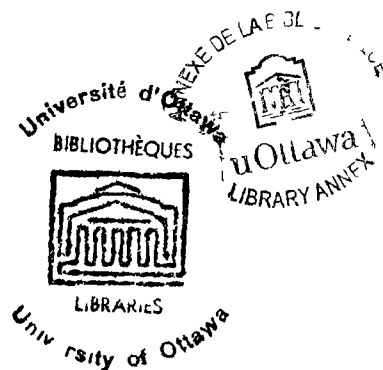


**THE INTERRELATION BETWEEN GUILT AND ANXIETY IN THE
FREUDIAN AND HONNERIAN HYPOTHESES**

by Leo Jeffrey Kells

**Thesis presented to the Faculty of
Psychology of the University of
Ottawa as partial fulfillment of the
requirements for the degree of
Doctor of Philosophy**



Ottawa, Canada, 1968

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CURRICULUM STUDDIORUM

Leo Jeffrey Hollis was born August 4, 1922, in Montreal, P.Q. He received the Bachelor of Arts degree from Laval University, Quebec City, P.Q., in 1942. He obtained the High School Teaching Certificate from the Ontario College of Education in 1947. He received the Master of Psychology degree from the University of Ottawa, Ottawa, Ontario, in 1966. He received a nine month Lilly Fellowship to do research with Dr. O. Hobart Mowrer at the University of Illinois 1965-1966.

ACKNOWLEDGMENTS

This thesis was prepared under the supervision of Professor Lawrence T. Dayhaw, Ph.D., of the Faculty of Psychology of the University of Ottawa.

This writer is also indebted to G. Hobart Mowrer, Ph.D., research professor in psychology at the University of Illinois, for his encouraging interest and invaluable help; to Starke S. Hathaway, Ph.D., Lawrence Sines, Ph.D., the research staff of the University of Minnesota Neurological and Psychiatric Hospital, who made the project a reality by their assistance in acquiring the necessary data; and to Gordon Henley, Ph.D., and his wife who indirectly initiated this research because of their recommended reading program and continuing encouragement.

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INTRODUCTION

Since the beginning of time, mankind has been fascinated by the intriguing relationship existing between guilt and mental health. The great literary records of the past have constantly discussed this problem. Aeschylus, Cicero, Kant, Shakespeare, Dostoevsky--all have tried to analyze the problem of guilt and its consequences. About sixty years ago, Freud developed his theories on guilt, which shocked the Victorian era of morality. Gradually the Freudian theory became so widespread that its influence has infiltrated every aspect of modern civilization.

The Freudian reasoning maintained that neuroses and certain forms of functional psychoses had their origin in the conflicts arising from the over-severity of the superego and the repressed impulses of the id. The ego, which had the role of the executive or regulator, feared that the repressed impulses would break out or return. This caused the chronic state of anxiety and the subsequent defense mechanisms to reduce or allay the anxiety.

Recent literature has suggested that the Freudian position has been seriously questioned. One of the many writers concerned with this problem has been O. Hobart Mowrer. He has set forth an alternative hypothesis regarding the interrelationship between guilt and anxiety in the origin and nature of neurosis. He has maintained that the

neurotic's anxiety comes from past misbehavior about which the individual has real guilt. Mowrer has theorized that the neurotic has committed palpable acts of misconduct for which he feels guilty. The guilt is real and generates the anxiety state.

In research, it is known that no one study provides sufficient proof to establish or reject conclusively a theory. Each research merely increases or decreases probability of its validity. It would appear that the best form of research is an interrelated series of studies. The present study fits into the latter category.

From these Freudian and Mowrerian theories, the following hypotheses are deduced and then put to experimental test:

- a) If the Freudian postulate is valid, then on the Pd (Socialization) scale of the MMPI, the mean Pd scores for groups diagnosed as sociopaths, normals and neurotics should place from low to high socialization in that order. However, if the Mowrerian hypothesis is correct, the order should be sociopaths, neurotics and then normals.
- b) On the Pt (Anxiety) scale, both Freud and Mowrer agree that the neurotic group should have a higher level of anxiety than the sociopathic and normal groups.
- c) According to Freudian theory, it is reasoned that there should be a negative correlation between the Pd and the Pt scales of the MMPI for the neurotic group. However, if the Mowrerian theory is valid, this correlation should be positive.

- d) If the Freudian hypothesis has substance, then a linear regression relationship for sociopaths, normals and neurotics, in that order, should be found on a two-dimensional graph where the abscissa is a socialization scale graphed in reverse order and the ordinate is an anxiety scale.

On the other hand, if the Mowrerian reasoning is valid, there should not be a linear regression relationship; the line should begin with the sociopaths, rise to the neurotics and descend to the normals on this two-dimensional graph.

The proposed research has a most timely and important objective. If the Freudian assumptions are valid, then no major changes are necessary in existing forms of psychotherapy. But if the Mowrerian theory is substantiated, then appropriate revisions are required in our therapeutic procedures and in our concepts of personality theories.

The purpose of this report is to investigate the validity of the Freudian and Mowrerian theories. First, a review of the current literature regarding this problem is made. Then a formulation of the possible hypotheses is followed by a description of the tools and sample. The next step is an analysis of the statistical procedures. The results are then presented and discussed. Finally, the theoretical implications of the report are analyzed in detail.

CHAPTER I

REVIEW OF THE LITERATURE

This first chapter begins with a brief historical development of the two variables involved in the present study, namely, anxiety and socialization. In this review, the theoretical reasoning regarding these variables in relation to the origin and nature of neuroticism from the time of Freud until the present day is set forth.

This is followed by a detailed description of the Freudian and then the Mowrerian theoretical positions with respect to the present investigation. Then related researches are described. Finally the hypotheses relevant to this study are stated.

1. Brief Historical Development of the Problem of Neurosis from Freud till Mowrer.

The problem of the origin and nature of neurosis has centered around anxiety. The most significant insights into this problem have been contributed by psychotherapy. Perhaps the reason for this has been the excellent clinical conditions which have permitted first-hand investigations.

Prior to Freud, anxiety had been discussed in the writings of poets, philosophers, and others. However, it remained for the Master of Vienna to give to anxiety its full clinical significance. In a book which was specifically

written to deal with this problem, Freud has observed that anxiety is the "fundamental phenomenon and the central problem of neurosis."¹

The hypothetical reasoning of Freud regarding anxiety underwent a gradual evolution during his life. In his earlier writings he theorized that when dangerous libidinal impulses are repressed, they are converted into anxiety. Later in his life he advanced a somewhat more complete theory based on his postulations regarding the superego, ego and id. According to this later theory, when the ego perceives a danger, anxiety is aroused, and to avoid this anxiety, the ego brings about the repression of the desires and impulses which would lead the individual into danger. These Freudian theoretical postulations will be treated in more detail later in this chapter.

One of Freud's early associates was Alfred Adler. In his study of neurosis, Adler used the term Inferiority Complex as an indirect substitution for the word anxiety. According to Adlerian reasoning, the child perceives that just about everyone is inferior in some manner to someone else. This can be observed in the different physiological aspects of each individual. This leads the child to feel inferior in relation to the physically and intellectually

¹ Sigmund Freud, The Problem of Anxiety, New York, Norton, 1936, p. 111.

stronger adults around him. To compensate for these feelings of inferiority the child engages in a lifetime struggle for prestige and power. Concerning this situation, Adler has written:

If we trace the history of this aggressive attitude back to childhood we always come upon the outstanding fact that throughout the whole period of development, the child possesses a feeling of inferiority in its relations both to parents and the world at large. Because of the immaturity of his organs, his uncertainty and lack of independence, because of his need for dependence upon stronger natures and his frequent and painful feeling of subordination to others, a sensation of inadequacy develops that betrays itself throughout life.²

It is due to these factors that the child gradually regards conflict as a compensation. The conflict resides mainly between the power strivings of the ego and the need to adapt to social living. For Adler, every neurosis may be regarded as a struggle to liberate oneself from feelings of inferiority in order to bring about feelings of superiority. In this manner, Adler disagreed with Freud's emphasis on the basically sexual and unconscious conflict between the ego and the id.

Another member of the Freudian inner circle was Rank. Rank³ disagreed with some of Freud's basic hypotheses

² Alfred Adler, The Practice and Theory of Individual Psychology, London, Kegan Paul, Trench, Trubner and Co., 1940, p. 13, 14.

³ P. Greenacre, "The Predisposition to Anxiety", Psychoanalytic Quarterly, Vol. 10, No. 2, April 1941, p. 66-94.

concerning anxiety and posited his own theories. He regarded the threat of the infant's loss of security when separated from its mother's womb as the basic source of most of the anxiety experienced in later life. Life may be regarded from this viewpoint as a continuous series of separations. When conflicts arise during life, the neurotic individual is incapable of coping with them because of his weak volition. Thus, Rankian therapy would posit greater emphasis on the responsibility of the patient to solve his own problems in an independent manner.

Jung was also an early associate of Freud who held some contrary opinions on basic issues. His indirect conception of anxiety would appear to be connected with his theory regarding the collective unconscious. It is possible, according to Jungian theory, to infer the existence of the collective unconscious from the obvious traces of mythological images in man's dreams of which the individual himself had no previous knowledge. In this collective unconscious is contained a residue from humanities' ancestors. This has given rise to archetypes which are the psychological counterparts of instincts.⁴ Most people fear the possible contents of the unconscious according to Jung, who has noted:

⁴ Frieda Fordham, An Introduction to Jung's Psychology, Baltimore, Penguin Books, 1964, p. 122.

Beyond all natural shyness, shame, and tact, there is a secret fear of the unknown 'perils of the soul.' Of course one is reluctant to admit such a ridiculous fear. But one should realize that this fear is by no means unjustifiable; on the contrary, it is only too well founded. We are never sure that a new idea will not seize either upon ourselves or upon our neighbours. [...] There is indeed reason enough why man should be afraid of those nonpersonal forces dwelling in the unconscious mind.⁵

In Jungian theory, it is this fear of the non-personal irrational forces or the dominants of the collective unconscious when they break through to the individual's conscious mind which results in anxiety.

Reik was also Freudian orientated in his approach to the origin of neurosis. He advanced the theory that anxiety arises when the individual loses his self-confidence and self-trust.⁶

The biological emphasis of Freudian theory regarding neurosis and his lack of confidence in human nature has been criticized by Horney as too pessimistic. Thus she has noted:

Freud's pessimism as regards neuroses and their treatment arose from the depths of his disbelief in human goodness and human growth. Man, he postulated, is doomed to suffer or to destroy. The instincts which drive him can only be controlled, or at best 'sublimated'. My own belief is that man has the capacity as well as the desire to develop his potentialities and become a decent human being, and that these deteriorate if his relationship to others and hence to himself is, and continues to be, disturbed.⁷

⁵ Carl Gustav Jung, Psychology and Religion, New Haven, Yale University Press, 1938, p. 15.

⁶ Theodor Reik, Masochism in Modern Man, New York, Farrar and Rinehart Inc., 1941, vi-43 p.

⁷ Karen Horney, Our Inner Conflicts, New York, Norton, 1945, p. 17.

Although Horney has stressed the importance of interpersonal experiences and culture, she has identified basic anxiety as the root cause of neurosis. She has postulated that neurotic reactions in later life are the result of hostile childhood reactions towards rejecting parents. The child cannot express his hostility towards the unjust demands of rejecting parental attitudes because of the fear of greater rejection. Therefore this hostility must be repressed and the child must continue to conform to parental standards. Anxiety is generated, which results in a feeling of loneliness and helplessness in a potentially hostile world. The child is compelled to adopt a disproportionate approach towards, against, or away from people.

Interpersonal relationships with the significant persons in our environment are considered important in the nature of anxiety as proposed by Sullivan. Everyone is motivated from the time of birth, and even before birth, to satisfy his biological needs. Through a process of socialization or acculturation, cultural pressures are placed on the person to fulfill his biological needs in a manner that has social approval.

Sullivan has regarded empathy, especially between the mother and child, as the first important means of socialization. He has maintained:

Thus anxiety is called out by emotional disturbances of certain types in the significant person --that is, the person with whom the infant is doing something. A classical instance is disturbance of feeding; but all the performances of the infant are equally vulnerable to being arrested or impeded, in direct chronological and otherwise specific relationship to the emotional disturbance of the significant other person.⁶

Approval or disapproval by significant others in the child's life has threatened his security feelings and leads to anxiety. In summary, the most important concept in Sullivan's postulations regarding anxiety would appear to be his stress on interpersonal relationships.

Historically, it would seem evident that great teachers and educators have profoundly influenced their pupils. Mowrer has gratefully acknowledged his indebtedness to Sullivan in this regard;

In the spring of 1945, I enrolled for two courses at the School, one of which was taught by Dr. Sullivan. To that more or less adventitious event, I am more indebted than I can readily say.

From Sullivan's conceptual framework of neurotic anxiety, Mowrer proceeded to develop his own theoretical position. Since his reasoning is developed in more detail later in this chapter, it is only briefly referred to here. Mowrer has stressed the importance of the family in the

⁶ Harry Stack Sullivan, The Interpersonal Theory of Psychiatry, New York, Norton, 1953, p. 7.

O. Hobart Mowrer, Abnormal Reactions or Actions, Dubuque, Iowa, Brown, 1966, p. 17.

socialization process, especially with respect to superego development. In a short summary of the Freudian and Mowrerian theoretical viewpoints, Coleman has observed:

Instead of a too severe conscience which conflicts with instinctual drives, as Freud emphasized, Mowrer has blamed an immature conscience development based on underlearning. The conscience is strong enough to leave the individual with unresolved guilt and self-devaluation but not strong enough to control his immature, egocentric behavior. To protect himself from the resulting self-devaluation and anxiety, he tries to repress his conscience.¹⁰

The neurotic has fallen prey to his over-extended ego defenses in order to counteract the anxiety and guilt resulting from failure with respect to his social responsibilities.

In conclusion, at the beginning of this century, the brilliant analytical mind of Freud set forth an embryonic conceptualization of neuroticism which gradually germinated until the present day. Other concerned intellectuals have evolutionized his conceptions with the hope of alleviating the scourge of mental illness which has increasingly plagued mankind. Mowrer has been one of those experts, intellectually involved in the pursuit of mental peace and harmony, who has made a contribution against the ravages of mental sickness.

¹⁰ James C. Coleman, Abnormal Psychology and Modern Life, Chicago, Scott Foresman, 1964, p. 237.

2. The Freudian Theoretical Position.

Freud maintained that the total human personality was a composite of three agencies or parts, the id, the ego, and the superego. The id is the reservoir of all the instincts. It is present at birth and knows nothing of reality or morality. It seeks only to satisfy instinctual drives, and it is said to operate according to the pleasure principle. The id obtains this satisfaction of needs through the primary process, which is a mental image of the object desired.

The ego is developed to interact with the real world. Freud has written:

Moreover, the ego has the task of bringing the influence of the external world to bear upon the id and its tendencies, and endeavours to substitute the reality-principle for the pleasure-principle which reigns supreme in the id. In the ego, perception plays the part which in the id devolves upon instinct.¹¹

The ego is the executive. It must perceive, solve problems, and select the proper acts in order to obtain the real goals in the external world. The operations form the secondary process. The relation between the ego and the id has been described by Freud in this manner:

¹¹ Sigmund Freud, The Ego and The Id, London, Hogarth Press, 1935, p. 29-30.

Anxiety is an affective state which can of course be experienced only by the ego. The id cannot be afraid, as the ego can; it is not an organization, and cannot estimate situations of danger. On the contrary, it is of extremely frequent occurrence that processes are initiated or executed in the id which give the ego occasion to develop anxiety; as a matter of fact, the repressions which are probably the earliest are motivated, like the majority of all later ones, by such fear on the part of the ego of this or that process of the id.¹²

The superego is the last agency to appear. It develops from the introjection of parental and societal values. More specifically and typically it is derived from the father or father figure. The father's influence begins in childhood years because the superego is the heir to the Oedipus complex. During the adolescent years it is usually the father who demands standards of good and bad which are more strict than the partiality of maternal acceptance. Societal standards are also introjected into the superego by various socialization agencies such as the courts, schools, and religious teaching. The formation of the superego has been described by Freud in these words:

The superego retains the character of the father, while the more intense the Oedipus complex was and the more rapidly it succumbed to repression (under the influence of discipline, religious teaching, schooling and reading) the more exacting later on is the domination of the superego over the ego--in the form of conscience or perhaps of an unconscious sense of guilt.¹³

¹² Freud, The Problem of Anxiety, p. 106.

¹³ Ibid., p. 45.

The superego includes what is called conscience, and Freud discussed it thus:

Conscience is a function we ascribe, among others, to the superego; it consists of watching over and judging the actions and intentions of the ego, exercising the function of a censor. The sense of guilt, the severity of the superego, is therefore the same thing as rigour of conscience, [...] It [conscience], is the direct expression of the dread of external authority.¹⁴

Freud¹⁵ recognized three types of anxiety which influence the behavior of an individual. These types are reality or objective anxiety, neurotic anxiety and moral anxiety. In reality anxiety, the source of the danger lies in the real world. In neurotic anxiety, the threat resides in the fear of what the instincts of the id will cause the person to do and the consequences of this action. The individual fears that the ego will lose control of the repressed instinctual drives and be overwhelmed by these instincts to commit some act or think some thought which will prove harmful. In moral anxiety, the source of the threat is the conscience of the superego system. The individual experiencing guilt or shame fears being punished by the conscience for doing or thinking something which is contrary to the standards of the ego ideal.

¹⁴ Sigmund Freud, Civilization and Its Discontents, London, Hogarth Press, 1930, p. 127.

¹⁵ -----, The Problem of Anxiety, 165 p.

In other words, the three types of anxiety which the ego can experience are fear of the external world, fear of the id, and fear of the superego. The sole function of anxiety is to act as a danger signal to the ego, so that when the signal appears in the consciousness, the ego may bring into play measures to eliminate the danger. When anxiety is aroused it moves the individual to do something. He can run from the dangerous situation, repress the threatening impulse, or obey the voice of conscience.

The development of personality is determined in large measure by the kinds of adaptation and defense mechanisms which are formed in the ego to deal with neurotic and moral anxiety. Freud¹⁶ maintained that the adult neurotic has unreasonably high standards of morality. From early childhood, as a result of punishment and social disapproval, he has learned that certain ideas are evil and certain urges must not be expressed. Therefore, the adult neurotic may be considered to be over-socialized in the sense that he had learned to repress socially dangerous impulses and thoughts to a much greater degree than normal people.

Freud explained this over-socialization of the adult neurotic in these words:

¹⁶ Freud, Civilization and Its Discontents, 144 p.

The function of the education of children is to inhibit, forbid and suppress, and it has at all times carried out this function to admiration. But we have learnt from analysis that it is this very suppression of instincts that involves the danger of neurotic illness.¹⁷

A comprehensive survey of psychoanalytic literature manifests the Freudian emphasis. Freud has insisted that adult neurotics repress the majority of id impulses, and they waste an unusually unhealthy supply of psychic energy inhibiting fantasy derivatives of the id. Even Fenichel,¹⁸ in recognizing that guilt feelings can be repressed, emphasized that defense mechanisms are usually employed to fight against instincts.

The goals of psychoanalytic procedure involve the relaxation of the superego censorship, the strengthening of the ego and the uncovering of repressed material. Freud put it in these words:

In dealing with this resistance (arising from a sense of guilt) we are obliged to restrict ourselves to making it conscious and attempting the gradual demolition of the hostile superego.¹⁹

Freud²⁰ was not interested in the real guilt which the individual felt after having committed some crime. He

¹⁷ Sigmund Freud, New Introductory Lectures on Psychoanalysis, New York, Norton, 1933, p. 203-204.

¹⁸ O. Fenichel, The Psychoanalytic Theory of Neurosis, New York, Norton, 1945, x-703 p.

¹⁹ Sigmund Freud, An Outline of Psychoanalysis, New York, Norton, 1949, p. 75.

²⁰ -----, Civilization and Its Discontents, p. 119.

referred to these emotions as "remorse". He wrote that everyone knows that an individual can feel upset after he has done wrong. But the important discovery of psychoanalysis was that people can feel guilty when they actually had done nothing wrong. Freud thought it was this kind of guilt that was responsible for the production of neurotic symptoms.

For the purpose of the present study, it is evident that Freud regarded the adult neurotic as over-socialized, however indirectly he stated this and whatever else he may have said. His classical statement was:

[...] to represent the sense of guilt as the most important problem in the evolution of culture, and to convey that the price of progress in civilization is paid in forfeiting happiness through the heightening of the sense of guilt.²¹

3. The Mowrerian Theoretical Position.

A valuable contribution to anxiety theory in academic and experimental psychology has been made by Mowrer. Starting with his early stimulus-response formulations on anxiety, he gradually evolved his present guilt and ethical theory of anxiety. Mowrer²² has proposed that anxiety arises as a consequence of acts which a person has committed but wishes that he had not. The resulting feelings of emotional distress

²¹ Ibid., p. 123.

²² O. H. Mowrer, Learning Theory and Personality Dynamics, New York, Ronald, 1950, xviii-776 p.

are real feelings of guilt which come from the neurotic's misdeeds and the fear that his wrong-doings will be disclosed. As pointed out above, to describe his situation, Freud preferred the word "remorse" rather than guilt, but he ascribed little importance to it. Mowrer believed that the neurotic has acted out socially unacceptable impulses and the resulting anxiety is real guilt, the consequence of his palpable misbehavior. The neurotic has not admitted nor atoned for his guilt. Therefore, according to Mowrer, his conscience has been repressed, not the instincts.

Mowrer clearly stated his position in these words:

[...] anxiety comes, not from acts which the individual would commit but dares not, but from acts he has committed but wishes that he had not. It is, in other words, a 'guilt theory' of anxiety rather than an 'impulse theory'.²³

In a recent article, Mowrer²⁴ pointed out a most serious paradox in the classical psychoanalytic theory. He claimed that the most universal and characteristic trait of psychoneurotic people is their tendency to withdraw from contact with other people and society. This tendency may be extensive, as in regressed "schizophrenics" or restricted, as in certain marital or parent-child personality problems.

23 Ibid., p. 537.

24 O.H. Mowrer, "Conscience and Unconscious", an address given at the annual meeting of the British Psychological Society, Swansea, April 1, 1966, p. 38.

The tendency to withdraw seems to be always there and significant. The difference is only a matter of degree.

Mowrer stated this paradox thus:

If Freud had been correct in his assumption that the neurotic is a person with an unusually strong and powerful superego, such a person, being dominated by this part of the total personality, should be unusually well integrated socially. Since the superego, by Freud's own definition, is 'the internalized voice of the community' [Freud, 1930], anyone in whom this agency is exceptionally well developed and powerful ought to be bound to other people and community life in general in a very intimate and effective way.²⁵

Mowrer suggested that empirical and "clinical" facts showed that this was not so. He said that the hallmark of psychopathology was social alienation, not social integration. He concluded that the neurotic characteristically attempts to avoid his conscience and community. Mowrer believed that the neurotic is behaviorally under-socialized not over-socialized.

4. Relevant Empirical Investigations.

There have been relatively few empirical studies conducted to resolve the problem whether the neurotic is over-socialized as Freud maintained or under-socialized as Mowrer has hypothesized. The little evidence gathered thus far tends to favor the Mowrerian theory.

²⁵ Ibid., p. 4.

Becker²⁶ has found in a study of M.E.I profiles of a group of depressed individuals that scores on the psychopathic deviate scale for this group were surprisingly high despite the fact that recent literature has portrayed them as socially quite conforming.

Digman in a factor-analytic study has reported:

While some of these relationships are not surprising (e.g., the correlation between Ascendence and Social Confidence), others are. I must confess to my surprise when I first found a substantial negative correlation between compliance (neat, tidy, orderly, careful, etc.) and Neuroticism. This is quite contrary to what most clinical people believe to be the case, because Freud (1930) held that socialization is the cause of neuroticism. Mowrer (1961) is convinced that this interpretation is seriously in error, and the data I have clearly support Mowrer's position.²⁷

Recent factor-analytic studies have tended to stress the importance of the two factors used in this investigation. Peterson²⁸ has reduced verbal descriptions of personality to two factors and the two factors were reduced to two ratings. He related one of these to perceived adjustment, and the other to introversion-extroversion. Black²⁹ has found that

²⁶ J. Becker, "Achievement Related Characteristics of Manic Depressives", Journal of Abnormal and Social Psychology, Vol. 60, No. 3, May 1960, p. 334-339.

²⁷ J.M. Digman, "A Factor Analytic Model for Child Psychology", University of Hawaii, Honolulu, Hawaii, 1964, (to be published), 31 p.

²⁸ Donald H. Peterson, "Scope and Generality of Verbally Defined Factors", Psychological Review, Vol. 72, No. 1, January 1965, p. 48-59.

²⁹ M.S. Black, The Development of Personality Factors in Children and Adolescents, unpublished doctoral thesis presented to the University of Illinois, Urbana, Ill, 1964, p. 47.

88.45% of all the communality of variance was contributed by two factors. One factor contributed 61.00% and the other 27.36%. In a critical review of this factor problem, Mowrer³⁰ has arrived at the conclusion that the most important personality factor is socialization or character, which is the independent variable, and the dependent variable he has identified as anxiety or neuroticism. These two factors, as identified by Mowrer, are employed in this study.

Swenson compared the case histories of twenty-five women seeking psychotherapy with the case histories of twenty-five matched controls. His results demonstrated that emotional disturbance was negatively associated with affiliative trends and positively associated with deviant sexual behavior. He summarized his study thus:

It was found that the group needing psychotherapy had engaged in significantly less social activity but had had more extensive sexual experience than the control group.³¹

This study supported the Mowrerian theory that neurosis is the result of actual misconduct rather than mere wishes.

³⁰ O. Hobart Mowrer, "Cumulative Evidence Concerning the Nature of Psychopathology", University of Illinois, Urbana, Ill., 1966, (to be published), p. 28.

³¹ C.H. Swenson, "Sexual Behavior and Psychopathology, a Test of Mowrer's Hypothesis", University of Tennessee, 1962, (to be published), 34 p.

The purpose of the present research is to investigate further this issue. Mowrer has summarized the importance of this investigation in these words:

Fr. John J. O'Connor and Fr. Leo J. Rollis, of the University of Ottawa, Canada, have recently undertaken research specifically designed to bear upon the issues discussed in this paper, with large sample groups; but findings have not yet been announced. If their findings are congruent with the various other research outcomes here discussed, one can conclude with near finality that the Freudian conception of psychopathology is invalid and that the alternative hypothesis warrants our confident acceptance.³²

The present investigation has been an out-growth of the antithesis existing between the Freudian theory and the Mowrerian hypothesis. More specifically, if the Freudian suppositions are valid, then the neurotic is over-socialized; if the Mowrerian theory is established, then the neurotic is under-socialized.

The present research studies the relationship between anxiety and socialization. The variables involved were anxiety, which was operationally defined in terms of scores on the Psychasthenic scale of the Minnesota Multiphasic Personality Inventory (MMPI), and socialization, which was operationally defined in terms of scores on the Psychopathic Deviate scale of the same test.

³² Mowrer, "Cumulative Evidence Concerning the Nature of Psychopathology", p. 22.

The sociopaths and neurotics described in the study are defined according to the nosology of the American Psychiatric Association.³³

5. General Hypotheses.

1. a) If Freud's concept is valid, then on the Pd scale of the MMPI, the mean scores for groups, diagnosed as sociopaths, normals and neurotics would place from low to high socialization in that order.
b) On the contrary, if Mowrer's concept seems more acceptable, then the order should be sociopaths, neurotics and then normals.
2. If Freud's and Mowrer's concepts are valid, then the neurotic group should have a significantly higher level of anxiety than the sociopathic and normal groups.
3. a) If Freud's concept is valid, there should be a negative correlation between the Pd and Pt scales of the MMPI for the group diagnosed as neurotic.
b) On the contrary, if Mowrer's concept seems more acceptable, this correlation should be positive.
4. a) If Freud's concept is valid, then on a two-dimensional graph, where the abscissa is a socialization scale, graphed in reverse order, and the ordinate is an anxiety scale, a linear regression relationship for sociopaths, normals and neurotics, in that order, should be obtained.
b) On the contrary, if Mowrer's concept seems more acceptable, then there should not be a linear regression relationship but the line should start with the sociopaths, go up to the neurotics and go down to the normals, in that order, on this two-dimensional graph.

³³ The Committee on Nomenclature and Statistics of the American Psychiatric Association, Mental Disorders, Washington, American Psychiatric Association, 1965, 139 p.

The following chapter will be a logical presentation of those materials and methods used to test these hypotheses.

CHAPTER II

EXPERIMENTAL DESIGN

The problem with which this research is concerned, as stated in the previous chapter, is the relationship between anxiety and socialization, with three groups, sociopaths, neurotics and normals.

This chapter begins with a description of the sample. Secondly, it contains a description of the tools used. The specific experimental hypotheses are enumerated and the statistical procedures used to test them complete this chapter.

1. The Sample.

Since this research was an investigation into the scores obtained by sociopaths, neurotics and normals on the Psychopathic Deviate scale and the Psychasthenic scale of the Minnesota Multiphasic Personality Inventory (MMPI), the sample was chosen from the official records of the Mayo Memorial Psychiatric Hospital in Minneapolis. This University of Minnesota research hospital has done extensive testing with this inventory. It is worthy of note in passing, that one of the authors, Starke H. Hathaway, is one of the resident supervisors.

The MMPI protocols of all the patients during a five-year period who had been diagnosed as neurotic or sociopathic were secured. The neurotic and sociopathic groups were chosen on the basis of the final diagnosis of the resident psychiatrist, approved by his supervising staff psychiatrist at the Mayo Memorial Psychiatric Hospital in Minneapolis. This diagnosis was made entirely and independently of the MMPI which was administered separately, so that the MMPI could be used for scientific purposes in this research hospital. Therefore, any danger of contamination was avoided, as neither the resident nor staff psychiatrist used the MMPI nor made any reference to it in their diagnosis. In addition to this, all recorded data and family history were obtained. The ages for the total sample varied between eighteen and fifty years.

The final sample consisted of 126 MMPI protocols for sociopaths, with seventy-six males and fifty females. There were 413 MMPI profiles for the neurotic group, breaking down into 113 males and 300 females.

The difficulty of choosing a normal and well-adjusted group is often more arduous than selecting representatives of a particular type of pathology.¹ The group of normals used in this study is the same as that employed originally

¹ Edward Joseph Shoben, Jr., "Toward a Concept of Normal Personality", American Psychologist, Vol. 12, No. 4, April 1957, p. 183-189.

by the authors of the MMPI. The normals in this case were people who had come to visit relatives at the University of Minnesota Hospital. The only screening criterion used in the selection of this group was that no one who said that he was currently under the care of a physician was retained in the group. The authors concluded that since this group had no psychiatric illness, it would logically follow that psychological standards of normalcy would be inherent in this group.

The normal group produced 600 MMPI protocols consisting of 293 males and 395 females.

Dahlstrom and Walsh² have indicated that the most evident significant variable influencing the MMPI test behavior is the sex of the subject being tested. For this reason, separate T scores for men and women have been furnished, and separate statistical analyses of the male and female groups have been calculated.

From the files and case histories which accompanied the protocols, the socioeconomic status was mostly rural and lower-middle class.

To prevent the use of invalid profiles, a cutting-off score was used on two of the invalidity scales. For the

2 W. Grant Dahlstrom and George Schliager Welsh, An MMPI Handbook, Minneapolis, University of Minnesota Press, 1962, p. 262.

"L" scale, the cut-off point was a T-score of seventy or over; for the "F" scale, it was a T-score of eighty or over.

2. The Tools.

After a brief, general introduction to the MMPI, emphasis will be given to those aspects of it which are used in this research. The Psychopathic Deviate scale and the Psychasthenic scale will then be discussed.

The purpose of the MMPI is to provide an objective evaluation of some of the major personality characteristics that influence personal and social adjustment. Hathaway and McKinley³ have stated that it is a psychometric instrument prepared to include, in a single test, scores on the more important phases of personality. Originally nine scales were devised for clinical use of the test and were named for the abnormal conditions which formed the basis for their construction.

The MMPI⁴ has been widely recognized for its construct validity. Its principal criterion of excellence was the valid prediction of clinical cases against the neuropsychiatric staff diagnosis, rather than the usual statistical measures of reliability and validity.

³ S.R. Hathaway and J.C. McKinley, Minnesota Multi-phasic Personality Inventory Manual, New York, The Psychological Corporation, 1951, p. 5.

⁴ Ibid., p. 6.

Regarding this construct validity, Hathaway and McKinley have written as follows:

As for validity, a high score on a scale has been found to predict positively the corresponding final clinical diagnosis or estimate in more than sixty per cent of new psychiatric admissions. This percentage is derived from differentiation among various kinds of clinic cases, which is considerably more difficult than mere differentiation of abnormal from normal groups. Even in cases in which a high score is not followed by a corresponding diagnosis, the presence of the trait to an abnormal degree in the symptomatic picture will always be noted.⁵

a) This research is concerned with two of the nine scales, namely, the Psychopathic Deviate (Pd) scale and the Psychasthenic (Pt) scale. McKinley and Hathaway⁶ stated that the Pd scale was designed to measure the personality characteristics of the amoral and asocial sub-groups of persons with psychopathic personality disorders, named in this setting psychopathic deviates.

Dahlstrom and Welsh, in their research, described the major characteristics of this personality pattern in these words:

[...] a repeated and flagrant disregard for social customs and mores, an inability to profit from punishing experiences as shown in repeated difficulties of the same kind, and an emotional shallowness in relation to others, particularly in sexual and affectional display.⁷

⁵ Ibid.

⁶ J.C. McKinley and S.R. Hathaway, "The MMPI: V. Hysteria, Hypomania and Psychopathic Deviate", Journal of Applied Psychology, Vol. 28, No. 2, April 1944, p. 153-174.

⁷ Dahlstrom and Welsh, Op. Cit., p. 60.

For this scale, a high score represented low socialization, that is, the subject was under-socialized, and a low score indicated high socialization. The psychopathic deviate has been characterized by a high score on this scale.

To establish the validity of the Pd scale, a great deal of research has been carried on with individuals who have demonstrated psychopathic or character disorder tendencies. Over twenty studies of prisoner groups have consistently turned up a mean profile in which the Psychopathic Deviate (Pd) scale was the highest score.⁸ Panton conducted a study with 2,551 male North Carolina Prison inmates and with 446 female prisoners. The MMPI was duly administered to these prisoners, and in both studies the highest score was on the Psychopathic Deviate scale.⁹

Pothast¹⁰ matched two groups of murderers. There was a "profit" murder group who killed while being involved in armed robberies. The other group was a "passion" murder group who had murdered their wives. Then each group was compared with a group of general prisoners and a group of men who were not prisoners. The MMPI test results showed

⁸ Ibid., p. 328.

⁹ J.H. Panton, "MMPI High-Point Codes on Samples of Male and Female Prison Inmates", quoted in W. Grant Dahistrom and George Schlager Welsh, (Eds.), An MMPI Handbook, Minneapolis University of Minnesota Press, 1962, p. 329.

¹⁰ M.D. Pothast, A Personality Study of Two Types of Murderers, unpublished doctoral thesis presented to the Michigan State University, Ann Arbor, Michigan, 1956, 53 p.

that all the murderers had high scores on the Psychopathic Deviate scale, when contrasted with the groups of non-murderers.

Studies reported by Gill,¹¹ Gallenbeck,¹² Driscoll,¹³ and Gough and Mann¹⁴ have indicated that all the prisoners tested with the MMPI obtained the highest score on the Pd scale.

Levy and Freeman¹⁵ studied the prison histories of violations of prison regulations. They separated their subjects into three groups of institutional or social adjustment. The better adjusted group had no violations of prison regulations nor displayed any antisocial behavior. The poorly

11 I.A. Gill, An Investigation of the Psychological Effects of the First Three Months of Imprisonment on the Personality of the First Offender, unpublished Master's thesis presented to the University of North Carolina, Chapel Hill, N.C., 1952, 73 p.

12 C.G. Gallenbeck, The Effects of Prison Confinement upon the Personality Adjustment of Inmates of Waukesha State Prison, University of Wisconsin, Milwaukee, Wisconsin, 1946, unpublished manuscript, 43 p.

13 P.J. Driscoll, Comparison of Three Measures of Adjustment in a Prison Population, unpublished Master's thesis presented to the University of Wisconsin, Milwaukee, Wisconsin, 1952, 54 p.

14 H.G. Gough and G. Mann, "Changes in MMPI Profiles Occurring in a Military Rehabilitation Program", quoted in W. Grant Dahlstrom and George Schlager Welsh, (Eds.), An MMPI Handbook, Minneapolis, University of Minnesota Press, 1962, p. 331.

15 S. Levy and R.A. Freeman, "Use of the MMPI in Measuring Adjustment of Prisoners", Journal of Social Therapy, Vol. 1, No. 2, 1954, p. 33-39.

adjusted group had a record of serious prison infractions, such as rioting, fighting, possession of weapons. The main separations in social adjustment were obtained on the Pd scale, the degree of social adjustment corresponding closely to the degree of deviation on this scale.

There have been a number of studies conducted with the MMPI on subjects who were diagnosed as alcoholics.

The studies of Hewitt,¹⁶ Rubin,¹⁷ Modlin,¹⁸ Mathias,¹⁹ Hampton,²⁰ Harris and Ives²¹ have demonstrated that diagnosed alcoholics have strong psychopathic tendencies. All these

16 C.C. Hewitt, "A Personality Study of Alcoholic Addiction", quoted in George Schlinger Welsh and W. Grant Dahlstrom, (Eds.), Basic Readings on the MMPI in Psychology and Medicine, University of Minnesota Press, Minneapolis, 1956, p. 419-426.

17 H. Rubin, "The MMPI as a Diagnostic Aid in a Veterans Hospital", Journal of Consulting Psychology, Vol. 12, No. 4, July-August 1948, p. 251-254.

18 Herbert C. Modlin, "A Study of the MMPI in Clinical Practice with Notes on the Cornell Index", American Journal of Psychiatry, Vol. 103, May 1947, p. 758-769.

19 R.E.S. Mathias, An Experimental Investigation of the Personality Structure of Chronic Alcoholics, Alcoholic Anonymous, Neurotic and Normal Groups, unpublished doctoral thesis presented to the University of Buffalo, Buffalo, N.Y., 1955, 76 p.

20 Peter J. Hampton, "A Psychometric Study of Drinkers", Journal of Consulting Psychology, Vol. 15, No. 6, December 1951, p. 301-304.

21 R.E. Harris and Virginia A. Ives, "A Study of the Personality of Alcoholics", American Psychologist, Vol. 2, No. 10, October 1947, p. 405.

reports have revealed that when tested with the MMPI the alcoholics had a higher score on the Pd scale than the control groups.

The research of Spielberger²² with the MMPI has also indicated that individuals with records of sexual promiscuity and lack of sexual inhibition score higher on the Pd scale than normals. Wirt and Briggs²³ reported similar results with their employment of the MMPI. Subjects with a previous history of premarital sexual relations and sexual experience with a large number of women obtained the highest score of their MMPI on the Pd scale.

The literature reviewed above corroborated the research of Welsh and Dahlstrom²⁴ who have maintained that the Pd scale is a powerfully valid instrument for identifying subjects with psychopathic and antisocial trends.

There has been a great deal of research regarding the reliability of the Pd scale. Studies by Windle,²⁵

22 Charles D. Spielberger, "Personality Processes Reflected in the MMPI", American Psychologist, Vol. 12, No. 9, September 1957, p. 574.

23 Robert D. Wirt and Peter F. Briggs, "Personality and Environmental Factors in the Development of Delinquency", Psychological Monograph, Vol. 73, No. 15, Whole No. 485, 1959, p. 1-47.

24 George Schlager Welsh and W. Grant Dahlstrom, Basic Readings on the MMPI in Psychology and Medicine, Minneapolis, University of Minnesota Press, 1956, p. 103.

25 C. Windle, "Further Studies of Test-Retest Effect on Personality Questionnaires", Educational Psychological Measurement, Vol. 15, No. 3, Autumn 1955, p. 246-253.

Cottle,²⁶ and Rosen²⁷ reported a test-retest reliability coefficient of .84, .80, and .88 respectively. Winfield²⁸ studied the internal consistency of the Pd scale and obtained split-half correlation coefficients of .84 and .80. Dahlstrom and Welsh²⁹ have demonstrated that the interrelation of the Pd scale with the other scales of the MMPI is low.

b) The Pt³⁰ scale was designed to help in the assessment of the neurotic pattern of psychasthenia. In addition to the obsessive thoughts and the compulsive behavioral rituals, the personality characteristics also included some forms of abnormal fears, worrying, difficulties in concentrating, guilt feelings and excessive vacillation in making decisions. It also embraced unusually high standards of morality or intellectual performance, self-critical or self-debasing feelings and attitudes. These symptoms are subsumed under the general term anxiety. High anxiety

²⁶ W.C. Cottle, "Card Versus Booklet Forms of the MMPI", Journal of Applied Psychology, Vol. 34, No. 4, August 1950, p. 255-259.

²⁷ Albert Rosen, "Test-Retest Stability of MMPI Scales for a Psychiatric Population", Journal of Consulting Psychology, Vol. 17, No. 3, June 1953, p. 217-221.

²⁸ D.L. Winfield, "An Investigation of the Relationship between Intelligence and the Statistical Reliability of the MMPI", Journal of Clinical Psychology, Vol. 2, No. 8, 1952, p. 146-148.

²⁹ Dahlstrom and Welsh, The MMPI Handbook, p. 82.

³⁰ Ibid., p. 69.

is indicated by a high score on this scale and a low score reveals that the testee is low in anxiety.

There has been extensive research to determine the validity of the Pt scale. Welsh³¹ designed a scale which was a composite of scales 1, 2, 3 and 7 of the MMPI. It was constructed specifically to measure overt anxiety and called the anxiety index (AI). Zimet and Brackbill³² reported a correlation coefficient of .78 between scores on the anxiety index (AI) of Welsh and scores on the Pt scale of the MMPI in a study with eighty-seven medical students.

A manifest anxiety scale (At) was put together by Taylor³³ as a measurement of anxiety. After selecting two hundred MMPI items, Taylor submitted these items to five judges who were required to choose those items which indicated anxiety. The criterion employed to select the item was the agreement of eighty per cent of the judges. The judges produced sixty-five items which were brought down to fifty by the technique of internal consistency. Substantial

³¹ George S. Welsh, "An Anxiety Index and an Internalization Ratio for the MMPI", Journal of Consulting Psychology, Vol. 16, No. 1, February 1952, p. 65-72.

³² Carl N. Zimet and Glen A. Brackbill, "The Role of Anxiety in Psychodiagnosis", Journal of Clinical Psychology, Vol. 12, No. 2, April 1956, p. 173-177.

³³ Janet A. Taylor, "A Personality Scale of Manifest Anxiety", Journal of Abnormal and Social Psychology, Vol. 48, No. 2, April 1953, p. 285-290.

research by Brockway et al.,³⁴ Dana,³⁵ Matarazzo, Guze and Matarazzo,³⁶ and Franks³⁷ has indicated that the Taylor At scale is a reliable instrument for measuring manifest anxiety. This led some researchers to compare the Taylor At scale with the Pt scale of the MMPI.

Brackbill and Little³⁸ conducted a study with two groups of college students and neuropsychiatric patients. They were surprised to discover a correlation of .92 between the At scores and the Pt scores of the psychiatric patients. A repeat of this study with five more groups of patients produced correlation coefficients which were between .91 and .93. Similar evidence was reported by

³⁴ Ann L. Brockway, Goldine Gleser, G. Winokur and G.A. Ulett, "The Use of a Control Population in Neuropsychiatric Research (Psychiatric, Psychological, and EEG Evaluation of a Heterogeneous Sample)", American Journal of Psychiatry, Vol. 111, October 1954, p. 240-262.

³⁵ Richard H. Dana, "Manifest Anxiety, Intelligence, and Psychopathy", Journal of Consulting Psychology, Vol. 21, No. 1, February 1957, p. 38-39.

³⁶ J.D. Matarazzo, S.B. Guze and Ruth G. Matarazzo, "An Approach to the Validity of the Taylor Anxiety Scale: Scores of Medical and Psychiatric Patients", Journal of Abnormal and Social Psychology, Vol. 51, No. 2, September 1955, p. 276-280.

³⁷ C.M. Franks, "L'échelle de Taylor et l'analyse dimensionnelle de l'anxiété", Revue de Psychologie Appliquée, Vol. 6, No. 1, Janvier, 1956, p. 35-44.

³⁸ Glen Brackbill and Kenneth S. Little, "MMPI Correlates of the Taylor Scale of Manifest Anxiety", Journal of Consulting Psychology, Vol. 15, No. 6, December 1954, p. 433-436.

Ends and Page³⁹ in a study with sixty-three alcoholic hospitalized patients. They found a correlation coefficient of .92 between the scores on the Taylor At scale and the Pt scale of the MMPI. In a study with 226 college students, Deese, Lazarus and Keenan⁴⁰ found a correlation coefficient of .61 between the At scale and the Pt scale.

Research has indicated that there is a high correlation between the Taylor At scale and the Pt scale of the MMPI. Dahlstrom and Welsh⁴¹ have concluded that because of the high correlations between the At scale and the Pt scale, there would be minimal value in introducing the Taylor At scale over and above the use of the Pt scale that is included in the usual administration of the MMPI.

Regarding the reliability of the Pt scale of the MMPI, the authors Hathaway and McKinley⁴² reported a test-retest reliability coefficient of .74. Windle⁴³ conducted

³⁹ E.J. Ends and C.W. Page, "Functional Relationships among Measures of Anxiety, Ego Strength, and Adjustment", Journal of Clinical Psychology, Vol. 13, No. 2, April 1957, p. 148-150.

⁴⁰ J.R. Deese, S. Lazarus and J. Keenan, "Anxiety, Anxiety Reduction and Stress in Learning", Journal of Experimental Psychology, Vol. 46, No. 1, July 1953, p. 55-60.

⁴¹ Dahlstrom and Welsh, An MMPI Handbook, p. 294.

⁴² Hathaway and McKinley, MMPI Manual, p. 7.

⁴³ Windle, Op. Cit., p. 246-253.

a study with fifty-five college female students and found a test-retest reliability coefficient of .92. Additional evidence was produced by Cottle⁴⁴ who retested one hundred college students after a one-week interval and discovered a test-retest reliability coefficient of .90.

The internal consistency of the Pt scale was demonstrated by four studies of Winfield⁴⁵ who found four split-half coefficients of .89, .89, .91 and .91. These findings corroborated the reports of the authors of the test, McKinley and Hathaway,⁴⁶ who discovered split-half coefficients of .84 with two hundred adult normals and .89 with one hundred neuropsychiatric inpatients.

c) The Pt scale is correlated to a negligible degree with the Pd scale. The actual intercorrelation between these two scales was calculated by Dahlstrom and Welsh⁴⁷ to be .12. This may be explained by item overlap.

In conclusion, Lingoes in a critical review of the MMPI in the Sixth Mental Measurement Yearbook terminated with these observations:

⁴⁴ Cottle, Op. Cit., p. 255-259.

⁴⁵ Winfield, Op. Cit., p. 146-148.

⁴⁶ J.C. McKinley and S.R. Hathaway, 'A Multiphasic Personality Schedule (Minnesota): IV. Psychasthenia', Journal of Applied Psychology, Vol. 26, No. 5, October 1942, p. 614-624.

⁴⁷ Dahlstrom and Welsh, An MMPI Handbook, p. 32.

The research on the perennial question of the diagnostic validity of this test may be summarized thus. The MMPI can differentiate quite well between those who do and do not have emotional and adjustment problems in a wide variety of settings. Neurotics, character disorders, psychotics and possibly some psychosomatic conditions, as broad diagnostic groupings, can be reliably separated.⁴⁸

3. Specific Experimental Hypotheses.

The description of the sample and the tools have been completed, and the specific experimental hypotheses in relationship to the Freudian and Mowrerian theories are stated in the null form.

1. There are no significant differences between the sociopathic, neurotic, and normal sub-groups of the sample for their mean Pd scale scores on the MMPI.
2. There are no significant differences between the sociopathic, neurotic, and normal sub-groups of the sample for their mean Pt scale scores on the MMPI.
3. There are no significant correlations between the sociopathic, neurotic, and normal sub-groups of the sample for their scores on the Pd and the Pt scales of the MMPI.
4. There is no linear regression relationship for sociopaths, normals, and neurotics in that order on a two-dimensional graph, where the abscissa is the Pd scale of the MMPI, graphed in reverse order, and the ordinate is the Pt scale of the MMPI.

⁴⁸ Oscar Krisen Buros, The Sixth Mental Measurement Yearbook, Highland Park, N.J., The Gryphon Press, 1965, p. 144-145.

Both Freud and Mowrer would expect the first three hypotheses to be rejected. If they are, then the crux of the problem becomes the following statements.

a) For the first hypothesis, the order would be sociopaths, normals, and neurotics according to the Freudian theory, or the order would be sociopaths, neurotics, and normals, according to the Mowrerian theory.

b) Regarding the third hypothesis, Freud would postulate that the significant correlations would be negative; Mowrer would predict that they would be positive.

c) Finally, with respect to the fourth hypothesis, Freud would expect an ascending linear relationship. However, Mowrer would expect the line to start with the sociopaths, go up with the neurotics and then go back down with the normals on this type of Pd and Pt couple entry table.

4. Statistical Procedures.

After making the necessary α -corrections, the raw scores of the Pd scale and the Pt scale were converted into T-scores. This was done by referring all the scores to the standardized T-score scale composed by the authors of the MMPI.

The means and standard deviations were calculated for the sociopathic group from their T-scores on the Pd

scale and the Pt scale. Likewise the means and standard deviations were established for the other two sub-groups, namely, the neurotics and the normals, from their T-scores on the Pd scale and the Pt scale. Individual t tests were applied to the differences in the mean scores between the sociopathic group and the neurotic group on the Pd scale, and to the mean scores between the neurotic group and the normal group, and to the sociopathic group and the normals. Likewise, separate t tests were applied to the mean scores between the sociopathic group and the neurotic group on the Pt scale, and between the neurotic group and the normal group, and to the sociopathic group and the normals. The t tests were employed to find out if the differences were statistically significant.

Recently Cohen⁴⁹ has recommended a formula for the establishment of the amount of difference suggested by the t values. The t tests indicate whether there is a significant difference or not. If there is a significant difference, we can glean further information as to the amount of correlation that this difference denotes by the use of Cohen's formula. This formula is calculated to determine the correlation between the continuous variable

⁴⁹ Jacob Cohen, "Some Statistical Issues in Psychological Research", quoted in Benjamin B. Wolman, (Ed.), Handbook of Clinical Psychology, New York, McGraw-Hill Book Co., 1965, p. 99-121.

and group membership no matter how these groups were formed. For this reason, it has been employed in the present study.

A Pearson product moment correlation coefficient " r "⁵⁰ was computed between the T-scores of the Pd scale and of the Pt scale in the sociopathic group. The identical procedure was used to calculate a Pearson " r " correlation coefficient for the other two sub-groups, namely, the neurotics and the normals.

Fisher's t formula⁵¹ was applied to these three Pearson " r " correlation coefficients individually to see if these correlations were significant.

In the next chapter the findings of these statistical procedures relevant to the specific experimental hypotheses will be presented and discussed.

⁵⁰ J. F. Guilford, Fundamental Statistics in Psychology and Education, New York, Mc-Graw-Hill, 1956, p. 140.

⁵¹ Ibid., p. 219.

CHAPTER III

PRESENTATION AND DISCUSSION OF RESULTS

Now that the problem has been circumscribed by testable hypotheses and the methods described which were employed to test them, the present chapter will set forth and discuss the results of these procedures.

First, the objections and difficulties regarding the employment of self-rating questionnaires in a scientific study are considered and possible solutions are suggested in the light of modern research. While these preliminary considerations are not of direct concern to the main hypotheses, nevertheless they are necessary insofar as this report depends indirectly on their basic assumptions.

Following the presentation of the prefatory considerations, the differences between the three sub-groups of the sample regarding their mean scores on the Pd scale are presented and discussed. Next, the differences between the sociopaths, the neurotics, and the normals regarding their mean scores on the Pt scale are delineated and considered. Finally, the correlations between the scores on the Pd scale and the Pt scale for the sociopathic, the neurotic, and the normal sub-groups of the sample are set forth and examined. The results of these statistical findings are investigated in the light of the Freudian and

Freudian theoretical implications. In conclusion, the relevance of further investigation along these dimensions is suggested.

1. Prefatory Considerations.

Two of the most commonly voiced objections to the use of the MMPI are concerned with its interpretation. The theory has been widely advanced that two response sets are present in its interpretation rather than the content. These two response sets have been given various names, but are frequently referred to as "acquiescence" and "social desirability". The response set of acquiescence has reference to the tendency of the testee to say "yes" no matter what is contained in the content of the item. The response set of social desirability is often understood as the inclination of the testee to give responses that are socially desirable. This is done whether the socially desirable response is true or false.

These two response sets have been looked upon as necessary and sufficient for understanding the responses obtained on the MMPI. There has been a growing number of reports in the literature supporting the hypothesis of the response sets. The literature would suggest that response styles are really a step forward in the

understanding of the factors measured by personality inventories. Recently a controversy has arisen regarding the primacy of the two response sets.^{1,2,3}

Block⁴ has offered clear evidence that acquiescence as moderated by social desirability does not play a dominant role in MMPI and other personality inventories. He has argued that the MMPI is not as innocent of psychological meaning as response set advocates have suggested. As corollaries to his hypothesis, Block has offered what appears to be conclusive evidence that the acquiescence response set is not a significant component underlying the MMPI. He has further maintained that the social desirability interpretation has gained its advocates for gratuitous and peripheral reasons.

Block performed a factor-analysis of five different and separate samples. From this, he concluded that the two factors, commonly attributed to response sets, continue to

1 G.G. Kassebaum, A.S. Couch, and P.K. Slater, "The Factorial Dimensions of the MMPI", Journal of Consulting Psychology, Vol. 23, No. 3, June 1959, p. 226-236.

2 A.L. Edwards and Louise B. Heathers, "The First Factor of the MMPI: Social Desirability or Ego-Strength", Journal of Consulting Psychology, Vol. 26, No. 1, February 1962, p. 99-100.

3 S. Messick and D.H. Jackson, "Acquiescence and the Factorial Interpretation of the MMPI", Psychological Bulletin, Vol. 56, No. 4, July 1961, p. 299-304.

4 Jack Block, The Challenge of Response Sets, New York, Appleton-Century-Crofts, 1965, vi-142 p.

exist in identical form even though the acquiescence component is entirely eliminated from the MMPI scales. Thus, acquiescence was removed as one of the determinants of the testee's behavior.

Regarding the social desirability set, Block has concluded after prolonged research that the empirical findings regarding social desirability are based on faulty and ambiguous operational definitions and that social desirability has been confounded in various ways with dimensions of character.

Finally, Block asserted that the great contribution of the MMPI and related personality inventories has been the employment of external criteria as the initial basis and final goal of scale validity. He concluded that the MMPI has measured up well against the challenge of response sets.

2. Anxiety versus Socialization for the Female Groups.

a) Differences in Mean Performance on the Pd Scale for the Female Groups.- The means, standard deviations, t tests and point-biserial correlations between the scores of the females on the Pd scale of the MMPI for the fifty sociopaths, for the three hundred neurotics and for the 395 normals are presented in Table I. The means for sociopaths,

Table I.-

Means, Standard Deviations, t Tests and Point-Biserial Correlations between the Female Scores on the Pd Scale of the SMI for Sociopaths, Neurotics and Normals.

Female Groups	N	Mean	Standard Deviation	Groups Compared	t Test	Point-Biserial Correlation*
Sociopaths	50	76.02	11.55	So. vs Neu.	4.06 ^a	.25
Neurotics	300	69.07	14.21	Neu. vs Nor.	20.92 ^a	.62
Normals	395	49.99	9.67	Nor. vs So.	16.76 ^a	.62

^a Significant at the .001 level of confidence.

* Cohen's point-biserial correlation formula: $r_{pb} = \sqrt{\frac{t^2}{t^2 + df}}$

neurotics and normals on the Pd (Socialization) scale were 78.52, 69.07, and 49.59 respectively. The differences between these three means were determined to be statistically significant at the $p = .001$ level of confidence. Thus, in relationship to the female groups, the first null hypothesis must be rejected, namely, there are no significant differences between the sociopaths, neurotics and normals with respect to their mean scores on the Pd scale.

The neurotic group had the highest standard deviation, the normal group the lowest, with the sociopathic group in between.

The point-biserial correlations were calculated from the results of the t tests. When the sociopathic group was compared with the neurotic group, a point-biserial correlation of $r_{pb} = .25$ was computed. The identical $r_{pb} = .62$ was obtained for the neurotic group versus the normal group and for the normal group versus the sociopathic group. There is a possibility that the differences in the means found among the three groups may have resulted from the fact that they are differentially related to socialization as measured by the Pd scale. This differential relationship is reflected in the three point-biserial correlations reported.

If the Freudian hypothesis of the neurotic's over-socialization had been correct, then the expected order would have been sociopaths, normals, and neurotics. Such was not the case. The results obtained have added probability to Mowrer's⁵ hypothesis that the neurotic is under-socialized and falls between the sociopaths and normals on a socialization scale. This finding is in conformity with relevant research regarding this problem.^{6,7,8}

b) Differences in Mean Performance on the Pt Scale for the Female Groups.- Table II contains the means, standard deviations, t tests and point-biserial correlations between the scores of the females on the Pt scale of the MMPI for the fifty sociopaths, for the three hundred neurotics, and for the 395 normals. The mean scores of the sub-groups were sociopaths 66.84, neurotics 70.46, and normals 50.93. A significant difference between neurotics and normals and between normals and sociopaths

5 G. Hobart Mowrer, The New Group Therapy, Princeton, New Jersey, D. Van Nostrand, 1964, p. 109-191.

6. Donald R. Peterson, The Insecure Child, Over-Socialized or Under-Socialized, University of Illinois, Urbana, Ill., 1962, (to be published), 27 p.

7 Regina G. O'Daniel, The Disturbed Adolescent: Over-Socialized or Under-Socialized?, unpublished Master's thesis presented to the University of Louisville, Louisville, Kentucky, 1965, p. 15.

8 W. McCord and Joan McCord, Psychopathology and Delinquency, New York, Grune and Stratton, 1958, p. 137.

Table II.-
Means, Standard Deviations, t Tests and Point-Biserial Correlations between the Female Scores on the Pt Scale of the MFI for Sociopaths, Neurotics and Normals.

Female Groups	N	Mean	Standard Deviation	Groups Compared	t Test	Point-Biserial Correlation*
Sociopaths	50	66.64	10.71	So. vs. Neu.	2.07 ^a	.11
Neurotics	300	70.64	14.74	Neu. vs. Nor.	19.93 ^b	.66
Normals	395	56.93	9.83	Nor. vs. So.	7.85 ^b	.42

a Significant at .05 level of confidence.
 b Significant at .001 level of confidence.
 * Cohen's point-biserial correlation formula: $r_{pb} = \frac{t}{\sqrt{t^2 + df}}$

was obtained at the $p = .001$ level of confidence. At the $p = .05$ level of confidence, a significant difference was found between sociopaths and neurotics.

Consequently, regarding the female groups, the second null hypothesis must be rejected, namely, that there are no significant differences between the sociopaths, neurotics and normals with respect to their mean scores on the Pt scale.

The neurotic group had the highest standard deviation, the normal group the lowest, with the sociopathic group in between.

The results of the t tests were used again to work out the point-biserial correlations. An $r_{pb} = .11$ was obtained when the sociopathic group was compared with the neurotic group. For the neurotic group versus the normal group, an $r_{pb} = .60$ was calculated, and an $r_{pb} = .42$ for the normal group versus the sociopathic group was computed. The differential relationship to anxiety as measured by the Pt scale may be due to the differences in the means of the three groups which have been reported. The three point-biserial correlations recorded have pointed up this differential relationship.

The results obtained in this study have shown that the neurotics have more anxiety than the sociopaths or normals. One of the most unexpected findings of this

present investigation was the high level of anxiety found in the sociopathic group as compared with the normals, which was significant at the $p = .001$ level of confidence. The literature has constantly maintained that the sociopath manifests little anxiety. However, recently there would appear to be a few theorists who claim that the sociopaths have more anxiety than previously expected. Thus, Greenwald has observed:

One of the descriptions you will read again and again, which I often find to be dubious, is that psychopaths are usually free of anxiety. To me, the anxiety is obvious. My experience is that psychopaths will not admit to anxiety. However, if you know them well enough and if a workable relationship is established in therapy, then anxiety becomes quite clear, despite their many ways of acting-out in dealing with the avoidance of anxiety.⁹

There has been no disagreement between Freud and Mowrer¹⁰ as to how the three main character types should be aligned as regards anxiety. The neurotic should have more anxiety than either the sociopath or the normal. Thus, the findings of this aspect of the study are in harmony with the theoretical reasoning of Freud and Mowrer.

⁹ Harold Greenwald, "Treatment of the Psychopath", Voices - The Art and Science of Psychotherapy, Spring 1967, p. 53.

¹⁰ O. Robert Mowrer, Cumulative Evidence Concerning the Nature of Psychopathology, University of Illinois, Urbana, Ill., 1966, (to be published), p. 13-14.

e) Comparison of Obtained Correlations for the Females.- The Pearson correlation coefficients between the scores on the Pd scale (Socialisation scale) and the Pt scale (Anxiety scale) of the MMPI are presented in Table III. It is to be noted that the Pd scale is an inverted scale, that is, the higher the score, the lower the socialization. A Pearson correlation coefficient of .37 was found between the scores of the female sociopaths on the Pd and Pt scales. This was significant at the $p = .01$ level of confidence. For the neurotic and normal groups, Pearson correlation coefficients of .56 and .43 respectively were calculated. These were significant at the $p = .001$ level of confidence. For this reason, regarding the female groups, the third null hypothesis must be rejected, namely, there are no significant correlations between the sociopathic, neurotic and normal sub-groups of the sample for their scores on the Pd and the Pt scales of the MMPI.

According to the Freudian theory, it is reasoned that there should be a negative correlation between the Pd and Pt scales of the MMPI for the neurotic group. However, if the Mowrerian theory is valid, this correlation should be positive. The present findings would add probability to the Mowrerian position because of the positive correlations.

Table III.-

Correlation Coefficients between the Female Scores of the P6 Scale and the P1 Scale of the MMPI for Sociopaths, Neurotics and Normals.

Female Groups	N	Pearson r Coefficients	t Test Significance of the "r"
Sociopaths	50	.37	2.74 ^a
Neurotics	300	.56	11.63 ^b
Normals	395	.43	9.47 ^b

a Significant at the .01 level of confidence.

b Significant at the .001 level of confidence.

c) Order and Linearity on a Two-Dimensional Graph.- When the means of the three groups on the Pd scale and the means of the three groups on the Pt scale are plotted on a two-dimensional graph, there is no linear regression relationship for sociopaths, normals and neurotics in that order. This has been graphically illustrated in Figure 1. Consequently, the fourth null hypothesis must be accepted, namely, there is no linear regression relationship for sociopaths, normals and neurotics in that order on a two-dimensional graph, where the abscissa is the Pd scale of the MMPI, graphed in reverse order, and the ordinate is the Pt scale of the MMPI.

Freud would have expected an ascending linear relationship in this order, sociopaths, normals and neurotics. However, Howrer would have anticipated that the line would start with the sociopaths, ascend to the neurotics and descend to the normals on the two-dimensional graph. The findings of this study support Howrer.

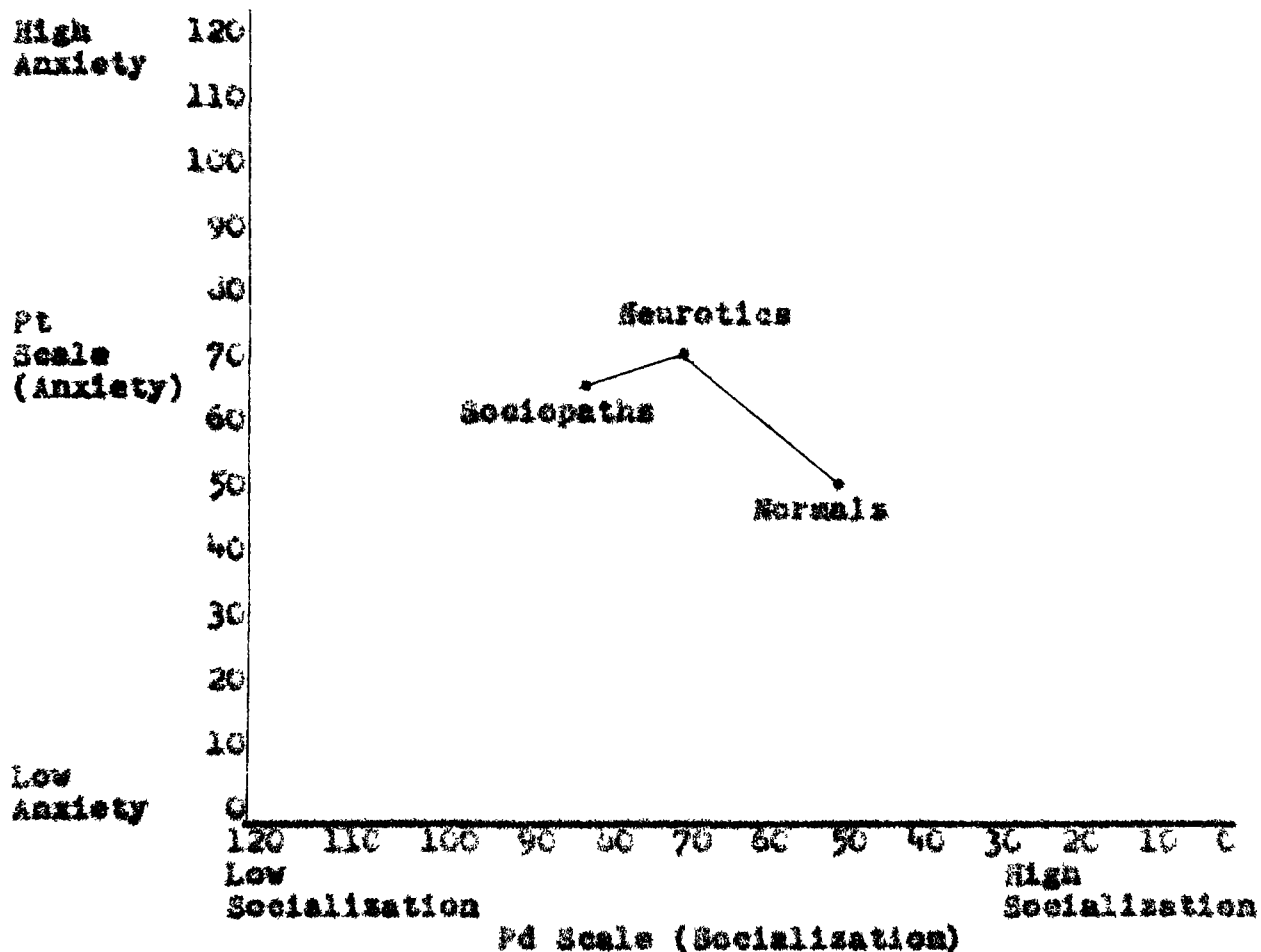


Figure 1.- Graph for the Female Sociopaths, Neurotics, and Normals for their Mean Scores on the Pd and Pt Scales of the MMPI.

3. Anxiety versus Socialization for the Male Groups.

a) Differences in Mean Performance on the Pd Scale for the Male Groups.- The normal group consisted of 293 men, the neurotic group 113, and the sociopathic group seventy-six men. The means, standard deviations, t tests and point-biserial correlations between the scores of the males on the Pd scale of the MMPI for the sociopaths, the neurotics and the normals are set forth in Table IV. The mean scores of the sub-groups were sociopaths 76.14, neurotics 67.37, and normals 50.12. When the three groups were compared, a significant difference at the $p = .001$ level of confidence was obtained. Consequently, for the male groups, the first hypothesis must be rejected, namely, there are no significant differences between the sociopaths, neurotics and normals with respect to their mean scores on the Pd scale.

Again, the neurotic group produced the highest standard deviation, the normal group the lowest, with the sociopathic group in between.

A point-biserial correlation of $r_{pb} = .31$ was calculated when the sociopathic group was compared with the neurotic group. The neurotic group versus the normal group produced an $r_{pb} = .54$. When the normals were contrasted with the sociopaths, an $r_{pb} = .60$ was obtained.

Table IV.-
 Means, Standard Deviations, t Tests and Point-Biserial Correlations between
 the Male Scores on the Pd Scale of the MMPI for Sociopaths,
 Neurotics and Normals.

Male Groups	N	Mean	Standard Deviation	Groups Compared	t Test	Point- Biserial Correlation*
Sociopaths	76	76.14	11.55	So. vs Neu.	4.46 ^a	.31
Neurotics	113	67.69	13.13	Neu. vs Nor.	13.06 ^a	.54
Normals	293	50.12	9.64	Nor. vs So.	17.50 ^a	.63

^a Significant at the .001 level of confidence.
 * Cohen's point-biserial correlation formula: $r_{pb} = \sqrt{\frac{t^2}{t^2 + df}}$

what has been stated previously regarding the point-biserial correlations may also be applied here.

If the Freudian postulation of the neurotic's over-socialization had been valid, then the anticipated rank order would have been sociopaths, normals and neurotics. However, the male results of this investigation have not supported this alignment. On the contrary, the present findings add further probability to the Mowrerian position that the neurotic is under-socialized and falls between the sociopaths and normals on a socialization scale, the Pd scale, of the MMPI which is an inverse scale.

b) Differences in Mean Performance on the Pt Scale for the Male Groups.- Table V includes the means, standard deviations, t tests and point-biserial correlations between the male scores on the Pt scale of the MMPI for the sociopaths, neurotics and normals. The sociopaths had a mean score of 69.32, the neurotics 73.30, and normals 50.39. A significant difference between normals and neurotics, and between normals and sociopaths was computed at the $p = .001$ level of confidence.

Therefore with respect to the male groups, part of the second null hypothesis must be rejected since significant differences were found between both the

Table V.-

Means, Standard Deviations, t Tests and Point-Biserial Correlations between the Male Scores on the Pt Scale of the MMPI for Sociopaths, Neurotics and Normals.

Male Groups	N	Mean	Standard Deviation	Groups Compared	t Test	Point-Biserial Correlation*
Sociopaths	76	69.32	14.10	So. vs Neu.	1.79	.13
Neurotics	113	73.30	15.08	Neu. vs Nor.	14.34 ^a	.58
Normals	293	50.39	9.59	Nor. vs So.	11.03 ^a	.50

^a Significant at .001 level of confidence.

* Cohen's point-biserial correlation formula:

$$r_{pb} = \sqrt{\frac{t^2}{t^2 + df}}$$

sociopaths and the neurotics in comparison to the normals with respect to their mean scores on the A_1 scale.

Since a significant difference was not computed between sociopaths and neurotics, this part of the null hypothesis must be accepted. However, the results obtained were close to being significant at the $p = .05$ level of confidence. It would appear possible that with a different sample, a significant difference would be found.

The neurotic group had the highest standard deviation, the sociopathic group only slightly less, and the normal group the lowest standard deviation.

When the sociopathic group was compared with the neurotic group, a point-biserial correlation $r_{pb} = .13$ was obtained. For the neurotic group versus the normal group, an $r_{pb} = .5$ was computed, and $r_{pb} = .50$ for the normals versus the sociopaths was worked out. The same remarks as previously expressed regarding these point-biserial correlations are applicable here.

The results of this study have indicated that the neurotics have more anxiety than the sociopaths or normals. One of the unexpected findings of this present investigation was again the high level of anxiety found in the sociopathic group as compared with the normals, which was significant at the $p = .01$ level of confidence. Once

again as previously stated, the literature has generally favored the hypothesis that the sociopaths manifest a low level of anxiety. This study both for females and males has added more probability to the more recent theory that the sociopath does have more anxiety than previously suspected. The mean for the male sociopaths on the Pt scale was 69.32.

According to both Freud and Mowrer, the neurotic should reveal more anxiety than the sociopath or normal. The present investigation has supported their positions.

c) Comparison of Obtained Correlations for the Males.- Table VI presents the Pearson correlation coefficients between the scores on the Pd scale (Socialization scale) and the Pt scale (Anxiety scale) of the MI.

It must be remembered that the Pd scale is an inverted scale, that is, the higher the score the lower the socialization. A Pearson correlation coefficient of .56 was computed between the scores of the male sociopaths on the Pd and Pt scales. This was significant at the $p = .001$ level of confidence. Pearson correlations of .62 and .33 were calculated for the neurotic and normal groups respectively. These were significant at the $p = .001$ level of confidence. For this reason, in relation to the male groups, the third null hypothesis

Table VI.-

Correlation Coefficients between the Male Scores of the Pd Scale and the Pt Scale of the MMPI for Sociopaths, Neurotics and Normals.

Male Groups	N	Pearson r Coefficients	t Test Significance of the "r"
Sociopaths	76	.56	5.80 ^a
Neurotics	113	.02	0.30 ^a
Normals	293	.33	5.96 ^a

^a Significant at the .001 level of confidence.

must be rejected, namely, there are no significant correlations between the sociopathic, neurotic and normal sub-groups of the sample for their scores on the Pd and the Pt scales of the MMPI.

According to the Freudian position, indices of socialization should correlate negatively with indices of anxiety. On the other hand, Mowrer has maintained that there should be a positive correlation between measures of socialization and measures of anxiety. Again, the present findings would add further probability to the Mowrerian theory because of the positive correlations.

d) Order and Linearity on a Two-Dimensional Graph.- In Figure 2 are illustrated graphically the results obtained when the means of the three groups on the Pd scale and the means of the three groups on the Pt scale are plotted on a two-dimensional graph. Thus, the fourth null hypothesis must be accepted, namely, there is no linear regression relationship for sociopaths, normals and neurotics in that order on a two-dimensional graph, where the abscissa is the Pd scale of the MMPI, graphed in reverse order, and the ordinate is the Pt scale of the MMPI.

As mentioned previously, Freud would have postulated an ascending linear relationship in this order, sociopaths, normals and neurotics. On the other

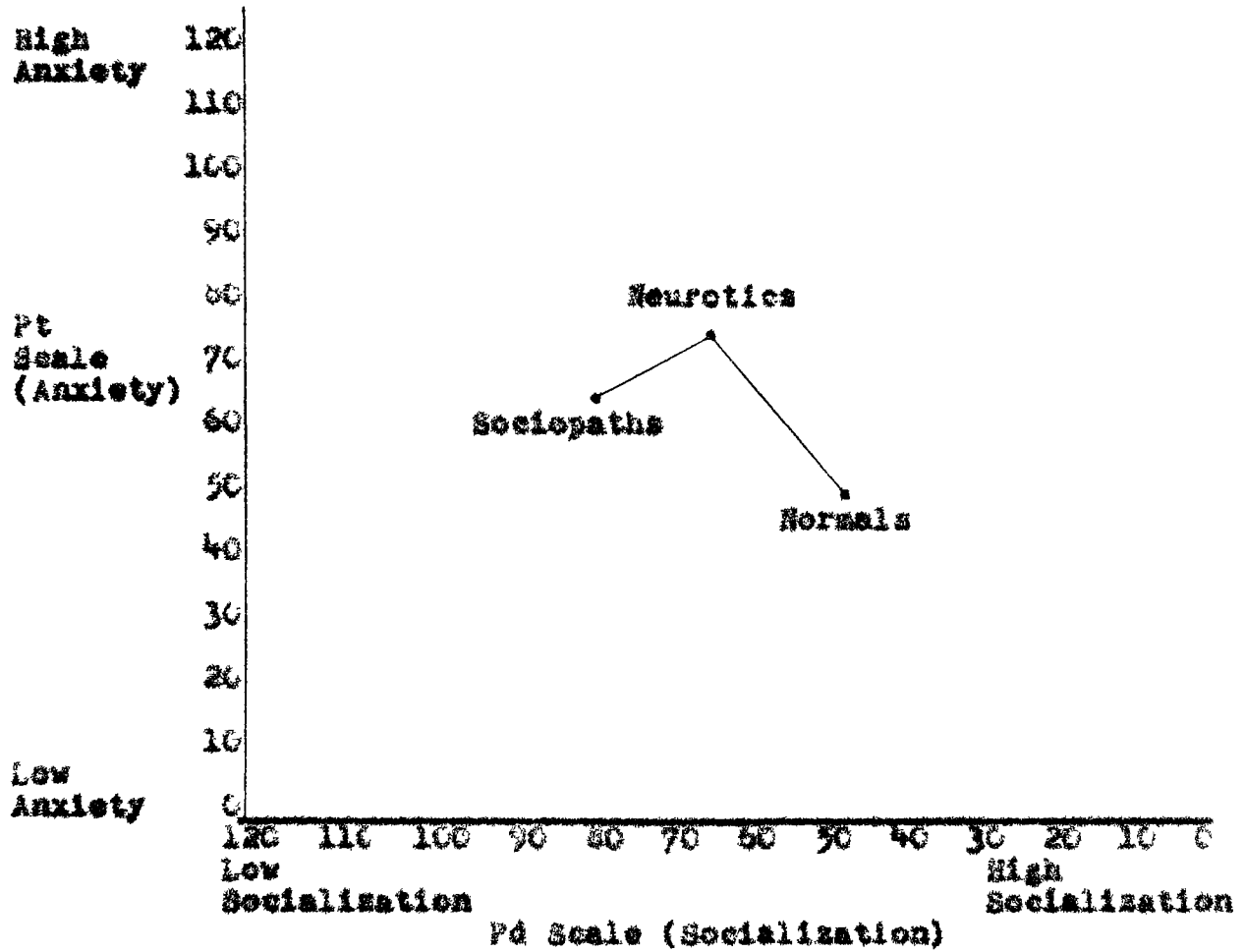


Figure 2.- Graph for the Male Sociopaths, Neurotics, and Normals for their Mean Scores on the Pd and Pt Scales of the MMPI.

hand, Mowrer would have predicted that the line would commence with sociopaths, rise to the neurotics and fall down to the normals. The findings of this study again support Mowrer.

In conclusion, the results obtained in this study have been generally favorable to the Mowrerian position.

4. Suggestions for Further Research.

Since no one study definitely settles a theory but may or may not offer support in favor of it, a similar study to the present one using a different population of sociopaths, neurotics and normals, as well as other measures of socialization and anxiety may throw further light on the Mowrerian and Freudian theoretical positions. One problem regarding this type of study would be the difficulty encountered in obtaining large sample groups of sociopaths, neurotics and normals from one population.

Another approach to this problem area would be to administer socialization and anxiety measures before and after the application of Freudian and Mowrerian therapies. This would necessitate the controlling of all possible variables during the process of the therapy.

Presuming the therapy was effective, the projected results of this study would favor Freud if the socialization scores decreased after therapy. On the other hand, if the socialization scores increased after therapy, then the results would favor Lowrer.

One of the unexpected results of this investigation was the high level of anxiety found among both the female and male sociopaths. Since the literature regarding this subject is inconclusive, other studies using various measures of anxiety on sociopathic groups could have significant therapeutic importance.

SUMMARY AND CONCLUSIONS

From time immemorial, the enigmatic relationship between guilt and anxiety has presented a puzzling challenge. At the end of the nineteenth century, Freud made a major effort to solve this problem. He maintained that neuroses and certain forms of functional psychoses resulted from the struggles arising from the over-severity of the superego and the repressed impulses of the id. The ego had the role of the regulator or executive, and feared that the repressed impulses would break out or return. This generated the chronic state of anxiety and the development of defense mechanisms to alleviate the anxiety.

For years the Freudian hypothesis regarding neurotic anxiety was unchallenged in scientific research. In recent years there have been many scientific investigations into the nature of neurotic anxiety. Mowrer has been in disagreement with the basic Freudian hypothesis regarding the origin of neurotic anxiety. He stated that the neurotic's anxiety comes from past misbehavior about which the individual has real guilt. The neurotic has committed palpable acts of misconduct for which he feels guilty. The guilt is always real and generates the anxiety state.

This study has examined the relation of anxiety to socialization on the Pd and Pt scales of the MMPI for the three character types, sociopaths, neurotics and normals.

If Freud's concept is valid, then on the Pd scale of the MMPI, the mean scores for groups diagnosed as sociopaths, normals and neurotics would place from low to high socialization in that order. On the contrary, Mowrer had predicted that the order would be sociopaths, neurotics and then normals. The results of this investigation support Mowrer's position.

According to Freudian theory, indices of socialization should correlate negatively with indices of anxiety. On the other hand, Mowrer has contended that there should be a positive correlation between measures of socialization and measures of anxiety. The present findings for both female and male groups would add further probability to the Mowrerian position on account of the positive correlations.

The plotting of the female and male mean scores on the Pd scale and the Pt scale on a two-dimensional graph favors the Mowrerian theory. If the Freudian hypothesis was valid, then there would have been ascending linear relationship in this order, sociopaths, normals and neurotics. Mowrer contended that the line should begin

with the sociopaths, ascend to the neurotics and fall down to the normals. The results of this study have supported the basic Kowrerian hypothesis.

The conclusions of this study, if substantiated by further studies, have far-reaching consequences to psychopathological treatment, as well as social and moral implications. Related researches in this critical area should provide invaluable insights into the origin and nature of mental illness.

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APPENDIX

ABSTRACT OF

The Interrelation between Guilt and Anxiety in the
Freudian and Lacanian Hypotheses

APPENDIX

ABSTRACT OF

The Interrelation between Guilt and Anxiety in the Freudian and Mowrerian Hypotheses¹

During recent years various hypotheses have been formulated regarding the origin of neurotic anxiety. Freud taught that neurotic anxiety had its origin in the moral struggles resulting from an over-strict superego and the inhibited instincts of the id. The ego feared that these repressed instincts would get out of control. This generated the chronic state of neurotic anxiety.

Mowrer has questioned the Freudian postulate and has proposed an alternative hypothesis. The Mowrerian theory has maintained that neurotic anxiety comes not from acts which the person would perform but dares not, but from actions which he has committed but wishes that he had not.

This problem has been studied in this investigation. Three character types, sociopaths, neurotics and normals were examined on the relation between the independent variable socialization and the dependent variable anxiety. The statistical findings of this study tend to support the Mowrerian position. The neurotic sub-group appeared to have

¹ Leo Jeffrey Hollis, doctoral thesis presented to the Faculty of Psychology of the University of Ottawa, Ontario, April 1968, ix-72 p.

a higher level of anxiety and a lower level of socialization than the normal sub-group, as Mowrer had predicted. The plotting of the results on a two-dimensional graph lent further probability to the basic Mowrerian theory. Because of the social, moral and therapeutic implications, it would appear that from further research relatively important conclusions may be derived.