I find it hard to admit when I am wrong.
52. When I know I'm doing the right thing I find my task easy.
69. My mind does not work as clearly at some times as at others.
86. I may be less considerate of other people than they are of me.
103. I may deceive people by being friendly when I really dislike them.

APPENDIX G

COLORED AND STANDARD MATRICES

The Colored Progressive Matrices (1956 revision)

The Colored Progressive Matrices (Raven, 1956) were devised to form a non-verbal measure of intellectual ability, in that they were designed to "measure the degree to which a person can think clearly, and to assess the chief cognitive processes of which children under eleven years of age are usually capable" (Harshman, 1971). The test is composed of three sets of matrices, each set containing twelve items. Each test item consists of a matrix or design, part of which has been removed, and the task set before the subject being tested, is to select which of several alternatives is the correct part to complete the matrix (Raven, 1941). This test is purported to be satisfactorily usable with people who are intellectually subnormal, or who have deteriorated (Raven, 1965). The test has also been shown to be a useful measure of intellectual subnormality (Orme, 1961).

The Standard Progressive Matrices

This test is comprised of five sets, each containing twelve matrices or designs, a part of which has been removed. The Standard Progressive Matrices (Raven, 1938) were published prior to the Colored Matrices, and have been used widely as a non-verbal test of intellectual ability for normal adults and children. Raven (1960) states that this "is a test of a person's capacity.....to apprehend meaningless figures.....see the relations between them.....and.....develop a systematic method of reasoning." The main difference between the Standard and the Colored Matrices, aside from the difficulty level, is that the former designs are in black-and-white and the latter are in color.

APPENDIX H
RAW SCORE DISTRIBUTION

Extraversion EPI

Scores	0-4	5-9	10-14	15-19	20-24	N
Total	2	4	12	9	0	27

Neuroticism EPI

Scores	0-4	5-9	10-14	15-19	20-24	N
Total	2	5	4	7	8	27

Lie Scale EPI

Scores	0-1	2-3	4-5	6-7	8-9	N
Total	9	10	6	2	0	27

Repression-Sensitization Scale

Scores	0-25	26-50	51-75	76-100	101-127	N
Total	1	4	14	8	0	27

R Scale MMPI

Scores	0-7	8-15	16-23	24-31	32-39	N
Total	5	11	11	0	0	27

A Scale MMPI

Scores	0-7	8-15	16-23	24-31	32-39	N
Total	1	6	7	8	5	27

Colored Matrices

Scores	0-6	7-13	14-20	21-27	28-36	N
Total	0	1	3	9	14	27

Standard Matrices

Scores	0-12	13-24	25-36	37-48	49-60	N
Total	1	12	6	3	5	27

Verbal Association - Sex

Scores	0-2	3-5	6-8	9-11	12-13	N
Total	8	13	5	1	0	27

Verbal Association - Aggression

Scores	0-2	3-5	6-8	9-11	12-13	N
Total	3	9	14	1	0	27

Verbal Association - Miscellaneous

Scores	0-2	3-5	6-8	9-11	12-13	N
Total	4	17	4	2	0	27

Rorschach Sex

Scores	10-15	16-21	22-27	28-33	34-40	N
Total	5	3	13	6	0	27

Rorschach Aggression

Scores	10-15	16-21	22-27	28-33	34-40	N
Total	0	0	14	11	2	27

Rorschach Arson

Scores	10-15	16-21	22-27	28-33	34-40	N
Total	0	8	16	3	0	27

Rorschach Neutral

Scores	10-15	16-21	22-27	28-33	34-40	N
Total	0	4	14	9	0	27

CPPD Emotional Loading

Scores	0-5	6-11	12-17	18-23	24-27	N
Total	7	14	5	1	0	27

CPPD Distortion

Scores	0-5	6-11	12-17	18-23	24-27	N
Total	8	11	5	2	1	27

Motivational Distortion 16PF

Scores	0-2	3-5	6-8	9-11	12-14	N
Total	2	9	13	3	0	27

Age In Months

Number	192-306	307-426	427-546	547-666	667-686	N
Total	10	8	5	3	1	27

APPENDIX I

FIRST-ORDER PRINCIPAL COMPONENTS

Scale/Factor	I	II	III	IV	V	VI	h^2
Extraversion EPI	-304	-037	097	-323	725	-385	881
Neuroticism EPI	-617	485	110	-179	-290	-021	745
Lie Scale EPI	-462	-466	118	630	052	246	905
Repression-Sensitization	-682	666	073	035	-138	057	938
Welsh's R Scale MMPI	394	-094	-091	-008	-670	359	750
Welsh's A Scale MMPI	-708	591	031	017	-136	061	874
Colored Matrices	814	-024	-246	130	-018	-018	741
Standard Matrices	891	074	-193	148	-050	052	864
Verbal Association - Sex	689	264	189	311	253	032	742
Verbal Association - Aggression	-051	343	-116	-199	540	568	689
Verbal Association - Miscellaneous	274	563	029	562	-021	-258	776
Rorschach Sex	190	010	957	-081	-116	013	972
Rorschach Aggression	107	372	-434	560	184	-255	751
Rorschach Arson	-527	-004	-433	097	227	551	830
Rorschach Neutral	048	-399	-597	-511	-215	-239	882
CPPD Emotional Loading	577	521	-053	-162	091	108	653
CPPD Distortion	-760	-272	-134	411	-180	-163	898
Motivational Distortion 16PF	373	-509	279	091	154	248	570
Age	-385	-716	060	242	148	-048	747
Sum of h^2							14.508
Eigen-Values	5.34	3.18	1.95	1.88	1.69	1.27	

APPENDIX J
FIRST-ORDER VARIMAX FACTORS

Scale/Factor	I	II	III	IV	V	VI
Extraversion EPI	-035	-003	-062	-129	927	050
Neuroticism EPI	-855	009	023	-107	-005	-019
Lie Scale EPI	057	-887	244	066	-088	207
Repression-Sensitization	-933	-024	143	127	043	168
Welsh's R Scale MMPI	154	154	-069	-144	-818	-088
Welsh's A Scale MMPI	-904	-074	083	091	048	180
Colored Matrices	617	404	-093	325	-277	-082
Standard Matrices	605	497	001	350	-351	-061
Verbal Association - Sex	438	413	445	423	-035	000
Verbal Association - Aggression	-066	313	132	-061	204	789
Verbal Association - Miscellaneous	-102	208	301	770	-085	-180
Rorschach Sex	034	135	796	-389	-008	-410
Rorschach Aggression	-017	013	-122	852	061	084
Rorschach Arson	-237	-342	-211	-004	-024	782
Rorschach Neutral	167	055	-865	-279	-032	-156
CPPD Emotional Loading	110	750	114	211	-095	111
CPPD Distortion	-382	-837	-178	118	019	-058
Motivational Distortion 16PF	635	-135	286	-241	-080	035
Age	234	-786	-050	-189	189	-013