

AN ELABORATION OF A STUDY OF
THE SCHIZOPHRENOGENIC MOTHER
CONCEPT BY MEANS OF THE
THEMATIC APPERCEPTION TEST

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
Kevin Michael Mitchell
1965



This is to certify that the

thesis entitled

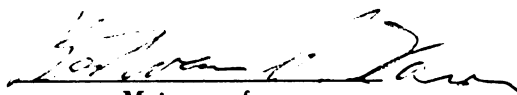
AN ELABORATION OF A STUDY OF THE
SCHIZOPHRENOGENIC MOTHER CONCEPT
BY MEANS OF THE THEMATIC APPERCEPTION

TEST
presented by

Kevin Michael Mitchell

has been accepted towards fulfillment
of the requirements for

Ph.D. Psychology
_____ degree in _____


Major professor

Date November 29, 1965

~~FEB 21 1969~~ 157

MAR 3 1969 0-054

~~JUN 10 1969~~ Pd 15K

~~AD 28~~

~~JUN 10 1969~~ not Paid

~~JUN 12 1969~~

Pd 57 R22

~~A 237~~

~~NOV 10 1969~~

NOV

131

131

X 258 181

~~NOV 20 1969~~ R2M

JAN 21 2004
081303

~~DEC 7 1969~~ Pd 2

~~JAN 11 1970~~ Pd 19

~~FEB 15 1970~~ Pd 2

~~MAR 16 1970~~ Pd 98

~~APR 12 1970~~ 117

~~AUG 6 1970~~ 205

~~JUN 10 1970~~ 233

~~MAR 10 1971~~

AN EVALUATION OF THE USE OF
THE SCHIZOPHRENIA SCALE
BY MEANS OF THE SCHIZOPHRENIA SCALE

by Robert M. ...

The achievement of ... of the ... authors is the primary ... The essential aspect of the concept of ... is the notion that, ... the needs of the ... will satisfy her needs, ... needs and view of ... that the child's behavior is ...

Previous ... the concept of the ... interview techniques and ... control groups have ... little or no attention ... have used objective ... attitude scaling techniques but ... difficult to differentiate ... and do not enable us to ... attitudes and behaviors.

This study employed the TAT, assuming that the schizophrenogenesis would be projected onto the stories. The first hypothesis was that mothers of schizophrenics, more than mothers of normals, give TAT stories where

ABSTRACT

AN ELABORATION OF A STUDY OF THE SCHIZOPHRENOGENIC MOTHER CONCEPT BY MEANS OF THE THEMATIC APPERCEPTION TEST

by Kevin Michael Mitchell

The schizophrenogenic mother is seen by several authors as the primary agent in schizophrenia. The essential aspect of the concept of the schizophrenogenic mother is the notion that, in any situation where the needs of the child and the needs of the mother conflict, the mother will satisfy her needs, but only indirectly, by imposing her needs and view of reality onto the child in order that the child's behavior in some way satisfies the mother's needs.

Previous studies have attempted to assess the concept of the schizophrenogenic mother through interview techniques and/or data from psychotherapy. However, control groups have generally not been used and there has been little or no attempt to quantify results. Other studies have used objective psychological test data and/or attitude scaling techniques but these strategies make it difficult to differentiate between real and professed attitudes and do not enable us to readily see the relationship between attitudes and behavior.

This study employed the TAT, assuming that the schizophrenogenesis would be projected onto the stories. The first hypothesis was that mothers of schizophrenics, more than mothers of normals, will give TAT stories where the dominant individual will either refuse to meet the needs of the dependent person or take from the dependent person whenever their needs conflict. The second hypothesis to be tested was that the differentiation of mothers of schizophrenics from the mothers of normal ss is communicable.

Twenty mothers of schizophrenics and twenty mothers of normals were administered the entire TAT sequence with the exception of card XVI. Children were matched on the basis of sex, age, level of education, number of children in the family and the child's chronological position among his siblings. In addition, the mothers of the two groups of children were matched on age, level of education and social class.

Each individual story was judged as pathogenic, unscorable or benign by a judge clinically sophisticated in this area and the criteria used were given to a second judge who attempted to make the same categorizations. A score was then tabulated for each s from the formula: Pathogenic/Pathogenic + Benign.

The results led to the following conclusions:

1. Mothers of schizophrenics can be significantly differentiated from mothers of normals by means of the TAT.
2. Criteria for classification as pathogenic, unscorable or benign can be communicated as well as formulated.
3. Support for the schizophrenogenic mother concept, whether as a cause or reaction, is indicated.

A discussion of the research, both from the point of view of Ss and the relative sensitivity of TAT cards was given as well as some suggestions for the treatment of the schizophrenic and/or his family. In particular, the present writer suggested some changes in the scoring system which radically changed the scoring system used in the present study.

AN ELABORATION OF A STUDY OF
THE SCHIZOPHRENOGENIC MOTHER CONCEPT
BY MEANS OF THE THEMATIC APPERCEPTION TEST

By

Kevin Michael Mitchell

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

1965

637496
6-1-66

ACKNOWLEDGMENTS

The author extends his appreciation to the members of his dissertation committee, Drs. Bertram Karon, Josephine Morse, John Burley and Bill Kell, not simply for their help with the preparation and execution of this study but, also, for their unswerving demand that he become a psychotherapist. A special debt of gratitude is owed Dr. Karon, chairman, who contributed greatly to the conceptual structure of the study.

On a larger scale, I should like to thank my wife, Rosemond, for her faith and encouragement. She made the effort worthwhile.

ACKNOWLEDGMENTS

The author extends his appreciation to the members of his dissertation committee, Drs. Bertram Karon, Josephine Morse, John Hurley and Bill Kell, not simply for their help with the preparation and execution of this study but, also, for their unswerving demand that he become a psychotherapist. A special debt of gratitude is owed Dr. Karon, chairman, who contributed greatly to the conceptual structure of the study.

On a larger scale, I should like to thank my wife, Rosamond, for her faith and encouragement. She made the effort worthwhile.

TABLE OF CONTENTS

Table	Page
1. Data of subject population of both mothers ACKNOWLEDGMENTS	ii
LIST OF TABLES	iv
LIST OF APPENDICES	v
Chapter Pathogenic scores calculated for each TAT card from pathogenic stories attributed Judged 1 and 11 by experimental and control subjects	1
METHOD	24
RESULTS	31
DISCUSSION	36
SUMMARY	63
BIBLIOGRAPHY	65
APPENDICES	73

LIST OF TABLES

Table	Page
1. Data of subject population of both mothers and children of experimental and control groups	29
2. Pathogenic scores attributed by Judges I and II to individual experimental and control subjects	32
3. Pathogenic scores calculated for each TAT card from pathogenic stories attributed by Judges I and II to experimental and control subjects	34
4. Pathogenic scores attributed to individual experimental and control subjects under new scoring system	82
5. Pathogenic scores calculated for each TAT card under new scoring system	83

LIST OF APPENDICES

Appendix		Page
A.	General criterion; pathogenic, neutral and benign themes used to score for schizophrenogenesis in TAT protocols in Meyer's (1964) study	73
B.	Pathogenic, unscorable and benign themes derived during the present study to score for schizophrenogenesis in TAT protocols	77
C.	Pathogenic, unscorable and benign themes which comprise the New Scoring System	80
D.	Tables reflecting results of data rescored under new scoring system	82

INTRODUCTION

According to Arieti (1959), Kraepelin was the first to structure the concept of dementia praecox as a nosologic entity. His major criterion for the identification of the syndrome was progressive deterioration, thus emphasizing the descriptive, rather than dynamic, aspects of the disease.

Although Bleuler (1952), Federn (1952), and Freud (1925) emphasized a dynamic account of schizophrenia, delineating regressive and restitutive aspects of the syndrome, considerable controversy still exists concerning the precise nature of the schizophrenic process. Some writers (Bender, 1955, 1956; Bergman and Escalona, 1949; Gurevitz, 1954; Kallman, 1946, 1953; Mahler, et al. 1949; Rabinovitch, 1952 and Stierlin, 1959) believe that schizophrenia refers to an essentially constitutional disorder which is genetically determined.

Indeed, presenting the obverse of the present writer's hypothesis concerning the concept of the schizophrenogenic mother, both Gurevitz (1954) and Rabinovitch (1952) insist that the schizophrenic disturbance is inborn and that the

negative attitudes expressed by the child's mother are reactive and represent her response to rejection by the child who is unable to respond to the mother's affection.

Other writers (Arieti, 1954; Bettelheim, 1956; Fromm-Reichmann, 1948, 1960; Kanner, 1949; Karon, 1963; Klein, 1952, 1957; Powdermaker, 1952; Rosen, 1953; Searles, 1958 and Sullivan, 1947, 1953, 1956) clearly designate interpersonal relationships as both the primary cause and fundamental repository of the schizophrenic process. More orthodox psychoanalytic writers (e.g., Nuberg, 1955) emphasize interpersonal relationships as a significant causative factor in schizophrenia but do not rule out constitutional factors entirely. Bellak's (1958) "multiple-factor theory of schizophrenia" often serves as a model for a partially effective compromise between the two positions.

More to the point, however, there seems to be increasing evidence, much of it based on clinical impression rather than rigid experimental research, that families of schizophrenics appear to be different from families of so-called normal individuals. Furthermore, there seems to be a sense of increasing assurance among psychotherapists that schizophrenic patients can respond positively to psychotherapy. Consequently, although the status of genetic and

biochemical factors in the schizophrenic process is far from completely delineated, the psychologist as therapist has a wide range of meaningful techniques which he can utilize in ameliorating the effects of the schizophrenic process in contemporary interpersonal relationships regardless of the etiology of the process. It is the present writer's opinion that the psychotherapeutic effort is, and shall remain, of fundamental importance, regardless of the nature of the causative factors in the syndrome and that a careful examination of the interpersonal relationships of the schizophrenic, especially within his family, seems both appropriate and highly necessary. Finally, it is the present writer's opinion, and a basic assumption of this paper, that an investigation of interpersonal relationships constitutes the most meaningful avenue for understanding and treating the schizophrenic.

A large number of papers, usually of a theoretical nature, have concentrated on the kinds of interpersonal relationships which are assumed to account, at least in part, for the schizophrenic process. Bleuler (1952), Federn (1952) and Freud (1925) are early writers who conceptualized the process as withdrawal from objects and object relationships. Freud (1925) suggested that the break with reality was due either to increasing pressure from the environment or

increasing pressure from the id. In either event, pressure, leading to overwhelming anxiety, resulted in the schizophrenic withdrawal. Freud emphasized the regressive aspects of the syndrome, but he also realized that restitutive factors play a role as attempts to replace the still existing, but rejected, world. However, it was left to Federn (1952) to first suggest the importance of ego boundaries and ego feelings in schizophrenia.

Later, other writers (Fairbairn, 1954; Fromm-Reichmann, 1948, 1960; Klien, 1952, 1957; Sullivan, 1947, 1953, 1956) suggested that the schizophrenic withdrawal resulted from early experiences in destructive relationships with "significant others." Becoming even more specific, Bettelheim, (1956); Kanner, (1949) and Rosen (1953) believe that the schizophrenic's "significant others" were destructive because, in some way, they threatened his life. While Johnson, et al., (1956) have emphasized the presence of both discrete and continuous trauma in the early life of the schizophrenic, Jackson (1957) asserts that the early life situation of the schizophrenic should not be seen as "trauma" but rather as ". . . a condition which has been non-discrete and continuing." (p. 181) More specifically, Karon (1960) feels that oral trauma, which he considers fundamental in the genesis of the schizophrenic

process, consists of a sequence of interactions which continues all of the patient's life. It involves the inability of the schizophrenic's mother to feed her child without becoming angry thus causing the feeding situation, per se, to become threatening for the schizophrenic. He adds that "...oral trauma is not one event, but the mother's continuous reaction to feeding demands" (p. 481).

More recently, there has been a greater emphasis on specific aspects of the kinds of interpersonal relationships that seem to engender a schizophrenic process. For example, Arieti (1954), Bateson (1955), Chapman (1960), Flavell (1957), and Powdermaker (1952) have commented on the communication process in the families of schizophrenics. Arieti (1954) and Powdermaker (1952) agree with Sullivan (1953) that the pre-schizophrenic introjects erroneous parental attitudes about himself and other persons, making these attitudes his own. In so far as these attitudes are erroneous and lead to inept ways of dealing with his environment, the child eventually withdraws and the schizophrenic process ensues. Bateson (1955) qualifies this picture of the communicative process by suggesting that the child does not receive merely unilateral messages but, rather, double-

bind messages about himself and other persons in such a way that the messages contradict each other leaving the child unable to act independently in attempting to deal with his environment. his individuality. Furthermore, there is evidence Flavell (1957) points out, however, that "... a current deficit in cognition must be explained in terms of early interpersonal disturbances which involved cognitive, as well as emotional, development" (p. 128). Consequently, he offers three paradigms which he feels might be useful in considering such cognitive developments. Flavell suggests that possibly "... only a fragmentary incorporation of attitudes toward reality take place because of a pervasive atmosphere of parental rejection" (p. 129). Or, "... reality attitudes with which the child is presented tend to be laden with hypocrisy and internal contradiction" (p. 129). Or, finally, "... the parents refuse to tolerate the child's presocialization autistic ideas and, therefore, the child must come to accept the parents' reality" (p. 130). This last paradigm, in particular, and the first two to some extent, suggest that the child, in order to literally survive in his family, must incorporate his parents' reality which, in turn, means that he must surrender his individuality. (p. 570) It is the present writer's opinion that there seems to be growing support for the notion that a child becomes schizophrenic within a family or family surrogate and that one of the fundamental processes involved is the necessity

for the pre-schizophrenic child, in his particular family, to accept the imposition of another's distorted reality, causing him to give up his own evaluative abilities and, consequently, his individuality. Furthermore, there is evidence to suggest that this imposition of distorted reality, which is destructive in nature, occurs largely out of the needs of the schizophrenic's mother. This essentially is the theory of the schizophrenogenic mother (Fromm-Reichmann, 1960; Karon, 1963) which will serve as the construct under study in this paper.

At a theoretical level, Powdermaker (1952) sees the basic etiology in schizophrenia as the pre-schizophrenic's need to comply with the reality of others versus his need to own his own perceptions and his own reality. Stierlin (1959) speaks of this as "... adaptation to a stronger person's reality." Dynamically, Stierlin posits that the mother needs her child as a means of self justification and self confirmation, thus putting pressure on the child to experience and interpret reality as the mother wants it to be. Searles (1958) sees the schizophrenic illness as "... the child's loving sacrifice of his very individuality for the welfare of the mother who is loved genuinely and altruistically" (p. 570).

These theorists, and others of a similar orientation, believe that a pathological relationship between schizophrenogenic mother and child exists. They do not, however,

suggest a meaningful paradigm for understanding how the mother's attitudes and feelings become part of the schizophrenic in such a way that his behavior becomes psychically determined in numerous situations completely different from familial situations. To this extent, his and others' reaction to his aggression Klein (1952, 1957) and Fairbairn (1954) have provided such a paradigm. While the two theorists disagree on a number of basic issues, for the present writer's purposes, they can be examined together for the most part. Essentially, although both are Freudian analysts, they elaborate on child Sullivan's (1952) basic hypothesis that schizophrenia is the outcome of destructive interpersonal relationships with "significant others." The syndrome involves the introjection of the "significant others" hostile, destructive attitudes which are then turned toward the self causing an actual bad split in the personality.

Klein (1952, 1957) and Fairbairn (1954) argue that the pathological child carries around with him internalized objects, specifically, sadistic parental images, which continuously goad and punish him and which, thereby, determine his perceptions of himself and his relationships with other persons. Internalized objects, leading to psychic structural differentiation, mold the child's psychological life and determine his behavior. Both theorists, therefore, posit a psychic reality as distinct from outer reality and affirm that the difference between normal and pathological individuals,

therefore, is the degree to which phantasies are realistically dealt with and gratified in relation to the demands of outer reality. However, Klein (1952, 1957) sees the infant's aggression and, to some extent, his and others' reaction to his aggression as too biologically determined to suit Fairbairn (1954). The latter is explicit in viewing the causal starting point of disturbed development as definitely environmental. He believes that ". . . disturbed development results when the mother does not succeed in making the child feel she loves him for his own sake and as a person in his own right." (Guntrip, 1961, p. 330) The dynamic of the process of repression is aggression felt in the first place against bad external objects. The schizophrenic ultimately represses, not impulses or memories, per se, but rather bad internalized objects. However, since internalized objects become psychic structures, they can be repressed only by repressing parts of the ego, resulting in ego splitting. In summary, both Klein and Fairbairn's paradigm of internalized objects constituting psychic reality allows us to see the schizophrenic process as the imposition of another's distorted reality upon the victim and offers at least a partial solution to the problem of understanding how maternal influences early in life determine later behavior.

Fromm-Reichmann (1960); Giffin et al. (1954); Johnson et al. (1956); Karon (1960, 1963); Karon & Rosberg (1958) and Rosberg & Karon (1958) have contributed extensively to the concept of the schizophrenogenic mother. For instance,

Johnson, et al. (1956) feel that the schizophrenic child's behavior reflects poorly integrated impulses on the part of the parents. The expression of the symptom through the child both determines the psychosis in the child and protects the parent from the same psychosis.

Giffin, et al. (1954), in describing the genesis of anti-social acting out behavior, offer an account which is applicable to the formulation of the schizophrenic process being offered here:

Antisocial acting out in a child is unconsciously initiated, fostered and sanctioned by the parents, who vicariously achieve gratification of their own poorly integrated forbidden impulses through a child's acting out. One or both of the parents, in addition, unconsciously experiences gratification for their own hostile and destructive wishes toward the child who is repeatedly destroyed by his behavior. (p. 669)

Karon (1963) addresses himself most directly to the concept of the schizophrenogenic mother.

The schizophrenogenic mother feels inadequate and compensates for her inadequacy by making demands on the child in terms of her own pathological needs whenever her needs conflict with his. In many respects, the underlying problems of the schizophrenogenic mother are similar to those of the schizophrenic, but she defends against her anxieties by destroying the child." (p. 29)

The essential aspect of the concept of the schizophrenogenic mother is the notion that, in any situation where the needs of the child and the needs of the mother conflict, the mother will satisfy her needs, but only indirectly, by imposing her needs and view of reality onto the child in order that the child's behavior in some way satisfies

the mother's needs. This general idea, although not always labeled as the concept of the schizophrenogenic mother, has been studied in various ways. Questionnaires, interviews, objective and projective psychological tests, as well as psychotherapy with the child and/or mother have all contributed in both a theoretical and experimental sense. It is a major assumption of this paper, however, that the mother of the schizophrenic is a significant factor in the genesis of schizophrenic reactions in her child and that the concept is experimentally valid and experimentally meaningful.

In addition to the writers mentioned above, others who offer less well systemized approaches or who may not always specifically express the notion of the schizophrenogenic mother, have noted characteristics of the mothers of schizophrenic children which, taken as a whole, would seem to offer support for such a concept.

Earlier writers (Despert, 1942; Kasania, 1934) have described the mothers of schizophrenic children as over-protective, anxious, and solicitous. Usually, profound rejection, either overt or covert, was a conspicuous factor in the mother-child relationship. In a classical study, Tietze (1949) interviewed mothers of schizophrenics and found that nearly all such mothers described themselves as nervous, high strung, shaking inside and always anticipating danger. Tietze felt that what was most missing was a kind of intuition or empathy between mother and child.

More recent writers, without specifically employing the term "schizophrenogenic mother" have also cited similar findings as a result of structured interview techniques and psychotherapeutic intervention with the schizophrenic and/or his family. Kaufman, et al. (1957) hypothesized that the core anxiety of both the parents and schizophrenic child is fear of annihilation. The parents are unable to recognize that the child has a separate identity, thereby allowing themselves to displace their own anxiety onto the child and then controlling this anxiety by controlling the child.

Lu (1962), after intensive interviews with 24 hospitalized schizophrenics and their families, found that in 19 of the 24 cases the parents had expected the pre-schizophrenic, more than his normal sibling, to be both unloved and yet achieve perfection. Lu also found that in 17 of the 24 cases, the schizophrenic had made greater efforts than his normal siblings to fulfill these contradictory expectations.

Meyers and Goldfarb (1961) defined their parental perplexity syndrome as involving ". . . parental passivity, marked uncertainty, . . . absence of empathy with the child with resultant diminished awareness of the child's needs, bewilderment and blandness in the face of socially unacceptable or bizarre behavior in the child and a total absence of forthright parental control" (p. 552). Based on observations made in the home and open ended interviews, the authors

concluded that parental perplexity confronts the pre-schizophrenic or schizophrenic child with an absence of positive reinforcement differentiation that is needed by the developing ego for the effective integration of clear cut systems of action. (1957) Some effort has been made to categorize the parents of schizophrenics. Ekstein, et al. (1958) and Reichard and Tillman (1959), using structured interviews and data from psychotherapy, have suggested that there are three categories of parents who usually produce a schizophrenic child: overtly rejecting mothers, covertly rejecting mothers, and the schizophrenogenic father. The writers agree that the overtly rejecting mother can best be described as cold, critical and insistent that the child meet her needs. They also agree that the covertly rejecting mothers are infantile, parasitic and over protective as a reaction formation against hostility toward the child.

While interview techniques and data from psychotherapy afford a basis for a good deal of informative speculation about the mothers of schizophrenics, these methods do not provide for adequate control groups. Nor are the data collected by such methods easily quantifiable, making exact replication most difficult. In an attempt to deal with these objections, there has been a large number of studies utilizing attitude scaling procedures. These techniques, whatever their shortcomings in other respects, employ control

groups and are easily quantifiable. In general, the findings support the clinical impression that the parents, especially the mothers, of schizophrenics differ significantly from parents of normal children along certain meaningful, quantifiable personality dimensions. Divorin and Wyant (1957) and Mark (1953), while using different terms and the Fascism and FELS scales respectively, agree that mothers of schizophrenics foster dependency, and are more domineering and restrictive. Generally, these mothers emphasized conformity and conventionality and allowed the child little freedom or choice of activity.

The PARI scales have been used by a number of writers and with similar results. Freeman and Grayson (1955) found that the greatest difference between mothers of normal children and mothers of schizophrenic children was reflected in the Possessive scale. Shepherd and Guthrie (1959) extracted five factors from the PARI scales which seemed to best describe the mothers of schizophrenics in their sample. They were: (1) detached authoritarianism; (2) inadequacy and inconsistency; (3) pervasive control; (4) sophisticated denial of inadequate mothering; and (5) annoyance and rejection. In a very interesting study, Heilburn (1960) had normal and schizophrenic daughters answer the PARI "as their mothers would." He found significantly more deviancy ascribed by the schizophrenic daughters to their mothers than by normal daughters to their mothers.

One study merits special consideration. Garmezy, et al. (1961) gave a child rearing attitude questionnaire to 15 hospitalized schizophrenics judged having had a good premorbid adjustment, 15 hospitalized schizophrenics judged having had a poor premorbid adjustment and 15 patients from a general service ward. Each S was asked to answer the questionnaire as he thought each of his parents would have answered the questionnaire when the S was between 13 and 14 years of age. In addition to the usual findings that the schizophrenic ss, significantly more than the normal ss, ascribed attitudes of dominance, over protection and ignoring of needs to their parents, the authors were also able to differentiate between good and poor premorbid schizophrenics. There was significantly greater ascription of paternal dominance among good premorbid schizophrenics and significantly greater ascription of maternal dominance among poor premorbid schizophrenics. Generally, where the father was seen as more dominant, the schizophrenic S became disabled in rather specific situations dealing with self esteem. Where the mother was seen as more dominant, the schizophrenic S showed more chronic, pervasive feelings of inadequacy. Whatever other conclusions may be drawn from the data, it seems apparent that what the father does not do is directly related to the seriousness of the schizophrenic syndrome in his offspring. While this paper is concerned only with the mothers of schizophrenics and not their fathers, it would

seem that the father's role is of great importance especially in ameliorating the destructive influences of the mother. It would also seem clear that where the mother is more dominant than the father, the schizophrenic child is more seriously disturbed and hampered than where the father is more dominant than the mother. Further work, beyond the scope of this study, will have to be done in this area, however. On the other hand, consequently, projective techniques have

A second consideration, when evaluating differential parental influence in the genesis of a schizophrenic syndrome, should be taken into account. Kohn and Clauson (1956) found that while schizophrenic Ss, significantly more than normal Ss, saw their mothers' making the major decisions in the family, this was interpreted differently by male as opposed to female schizophrenics. Male schizophrenics, in this study, were more likely to prefer the dominant mother, while female schizophrenics were more likely to prefer the passive father. Consequently, any conclusions about the role of the mothers of schizophrenics will have to be qualified by both the sex of the schizophrenic child and the role of his father. However, parsimony, due to the present level of our knowledge, would seem to suggest that each of the three factors might best be examined separately.

While objective psychological testing can detect subtle differences of the kind noted by Garnezy, et al. (1961) and Kohn and Clauson (1956), for example, only

projective testing would seem adequate to the task of probing into dynamic considerations. Furthermore, while objective testing and attitude scaling techniques lend themselves readily to the use of control groups and statistical manipulations, these techniques cannot differentiate between professed and real attitudes, on the one hand, nor can they account for differences between professed attitudes and behavior, on the other hand. Consequently, projective techniques have been used to get at the more dynamic, as opposed to the merely descriptive, aspects of maternal influence on the schizophrenic process.

The literature on the use of projective techniques in diagnosing schizophrenia is voluminous but considerations of space and relevancy preclude a survey of this literature. To the present writer's best knowledge, however, only one study using the TAT has attempted to directly assess the concept of the schizophrenogenic mother (Meyer, 1964). Nonetheless, at least two studies, using the Rorschach, have offered evidence for such a concept. McGhie (1961) found that mothers of schizophrenics gave Rorschach responses suggesting a diluted schizophrenic process while mothers of neurotics gave Rorschach responses suggesting a diluted neurosis.

In a most important study utilizing the Rorschach and directly related to the assertion that the attitudes and feelings of mothers of schizophrenics are merely reactions

to the children's illness, Prout and White (1950) concluded that there is a strong and early identification of such mothers with their sons and they suggested that this identification was not simply a result of the sons' illness. In general, the authors found that the mothers of schizophrenic Ss, more than mothers of normal children, were not as aggressive or demanding about their own lives, had a lesser sense of achievement and fewer outlets for self-expression. The authors felt that these self-attitudes, as reflected in their Rorschach responses, allowed the mothers of the schizophrenic Ss to intrude in their children's lives, setting up the kind of demanding, parasitic relationship which the present writer has referred to as schizophrenogenic.

A perusal of the literature suggests that only one study (Meyer, 1964) uses the TAT in order to evaluate the concept of the schizophrenogenic mother. Nonetheless, before discussing this study, it should be noted that the TAT seems sensitive to schizophrenic processes. Balken (1943) found that schizophrenic Ss offer fantasies having no apparent relationship to the pictures. Holt (1958) felt that schizophrenics show over-elaborate symbolism, bizarre or delusional qualities, arbitrariness, and perseveration more frequently than normal Ss. Lane (1955) found that schizophrenic Ss showed greater dependence on mother, more feelings of homelessness and rejection by parents as themes than normal Ss. Finally, Rotter (1946) feels that the following are

characteristics of the TAT themes of schizophrenics:

(1) direct contradiction; (2) absurdities; (3) loose associational thinking; and (4) blandness.

In a most interesting study, Goldman and Greenblatt (1955) were able to show that judges can successfully differentiate between markedly improved and non-improved schizophrenics on the basis of TAT stories. The authors suggested that the main point of reference was the degree of withdrawal, in the stories, from interpersonal relations.

In spite of the fact that some writers (e.g., Eron, 1950; Murstein, 1963) feel that the TAT is inadequate in differential diagnosis, Dana (1955, 1956), Davison (1953) and Lane (1955) have demonstrated the ability to differentiate significantly between schizophrenic and non-schizophrenic Ss.

Serious objections have been raised against the use of the TAT in differential diagnosis, however, Murstein (1963) points out that no comprehensive TAT scoring system has won universal acceptance by clinicians although many have been proposed. One reason, he feels, is that most qualitative scoring systems depend too much on the originator's skill, making studies using such scoring systems difficult to replicate. On the other hand, Murstein suggests that most quantitative scoring systems are too detailed and complex for popular clinical use.

testing Dana (1955) and Piotrowski (1952) would concur. The latter has pointed out that "... those who interpret TAT stories more freely, according to some personality theory, but not in terms of a systematic or objective scheme, fare better" (Piotrowski, 1952, p. 230). Of course, studies using this scoring approach are difficult to replicate because the findings too often depend directly upon the skill of the particular clinician interpreting the TAT stories. *social variable measured in each story. It was*

assumed Dana (1955) feels that "... use of the TAT as a formidable diagnostic tool without benefit of formal scoring has been demonstrated. However, when objective scoring systems are applied, the TAT has failed to yield clinical diagnoses, although there has been some differentiation *are* between normal and abnormal groups." (p. 19) *see 11, 1955*

experie Consequently, although utilization of the TAT in *alized* order to probe the more dynamic aspects of schizophrenogenic relationship between mother and child offers exciting possibilities, attention has to be paid to the way stories are categorized and variables measured so that communicability of procedures and results can be maintained. As mentioned above, only one study (Meyer, 1964) uses the TAT to assess the concept of the schizophrenogenic mother. Furthermore, Meyer addresses himself to the problem of communicating the process by which stories are judged so that replication can be assured. Granted the concerns mentioned above, projective

testing would seem most appropriate to evaluate this concept, especially if a communicable, somewhat quantifiable scoring system could be evolved. Meyer (1964) presented the TAT to mothers of schizophrenic and normal children. He hypothesized that "... the mothers of schizophrenics will give more stories than mothers of normals in which the dominant individual takes from a dependent one when their needs conflict" (Thesis Abstract, p. 1). This essentially was the interpersonal variable measured in each story. It was assumed to be best labeled as "destructiveness" and the best single indicator of a schizophrenogenic process.

Each story was judged as pathogenic, neutral or benign by Judge I, experienced with the concept of the schizophrenogenic mother. Criteria for each category were formulated in a very concrete fashion and Judge II, less experienced with the concept, using these criteria categorized each of the Ss' randomly presented stories as pathogenic, neutral or benign. A score was tabulated for each S from the formula: Pathogenic/Pathogenic + Benign.

The results led to the following conclusions:

1. Mothers of schizophrenics can be significantly differentiated from mothers of normals by means of the TAT.
2. Criteria for classification as pathogenic, benign or neutral can be communicated as well as formulated.
3. Support for the schizophrenogenic mother concept whether as a cause or reaction, is indicated.
(p. 12, 13)

The purpose of this study is to replicate Meyer's (1964) study using a larger N and to attempt to further delineate and refine communicable scoring criteria. The first hypothesis to be tested is that mothers of schizophrenics, more than mothers of normals, will give TAT themes where the dominant individual will either refuse to meet the needs of the dependent person or take from the dependent person whenever their needs conflict.

It should be understood that verification of the first hypothesis does not necessarily imply that the schizophrenogenic mother is the only or even primary cause of the schizophrenic process in her child. Moreover, verification of this hypothesis does not refute the contention that the attitudes and feelings of the schizophrenogenic mother are merely reactive to her child's illness. Nevertheless, the work of McGhie (1961) and Prout and White (1950) in addition to the verification of the present writer's first hypothesis would strongly suggest that the projections of the mothers of schizophrenics onto Rorschach and TAT cards reflect personal pathology rather than mere reactions to their children's illness. Certainly, while mothers of schizophrenic children may become more destructive toward their sick children than mothers of normal children, for whatever reasons, it would be difficult to account for the severity and pervasivity of the schizophrenogenic mothers' destructive feelings and feelings of low self esteem as merely reactive. Moreover,

the process of projection, so evident in the test responses of the mothers of schizophrenic children and employing ideas of reference, narcissism and loose associational thinking, could scarcely be seen as simply reactive.

Thus, the verification of the first hypothesis will support the concept of the schizophrenogenic mother and will offer reinforcement to the notion that, regardless of the cause, the reactions of the schizophrenogenic mother are important in understanding and treating the schizophrenic process in her child.

The second hypothesis to be tested is that the differentiation of mothers of schizophrenics from mothers of normal ss is communicable. Thus, further replication and refinement of this use of the TAT will be assured.

the family and, in so far as possible, the child's chronological position among his siblings. In addition, the mothers of the two groups of children were matched on age, level of education, and social class according to the two-factor system devised by B. D. Wright and Lylich (1955). Table 1 summarizes the characteristics of the sample population of both mother and child groups, as well as the experimental and control groups.

The mothers of the schizophrenic children were obtained from a hospital of children and adolescents in Michigan. Mothers of the normal children were obtained from P.T.A. groups in the same hospital.

Each S was seen for approximately fifteen minutes prior to testing in order to allay anxiety, establish minimum rapport, and offer assurances regarding the confidentiality of the test responses. METHOD

There were twenty mothers of schizophrenic children and twenty mothers of normal children. The schizophrenic children were so judged by at least one psychologist and one psychiatrist while the normal children were so judged on the basis of a school report, a report from an unbiased observer and an interview by the author. If any of the three criteria used for categorizing the children as normal indicated pathology, the child and, consequently, a potential S, was discarded. The two groups of children were matched on the basis of sex, age, level of education, number of children in the family and, in so far as possible, the child's chronological position among his siblings. In addition, the mothers of the two groups of children were matched on age, level of education, and social class according to the two-factor system devised by Hollingshead and Redlich (1958). Table 1 summarizes the data on the subject population of both mothers and children of both experimental and control groups.

The mothers of the schizophrenic children were obtained from a number of different Child Guidance Clinics in Michigan. Mothers of the normal children were obtained from P.T.A. groups in Jackson and Lansing, Michigan.

Each S was seen for approximately fifteen minutes prior to testing in order to allay anxiety, establish minimum rapport, and offer assurances regarding the confidentiality of the test responses. Each mother in the experimental group was tested at the particular Child Guidance Clinic where she had been seen originally. Each mother in the control group was tested either at the author's office at the Beth Moser Mental Health Clinic, Jackson, Michigan or in offices provided for such purposes at Michigan State University.

Mothers in the experimental group were contacted by the particular clinic worker who had originally seen her for intake. Experimental Ss were told that the purpose of the research was to learn more about the kinds of children who are referred to Child Guidance Clinics. The statement of the purpose was intentionally vague but the worker did specify that the mother's cooperation would have nothing to do with her child's disposition. Only those mothers were used as experimental Ss who had never been involved in psychotherapy of any kind and for whose child the particular clinic had already made specific recommendations.

In order to obtain control Ss the author spoke with a number of P.T.A. groups asking for volunteers. The purpose of the research was not explained but each group was promised that the author would return and explain the project once it had been completed.

Each S was administered the entire TAT sequence except card XVI. The author discovered that card XVI elicited a good deal of anxiety and felt that administering the card interfered with rapport. Consequently, after approximately three experimental mothers expressed extreme difficulty with card XVI, the author decided to discontinue its use. Only the question, "And what happens next in your story?" was used by the author and then only once, if at all, for each S. No other comments were made by the author during administration of the cards. At no time did E question S in order to facilitate the use of the subsequently used scoring system. The stories were typed on separate sheets of paper, with no identification cues available. They were then presented in random order to Judge I who, during the first judgment session, classified all stories as (1) pathogenic, (2) benign, (3) unscorable (4) can't tell. It should be noted that, in the present study, the category "Unscorable" was substituted for "Neutral." Essentially, those themes scored "Neutral" in Meyer's (1964) study were not neutral with regard to the concept "pathogenesis." Instead, those themes so categorized represented stories which could not be scored either Pathogenic or Benign and, consequently, it was felt that the term "Unscorable" would better reflect this meaning.

This classification was, in part, based upon thematic criteria, for types of stories which were not given by Ss in Meyer's (1964) study but which were given by Ss in the present study, were also used but they followed the same general rationale. All new criteria consisted of blind clinical judgments made by Judge I on the basis of the general theory underlying the criteria enumerated in the previous study. It should be emphasized that all criteria, in both studies, were developed by Judge I while judging the stories but without knowledge of which S gave the story being judged.

Following this, Judge I re-examined all stories placed in category (4) and reassigned each story so placed in one of the first three categories. Appendix A indicates those thematic criteria derived from Meyer's (1964) study.

These thematic criteria and the randomized stories were then presented to Judge II who followed the same judgment procedure as Judge I except that he had studied the added, as well as the established, criteria and could make constant reference to the derived scoring key. Judge II did not verbalize his criteria for classifying the stories since he used the previously extrapolated themes.

The general criteria for scoring were two-fold. If there is an interaction between a dominant and dependent individual, both with conflicting needs, the story is scorable. If not, the story is not scorable. Secondly, if there is such an interaction and if the dominant individual

takes the dependent individual's needs into account, the story is scored Benign. If the dominant individual either does not meet the specified needs of the dependent individual or meets his own needs at the expense of the dependent individual, the story is scored Pathogenic.

On the basis of the classifications made separately by Judges I and II, two scores were tabulated for each S using the formula: $P/P+B$, where P is the number of stories judged Pathogenic by a judge and B is the number of stories judged Benign.

Table 1.--Data on subject population of both mothers and children of experimental and control groups

S	Age of Mother	Education of Mother	Sex of Child	Age of Child	Number of Children	Position of Child	Social Class
C-1	36	12	M	6	2	1	3
E-1	31	12	M	6	3	1	3
C-2	55	12	M	19	2	1	3
E-2	41	12	M	18	5	1	3
C-3	43	12	M	15	3	3	4
E-3	48	12	M	16	2	1	4
C-4	42	12	M	14	5	3	3
E-4	51	12	M	13	3	3	3
C-5	44	14	M	6	4	3	3
E-5	30	15	M	5 1/2	4	1	3
C-6	47	17	M	6	3	3	1
E-6	41	16	M	6	2	2	2
C-7	31	10	M	5	2	2	4
E-7	35	8	M	5	3	2	5
C-8	34	12	M	4	6	4	3
E-8	32	12	M	4	6	4	3
C-9	33	12	M	8 1/2	3	2	3
E-9	42	12	M	9	4	4	2

RESULTS

Table II indicates the Pathogenic Scores attributed

spectively. It can be seen that Judge F attributed a higher Pathogenic Score to 17 of 30 experimental mothers in comparison to their matched control mothers while Judge J did so for 19 of 30 experimental mothers in comparison to their matched control mothers.

Use of the Sign Test, a non-parametric test, indicated that Judge F was

five out non-parametric test, indicated that Judge J was able to discriminate between experimental and control pairs of mothers on the pathogenicity of their children.

that Judge J was able to discriminate between experimental and control pairs of mothers on the pathogenicity of their children.

Further, the Sign Test indicated that Judge J was able to discriminate between experimental and control pairs of mothers on the pathogenicity of their children.

both Judges F and J were able to discriminate between experimental and control pairs of mothers on the pathogenicity of their children.

the experimental and control pairs of mothers on the pathogenicity of their children.

that the scores attributed to experimental and control pairs of mothers on the pathogenicity of their children.

C-10	36	14	M	11	3	1	2
E-10	35	14	M	10	2	1	3
C-11	40	11	M	11	1	1	4
E-11	35	9	M	11	2	2	5
C-12	34	16	M	9	2	2	2
E-12	33	16	M	7 1/2	3	2	1
C-13	49	16	M	15	3	2	2
E-13	38	14	M	15	5	2	3
C-14	27	13	M	6	2	1	3
E-14	28	12	M	6	2	1	2
C-15	33	12	M	8	3	3	3
E-15	37	10	M	9	4	3	4
C-16	44	16	M	12	5	2	2
E-16	45	15	M	11	3	2	2
C-17	35	13	M	13	1	1	3
E-17	38	12	M	15	3	2	3
C-18	45	12	M	12	3	3	2
E-18	41	11	M	13	4	4	3
C-19	34	13	M	12	6	2	2
E-19	29	14	M	10	5	1	2
C-20	38	12	M	8	2	2	4
E-20	37	11	M	8	3	2	4

children and mothers of normal children and, second, that this devised scoring system can be communicated to a second Judge so that he can also significantly differentiate between the two groups of . In addition, the scorer

RESULTS

Table II indicates the Pathogenic Scores attributed by Judges I and II to the experimental and control Ss respectively. It can be seen that Judge I attributed a higher Pathogenic Score to 17 of 20 experimental mothers in comparison to their matched control mothers while Judge II did so for 19 of 20 experimental mothers in comparison to their matched control mothers.

Use of the Sign Test, a rough, relatively insensitive, but non-parametric test, indicated that Judge I was able to differentiate between the experimental and control pairs of mothers at the .003 level of significance and that Judge II was able to differentiate between the experimental and control pairs of mothers at beyond the .001 level of significance.

Furthermore, use of the t-test for matched pairs, a more accurate and more powerful test, indicated that both Judges I and II were able to differentiate between the experimental and control pairs of mothers at beyond the .001 level of significance. The differences were in the predicted direction for both Judges, suggesting, first, that the scoring system devised by Judge I can be used to significantly differentiate between mothers of schizophrenic

children and mothers of normal children and, second, that this devised scoring system can be communicated to a second Judge so that he can also significantly differentiate between the two groups of mothers. In addition, the scorer reliability coefficient obtained via the product-moment correlation was .87.

Table 2.--Pathogenic scores attributed by Judges I and II to individual experimental and control subjects

S	Judge I		Judge II	
	Experimental Subject	Control Subject	Experimental Subject	Control Subject
1	.68	.30	.80	.38
2	.78	.59	.94	.68
3	.86	.58	.85	.75
4	.56	.29	.69	.25
5	.67	.67	.67	.60
6	.42	.43	.58	.60
7	.73	.60	.71	.47
8	.65	.36	.73	.56
9	.41	.25	.58	.21
10	.70	.62	.81	.60
11	.72	.54	.76	.68
12	.83	.69	.85	.79
13	.50	.74	.69	.65
14	.76	.44	.78	.60
15	.74	.38	.83	.50
16	.79	.27	.80	.36
17	.70	.33	.78	.64
18	.75	.41	.76	.50
19	.64	.50	.78	.59
20	.83	.29	.87	.40

Table 3 indicates the results of applying the formula: $P/P+B$ to each TAT card across both experimental and control Ss, thus deriving two Pathogenic Scores on each card for each group by each judge or four Pathogenic Scores, in all, for each TAT card.

Use of a 2×2 contingency table and the exact test, described by Walker and Lev (1953) under the binomial test, indicated that Judge I was able to differentiate between the experimental and control groups' stories produced to six cards (2, 7BM, 9GF, 12M, 17GF and 18GF) at beyond the .05 level of significance and to differentiate between the two groups' stories to three cards (7BM, 17GF and 18GF) at beyond the .01 level of significance.

Similarly, again using the same test, Judge II was able to differentiate between the experimental and control groups produced to four cards (7BM, 12M, 18BM and 18GF) at beyond the .05 level of significance and to differentiate between the experimental and control groups' stories to one card (12M) at beyond the .01 level of significance.

Finally, it should be noted that Judge I attributed a Pathogenic Score of .64 or higher to 16 experimental mothers and to only three control mothers. It would appear that, for Judge I, a Pathogenic score of .64 is the most economical and efficient cut-off score to best differentiate between the experimental and control mothers.

Table 3.--Pathogenic scores calculated for each TAT card from pathogenic stories attributed by Judges I and II to experimental and control subjects

Card	Judge I		Judge II	
	Experimental Subjects	Control Subjects	Experimental Subjects	Control Subjects
1	.83	.64	.87	.75
2	.72	.40	.77	.62
3 BM	.91	.50	1.00	.73
3 GF	.92	.50	1.00	.67
4	.74	.53	.82	.82
5	.73	.77	.93	.93
6 BM	.90	.84	.84	.81
6 GF	.47	.58	.50	.50
7 BM	.75	.26	.65	.27
7 GF	.65	.50	.65	.64
8	.62	.27	.73	.38
8 GF	.40	.27	.50	.37
9 BM	.67	.57	.88	.67
9 GF	.79	.29	.87	.55
10	.05	.16	.06	.16
11	1.00	.78	1.00	.81
12 BG	.00	.08	.25	.00
12 F	.89	.83	1.00	.87
12 M	.71	.37	.93	.43
13 B	.33	.60	.67	.44
13 G	.33	.25	.25	.17
13 MF	.90	.74	1.00	.71
14	.67	.50	.60	.60
15	1.00	.82	1.00	.78
17 BM	.50	.37	.44	.43
17 GF	.91	.14	1.00	.25
18 BM	.68	.44	.83	.53
18 GF	.75	.22	.79	.44
19	.67	.40	1.00	.00
20	.50	.43	1.00	.33

Judge II attributed a Pathogenic Score of .69 or higher to 17 experimental mothers and to only two control mothers. It would appear that, for Judge II, the most economical and efficient cut-off score would be .69. These cut-off scores are similar to those found in Meyer's (1964) study in which the most efficient cut-off score for Judge I seemed to be .65 while the most efficient cut-off score for Judge II seemed to be .57.

The criteria used as a basis for this successful differentiation support Karon's (1963) contention, drawn from clinical experience, that mothers of schizophrenics seem to be unable to meet the needs of their schizophrenic children but, instead, use these children to indirectly meet their own (the mothers') needs.

The fact that Judge II was able to significantly differentiate between the schizophrenic and control mothers indicates that both the criteria and the process of differentiation are sound. Hence, it will be a prudent consideration when evaluating the validity of studies utilizing data derived from pathogenicity ratings.

Appendix A contains the criteria used for scoring stories as Pathogenic. Appendix B contains Meyer's (1964) study and a table of the results. Appendix C includes further information on the scoring of the present study.

DISCUSSION

The results cited indicate that mothers of schizophrenic children can be significantly differentiated from mothers of so-called "normal" children through an analysis of their stories produced to the TAT. The criteria used as a basis for this successful differentiation support Karon's (1963) contention, drawn from clinical experience, that mothers of schizophrenics seem to be unable to meet the needs of their schizophrenic children but, instead, use these children to indirectly meet their own (the mothers') needs.

The fact that Judge II was also able to significantly differentiate between the experimental and control mothers indicates that both the criteria and the process of differentiation are communicable, a most important consideration when evaluating the results of studies utilizing data derived from projective techniques.

Appendix A includes the criteria used for scoring stories as Pathogenic, Benign or Neutral in Meyer's (1964) study and also used in the present study, while Appendix B includes further criteria devised by Judge I during the present study.

It should be remembered, however, that verification of both hypotheses does not lead to any definite conclusion about the etiology of schizophrenia nor does it refute the contention that the attitudes and feelings of the schizophrenic child's mother are merely reactive to her child's illness. Nonetheless, the results cited indicate the validity of the concept of the schizophrenogenic mother and offer support to the notion that, regardless of cause, the reactions of the schizophrenogenic mother are important in understanding and treating the schizophrenic process in her child.

It was noted earlier that Judge I attributed a higher Pathogenic Score to 17 experimental Ss in contrast to their matched control Ss while Judge II attributed a higher Pathogenic Score to 19 experimental Ss in contrast to their matched control Ss. While these results are highly significant, some explanation should be offered concerning those pairs of mothers for whom the attributed Pathogenic Scores were reversed so that the control mother received a higher Pathogenic Score than her matched experimental mother.

For only one pair (E6 and C6) both Judge I and Judge II reversed the Pathogenic Score. In this case both mothers were Negroes although the present writer is at a loss to explain why their being Negro would be a factor in the reversal. However, they were the only Negroes in

the study and, furthermore, while Judge I attributed Pathogenic Scores of less than .50 to each mother, Judge II attributed Pathogenic Scores of greater than .50 to each. Obviously, there is a good deal of fluctuation here and no doubt further research will have to be done with Negro Ss using this scoring system.

Judge I attributed the same Pathogenic Score of .67 to a second pair of mothers (E5 and C5). Here, the question would seem to be why such a relatively high Pathogenic Score was attributed to a control mother. In explaining to E why she was late for her testing appointment, this control mother stated that her daughter had quite recently left her husband and had returned home to her mother with four children, making it very difficult for S to get away for her appointment with E. It might be speculated that, at the time of testing, this mother probably was experiencing a good deal of frustration with and anger toward her daughter and grandchildren and that these feelings might very well have been reflected in some of her stories.

Similarly, Judge I attributed a higher Pathogenic Score to a third control mother in contrast to her matched experimental mother (E13 and C13). In this case, toward the end of testing, the control mother broke down and cried, saying that some of the cards had reminded her of the fact that an uncle had died just one week earlier and

that her mother, as a result of this, had been openly wishing for death which had greatly upset S.

In each case, E might have discarded these control mothers' protocols before judging and substituted two other Ss. However, the results are important in that they lend further support to Murstein's (1963) contention that temporary mood states contribute to the kinds of stories told to TAT cards. Furthermore, these results suggest that very subtle and sophisticated judgments need to be made even within the bounds of the very concrete scoring system used in the present study. Nonetheless, the present writer will later suggest further refinements in the scoring system which negate the Pathogenic Score reversals found with the above pairs of mothers.

The reader should have a flavor of those stories told by experimental Ss and subsequently scored Pathogenic by both Judges I and II in order to further understand the scoring system and some of the dynamic processes reflected by these Ss in their stories. Six such stories follow:

1. Well this seems to be a picture of a woman that is haunted by something in the background. The lady seems to be in the background looking over her shoulder all the time watching her. So she is very disturbed and I imagine the look on her face reminds me (laughs) of my mother and I . . . my foster mother and I. Somebody is watching you all the time . . . peering over your shoulders as if . . . (Q) Well I don't know what might have happened between these two. The mother tries to dominate the girl's life. More or less always there even if she isn't present.

2. This looks like it would be either a mother or a grandmother. Because of her age, she is living with them and she knows that they would really rather wish that she didn't have to live with them. And the younger woman feels the same way but there isn't really anything that she can do about it because she can't stay by herself anymore.
3. I don't know. An empty boat, maybe someone was out fishing and they had a heart attack and maybe they fell out and drowned. No one knows they're out there. You should never go fishing by yourself. I think he just got out there, his boat is not turned over or nothing . . . He just had a heart attack and fell out of there and drowned and now they'll have to get some people out there and search for him because they'll find his boat and . . . no telling how far away it happened. I think he's drowned. Maybe his wife, when he don't come home pretty soon, gets worried and it'll probably be morning before they can go out looking for him. When they find him she'll be real hurt. Be too bad. I think he's drowned and . . . there's tragedy in that one too.
4. This looks like the picnics we used to go on and everyone eats so much that they're miserable and lay around after. There's grandfather and all the uncles and there's my husband (laughs) right there in the middle . . . right there.
5. That's . . . looks like another bad dream. That's a farm house . . . another bad dream and the girl is going to commit suicide. She's just dreaming of this of course . . . standing on the bridge. It's night time but the sun is shining. That's the way it looks to me . . . that's not the moon. There's a man waiting for her down below. She doesn't know what to do. If he catches her she's doomed and if she throws herself over the bridge she's doomed. I think she throws herself over the bridge.
6. This looks like a family to me and it looks to me like they're worried about the harvest. She's praying and the man is working the ground. Just . . . I don't know . . . that's how it looks. He's working and they're praying. It looks like there's been a disaster . . . tornado or something. She is going to church or school. (Q) How it goes on? I think she gets sick and dies . . . the lady's that . . . that's praying.

The first two stories, told by experimental Ss and scored Pathogenic by both Judge I and Judge II, reflect the concept of the "imposition of distorted reality" very clearly. In each, one person must force herself on the other although neither gains anything from the relationship. In fact, the implied needs are for some measure of independence in the context of mature concern but neither of these needs are met for either person. In the first story, especially, the paranoid element, in terms of an external, evaluating agent, is also quite clear.

The next two stories reflect a second theme: anger toward men. This was a quite common theme in the stories told by the experimental Ss in contrast to the stories told by the control Ss. The third story is rather stark in nature but the fourth story is more subtle and, in addition, reflects a very basic schizophrenogenic theme: the "poisoned milk fantasy" (Karon, 1958). In this story the men get fed but the food causes "discomfort" suggesting that the giver (mother) is unable to feed adequately. The point is that although she goes through the motions of feeding, the food is poisoned, in some manner again suggesting that the needs of others are not adequately being met.

The final two stories reflect a theme which will be returned to again in another connection. In these two stories the feelings of helplessness and progressive

deterioration are clearly defined. In the fifth story the girl is "doomed" whether she is caught or not while in the last story the family is initially merely "worried" about the harvest although eventually the woman dies. The present writer feels it is no coincidence that the woman "that's praying" dies.

Actually, the notion of a "destructive" relationship between a schizophrenogenic mother and her schizophrenic child needs clarification. While further evidence will be cited later, the above stories suggest to the present writer that the mother of a schizophrenic child feels as "destroyed" as her child. She has deep-seated feelings of helplessness and rage and it is this view of herself and her world, imposed upon her child in order to confirm her perceptions and expectations, which seems to form the basis of the "destructive" schizophrenic process. In other words, these stories would suggest that the mother of a schizophrenic child sees herself as a victim in a cold and ungiving world and, as a result, victimizes her schizophrenic child by imposing this distorted perception of the world upon him so that she can confirm this view of reality by watching her child's destruction. Essentially, she seems to "act out" her view of the world through her child while attempting to deny this view for herself.

The present writer derived separate Pathogenic Scores for each TAT card for each group of mothers by using the formula $P/P+B$. Utilizing the 2 x 2 contingency table, it was found that on three TAT cards (7BM, 12M, and 18GF) both Judges I and II attributed relatively more Pathogenic than Benign stories to the experimental Ss in contrast to the control group of Ss. These differences were significant at the .05 level and beyond.

Generally, the experimental mothers' stories produced to card 7BM reflected more unresolved conflict themes between the younger man and an authority figure than the control mothers' stories. On the other hand, while conflict was an important theme for the control mothers on this card, the younger man was usually seen as being able to listen to the advice of the older man but also able to maintain the right to make the final decision himself. Since both Judges attributed significantly higher Pathogenic Scores to the experimental in contrast to the control group of Ss, on this card, it would appear that father-son conflict may be a more important theme in the dynamics of the schizophrenogenic mother than mothers of "normal" children and might be one that should be explored more fully in the treatment of the schizophrenogenic mother and/or her schizophrenic child. Moreover, this point may indicate that for many, the treatment of choice would be family, as opposed to individual, therapy.

Parenthetically, neither Judge I nor Judge II attributed significantly higher Pathogenic Scores to the experimental mothers in contrast to the control mothers on either cards 6BM or 7GF. These cards, implying mother-son and mother-daughter conflicts respectively, elicited a large number of Pathogenic themes from both groups of mothers. At this point in time, it would be impossible to say whether father-son conflict themes are etiologically important for the schizophrenogenic relationship between mother and son, or if they simply represent displacement and/or generalization from more basic mother-son and mother-daughter conflict themes. Nonetheless, the exploration of father-son conflict themes in the treatment of a schizophrenogenic mother would seem to be particularly important because the preponderance of this particular theme in the experimental group's stories produced to card 7BM seems to clearly differentiate between these mothers and their matched control mothers.

To pursue this notion further. It had been noted in the review of the literature cited above that the emotional presence of the father seems to ameliorate the schizophrenic process in his child. The present writer would be willing to speculate that, in reality, the father's emotional presence argues against the perception the schizophrenogenic mother has that the world is a cold and ungiving place, thus ameliorating her pathology directly

and the child's only indirectly. On the other hand, it is no coincidence that schizophrenogenic mothers marry cold and ungiving men who, by and large, confirm their view of the world. Furthermore, I would be willing to speculate that, at an unconscious level, the schizophrenogenic mother fears that the father is going to destroy both mother and schizophrenic child and it is this seemingly genuine concern which forces her to keep the one person (father) who might help away from the child.

A similar analysis of the stories produced to card 12M would offer support for the above considerations and also offer further support to the notion that mothers of schizophrenic children see the world as less helpful than mothers of so-called "normal" children. By and large, the major difference in the stories produced to this card by the two groups of mothers revolved around the theme that, although both groups of mothers perceived the figure lying on the couch as in need of help, experimental Ss, significantly more often than control Ss, perceived the help as ultimately failing. This theme obviously is related to the sense of helplessness discussed above. It also seems to be related to the "poisoned milk fantasy" mentioned above because in most of the stories of the experimental Ss help was offered but the helper was not successful.

It should be pointed out at this time that it seems to the present writer that what often differentiates the stories told by the control mothers from the stories told by the experimental mothers is not so much the amount of pathology or number of conflict themes in the two sets of stories as it is the strategy employed by the control mothers in dealing with the pathology and conflicts they express in their stories. In this connection, the present writer feels that a new concept: the "tacked on" story, which will be discussed later in greater detail, will be of great value in future considerations about the differences between schizophrenogenic mothers and the mothers of "normal" children.

As noted above, Judge I attributed significantly more Pathogenic stories to the experimental in contrast to the control mothers on cards 9GF and 17GF while Judge II did not. As Murstein (1963) has shown, cards 9GF and 17GF, like card 18GF, generally elicit relatively more depressing themes than many other cards. This seemed to be the case, on both cards 9GF and 17GF, for both experimental and control mothers, but Judge I was able to attribute a significantly higher Pathogenic Score to the experimental in contrast to the control mothers on these two cards while Judge II was not. An analysis of the stories told to cards 9GF and 17GF by both groups suggest that a consideration of

the "tacked-on" story would aid in making a finer differentiation between stories told by the experimental in contrast to the control mothers.

Before considering the notion of the "tacked-on" story, however, it might be well to summarize the results cited above. Both Judges I and II were able to differentiate between the experimental and control pairs of mothers at beyond the .001 level of significance. Nevertheless, Judges I and II were able to significantly differentiate between only five and three pairs of mothers respectively, all differences being in the predicted direction.

In addition, by applying the formula: $P/P+B$ to each TAT card across both experimental and control Ss and thus deriving two Pathogenic Scores for each card, attributed by each Judge, it was found that Judge I attributed a significantly higher Pathogenic Score to the experimental in contrast to the control group of Ss on only six cards (2, 7BM, 9GF, 12M, 17GF and 18GF). Similarly, Judge II attributed a significantly higher Pathogenic Score to the experimental in contrast to the control group Ss on only four cards (7BM, 12M, 18BM and 18GF).

Finally, it should be noted that Judge I attributed a Pathogenic Score of .64 or higher to 16 experimental mothers and to only three control mothers. It would appear that, for Judge I, a Pathogenic Score of .64 is the most economical and efficient cut-off score to best

differentiate between the experimental and control mothers. Judge II attributed a Pathogenic Score of .69 or higher to 17 experimental mothers and to only two control mothers. It would appear that, for Judge II, the most economical and efficient cut-off score would be .69. It should be noted that these cut-off scores are similar to those found in Meyer's (1964) study in which the most efficient cut-off score for Judge I seemed to be .65 while the most efficient cut-off score for Judge II seemed to be .57.

An analysis of the 1200 stories, undertaken by the present writer after the Judges had completed their scoring, suggested certain very important and hopefully far-reaching refinements of the scoring system used in this study. These further refinements, devised in retrospect by the present writer, at the conclusion of the study, appear in Appendix C. Specifically, after the study had been completed the present writer, with knowledge of which mother had told a particular story and how each Judge had scored the story, reviewed each story in order to determine if certain scoring considerations could further differentiate between the two groups of mothers. It needs to be made very clear that this was an ad hoc investigation made after the research had been completed and probably involves a great deal of scorer bias.

It will be remembered that Judges I and II significantly differentiated between only five and three pairs of mothers respectively. Furthermore, there was considerable

overlap among the Pathogenic Scores attributed to the two groups of mothers by both Judges thereby making the use of the present scoring system at a clinical level on an individual basis rather risky.

It was the aforementioned review of each story and the Judges' scoring which led to the present writer's concept of the "tacked-on" story. Essentially, a "tacked-on" story is a story told to a TAT card in which the major portion of the story involves a Pathogenic theme but also in which the mother literally "tacks on" a Benign ending either on her own initiative or after the single comment made by E, "And what happens next in your story?" By and large, both Judges scored these stories Pathogenic, assuming that such an unsophisticated, obvious ending does not mitigate the Pathogenic theme in the story. However, it is the present writer's contention that consideration of such a naive, simple-minded ending does, in fact, help to further differentiate between the two groups of mothers.

Following are ten stories told by control mothers and scored either Pathogenic or Unscorable by Judge I and/or Judge II and subsequently re-scored Benign by the present writer.

1. This looks like a child has been playing very hard. He is completely exhausted and has fallen asleep.
(Q) So he . . . Well he wakes up and resumes playing. I . . . wait . . . I don't know. Maybe it's a child who is quite upset. He has completely given up for the time at least. It looks like he's at odds with himself or someone else. Later he gets himself composed . . . and . . . carries on like he had been.

2. It looks as if this person has had it . . . just one of those days. She seems very unhappy . . . as if she's given up and doesn't know which way to go. (Q) I don't know really. This doesn't have to happen. She can help herself. Life goes on . . . it usually does (laughs).
3. Well this little boy looks like he's been punished and sent to his room. I suppose he's been crying and now is very tired . . . just tired out. I think he goes to sleep on the floor for a while but he wakes and goes down to play. I think that by that time everything will be alright.
4. Another sad one. It looks like she has just seen an accident . . . maybe someone close to her and she's crying very bitterly. Maybe they're dead. I don't know . . . she seems very sad. (Q) Well she can't go on like that . . . she goes away . . . maybe with a relative and begins to feel better.
5. This is a mother and son. And the son had just told the mother that he wants to get married. Now the son is the only support of the mother and she is quite attached to him. And the son wants to get married and the mother isn't too pleased with the girl he has chosen. I don't know if it would be a difference in religion or nationality or just what, but the mother, in fact . . . the mother wouldn't like any girl the boy chose. But from the expression on the mother's face I think she will accept it in time but it will take her quite a time to accept that her son is going to leave her and that she will be alone. But eventually grandchildren will come along and she will accept the daughter-in-law.
6. Well this looks like a young man talking to his mother. Maybe he's just told her that he's going to get married or something and . . . She doesn't look like she's too happy. But he looks kind of troubled. Maybe he feels he's just hurt his mother. She looks like she's just turned away from him. So . . . I imagine he's probably trying to think of what to say next . . . like he's just kind of troubled. Maybe he just wants to say the right thing . . . and . . . that's about all (Q) Well . . . they might talk it over and maybe he might compromise and she'll compromise and they'll work something out . . . and live happily ever after (laughs).

7. That's a mother and son and the father has just died. The mother's reaction is quite different than . . . the mother accepts that as a part of life but the son is still questioning why. (Q) The boy will be alright . . . a questioning look on his face but he is the type that . . . he'll find the right answer as to why his father died.
8. This is a husband and wife and the husband has just said in another two months we have to move to California and the wife is quite surprised because she didn't realize this was going to happen. And she doesn't quite know what to think about it at the moment. It's such a shock to her. But I think within time, give her a couple of weeks, and explain it to the children and she'll say it's a good move because it will further him in his own business.
9. This is awful. They all seem to be awful. He's told her something to upset her or arouse her and he seemed to scare her. But . . . I don't know . . . she should be more scared. He's just told her something quite shocking maybe. (Q) Well I think it bothers her for a time but . . . but I think . . . Well I'm not sure . . . but it will be alright. I imagine at the time it sounded shocking but when they talk it over it will be OK.
10. This looks like a mother trying to explain something to her daughter. Once again there's a far-away look in her eyes . . . not much of a response. She's wandering off and not paying much attention to what mother is saying. She's probably hearing . . . not complete indifference . . . but kind of a melancholia. (Q) I would think that she would probably turn to mother after all.

It should be noted that some of these stories involve help from another person, but some also imply that the dependent person helps himself. It is the present writer's contention, however, that if S allows help of any kind to occur to the dependent individual in her story produced to a TAT card, this implies a basic trust in the

world which would be contrary to the view of the world attributed to the schizophrenogenic mother in this study.

A particular kind of "tacked-on" story will be referred to as the "escape" story by the present writer. Here, a pathological situation is presented to the dependent individual in the story and demands are made of him but S allows him to escape and later be reconciled with the seemingly pathological individual in the story. Again, it is the present writer's contention that if S can allow the dependent individual to escape the pathological situation and not be subsequently harmed, this too implies a basic trust in the world which would be again contrary to the view attributed to the schizophrenogenic mother in this study.

Following are five stories told by control mothers and scored either Pathogenic or Unscorable by Judge I and/or Judge II but subsequently re-scored Benign by the present writer because these were seen as "escape" stories.

1. Seems to be a son and a mother. Perhaps he's told her that he's going to get married . . . and she's saying who is going to visit me. And he seems to have his mind made up that he's going to get married. She's saying that you don't care anything about me. It leaves him in a quandary as to what to do. (Q) I think he decides to go ahead and get married and brings his wife to visit his mother.
2. This looks like a little old lady and her son and they seem to be in a hospital room. Something seems to be wrong . . . or they could be having a fight (laughs). (Q) They're waiting for something. If it's a misunderstanding I don't know if he's

grown up enough to leave her alone. Or maybe they're waiting for some news. I don't know what the outcome would be. I guess it's a misunderstanding and he has his hat in his hand . . . like he intends to go right back out. I think he's old enough to know that it's better off not to try to argue right away and he decides to go off and his mother tries to cool off. Later on will be time enough to take care of the misunderstanding. And they do eventually (laughs).

3. This is a mother and a son and they're grieved over some happening. They don't seem to be much comfort to each other though. Possibly later they find their own comfort . . . with someone else. They each find their own help I mean. Or, maybe later they come to learn to comfort one another. (Q) Well the son goes away but after a time he has second feelings. . . he was never really hostile but he didn't have a very good feeling either. Well anyway he eventually has a change of heart and they patch things up.
4. This looks like a mother and son. It looks as if he still has his hat and coat . . . he just stopped by to tell her something. Maybe he has to get a job in a distant town and he stopped by to say goodbye. He waited so long before telling his mother because he anticipated this reaction. Well she's hurt and angry but he goes away anyway. Later, when he invites her to his new home for a vacation she forgives him.
5. I think he's trying to talk her into something. She looks frightened . . . but I can't tell about what. (Q) If it is . . . She might try to get away. But I think he hurts her and he's found by the police . . . no . . . I think she escapes and she calls the police.

A number of further refinements are listed in Appendix C, some of which will be discussed in greater detail below. Tables 4 and 5 in Appendix D indicate the results the present writer found if those changes in re-scoring which were mentioned above and which will be further described below were incorporated into the original results

for Judges I and II. For example, Table 4 indicates the Pathogenic Scores which might have been attributed to the experimental and control Ss by Judges I and II respectively if they had incorporated the present writer's new scoring criteria into their scoring. In addition, Table 5 indicates the Pathogenic Scores which might have been attributed to the TAT cards if the new scoring system had been used by Judges I and II.

It will be remembered that, under the scoring system used in this study, Judge I and Judge II were able to significantly differentiate between only five and three pairs of mothers respectively. However, under the new scoring system, Judge I might have been able to significantly differentiate between 15 pairs of mothers. By the same token, Judge II might have been able to significantly differentiate between 13 pairs of mothers.

Similarly, it will be remembered that Judges I and II were able to significantly differentiate between the experimental and control groups' stories to only six and four TAT cards respectively. However, under the new scoring system, Judge I might have been able to significantly differentiate between the two groups' stories to 15 cards (1, 2, 3BM, 4, 6BM, 7GF, 8BM, 9GF, 12F, 12M, 13G, 13MF, 17GF and 18GF). By the same token Judge II might have been able to significantly differentiate between the two groups' stories to 13 cards (1, 2, 3BM, 6BM, 7BM, 8BM, 9GF, 12M, 13B, 13MF, 17GF, 18BM and 18GF).

A number of other themes, listed in Appendix C, helped the present writer to further refine the scoring system used in this study. For example, both Judges I and II usually scored themes of impotence (e.g., inability to play the violin), helplessness, loneliness and boredom as intrapsychic themes and thereby unscorable within the present scoring system. However, the present writer found that these themes appeared much more frequently in the stories of the experimental Ss in contrast to the control Ss and re-scoring these as Pathogenic even with no other person involved in the story contributed greatly to the further differentiation between the two groups of mothers illustrated in Tables 4 and 5 in Appendix D. The present writer's contention, in these cases, is that these themes are not merely intrapsychic but, rather, imply a basically impoverished relationship with the environment so that, essentially, the world is seen as cold and un giving which is the view of the world attributed to the schizophrenogenic mother in this study.

Further refinements were made by the present writer and are reflected in the data in Tables 4 and 5 in Appendix D. On card 2, for example, if the theme involves the young girl's going away to school to be educated even though this is against her mother's wishes and the conflict is never resolved, and this story is scored Benign rather than Pathogenic, a much finer distinction can be made between

experimental and control mothers. Essentially this seems to be a Benign theme of the "escape" theme which the majority of the schizophrenogenic mothers do not give. Instead, they usually allow the conflict to remain unresolved by having the girl remain on the farm.

Interestingly, on card 4, both experimental and control mothers often told stories involving a man and his mistress. In almost every case, for both groups, the man is perceived as leaving his mistress but, by and large, only control mothers perceived him as returning to his wife. Both Judge I and Judge II scored this theme Pathogenic, but re-scoring this theme as Benign led to a sharper differentiation between experimental and control Ss on this card. It may be that, on card 4, the experimental mothers may have identified with the mistress and perceived the man as simply leaving while the control mothers may have identified with the absent wife and, therefore, the man's returning home could be seen as meeting the needs of the person to whom it is felt he has a greater obligation.

On card 8BM, while eight control mothers told stories involving the boy's becoming a doctor, only one experimental mother did so. Although both Judge I and II assumed these stories to be intrapsychic because no one else was involved in the boy's success, and therefore scored these stories Unscorable, the present writer found much greater differentiation between experimental and

control Ss on this card if these stories were scored Benign. Again, it is the present writer's contention that success implies a basic trust in the world and is not merely intrapsychic.

On card 13B, both Judge I and Judge II scored most stories produced to this card Unscorable since usually no one else beside the boy in the barn door was mentioned. However, if all those stories in which the boy "finds something to do" are scored Benign and all those stories in which it is stated that the boy "has nothing to do" are scored Pathogenic, then card 13B would have significantly differentiated between the two groups of mothers although it did not do so under the scoring system used in this study. The reasoning here is that "finding something to do" in contrast to "having nothing to do" again implies having a positive relationship with the world.

In summary, under the new scoring system, found in Appendix C, Judge I might have significantly differentiated between 15 pairs of mothers instead of five and Judge II might have significantly differentiated between 13 pairs of mothers instead of three. In addition, Judge I might have been able to significantly differentiate between the experimental and control groups of mothers on 15 TAT cards instead of on six cards and, likewise, Judge II might have been able to significantly differentiate between the experimental and control groups of mothers on 13 TAT cards instead

of on four cards. Finally, it will be remembered that Judge I attributed a Pathogenic Score of .64 or higher to 16 experimental mothers and to those control mothers. It seemed that, for Judge I, a Pathogenic Score of .64 was the most efficient cut-off score for best differentiating between experimental and control mothers. Judge II attributed a Pathogenic Score of .69 or higher to 17 experimental mothers and to two control mothers. It appeared that, for Judge II, the most efficient cut-off score in order to best differentiate between the experimental and control mothers was .69.

However, under the new criteria, Judge I might have attributed a Pathogenic Score of below .50 to only two experimental mothers and a Pathogenic Score of above .50 to only one control mother. Likewise, Judge II might have attributed a Pathogenic Score of below .50 to only one experimental mother and a Pathogenic Score of above .50 to only two control mothers.

Earlier, the present writer had suggested that what often seems to differentiate the stories told by the control mothers from the stories told by experimental mothers is not so much the amount of pathology or number of conflict themes in the two sets of stories as it is the strategy employed by the control mothers in dealing with the pathology and conflicts they express in their stories.

It might be argued that the "tacked-on" story and the "escape" story are examples of a defensive strategy. The motive for the defensive strategy might be seen as either the ego's response to the possibility of repressed hostile impulses breaking through, in a Freudian model, or the sudden realization that S is in a socially evaluative situation, in a psycho-social model. While the notion of defense would seem to account for some of the "tacked-on" and "escape" stories, it is the present writer's opinion that the concept of defense does not account for the sharp differences between experimental and control mothers on themes such as loneliness, impotence, and the feeling of impending doom.

Instead, it would seem that the control mother differs from the experimental mother in this study in her attitude toward pathology and conflict rather than in the nature or amount of conflict each reflects in her stories. The experimental mother, by and large, seems to see the world as a cold and ungiving place where, and this is most important, conflicts are only rarely resolved. On the other hand, the control mother in this study seems able to fit conflict into a different scheme whereby some resolution, for the majority's good, can be reached. It is probably this relatively optimistic view of the world, in contrast to the experimental mother's relatively pessimistic view of the world, which allows the control mother to add a "tacked-on" or "escape" ending.

Certainly a number of theoretical models can be used to explain the above but, regardless of personal preference, the present writer feels that the overwhelming tone of the control mothers' stories, in contrast to the experimental mothers' stories, suggests that the notion of defense is not broad enough to explain the differences between the two sets of stories and that, instead, an explanation involving basic trust on the part of the control mothers would seem to be more adequate.

The present writer has suggested that the schizophrenogenic mother is as much a victim in her world as her schizophrenic child. There is no doubt that the schizophrenic child can be treated apart from the rest of his family and there may be times when this would seem to be the most appropriate course to follow. However, a number of considerations would seem to suggest that, as far as possible, the entire family become involved in the treatment. It would seem apparent that for every schizophrenic child there is a schizophrenogenic family. This means that, to one degree or another, all members of the family are suffering and, furthermore, that possibly if the schizophrenic child, or identified patient, is removed from the family, another child will be chosen in his place. Family therapy would, in this instance, both offer help to all persons in the family and serve a prophylactic purpose.

Family psychotherapy might also serve additional purposes. For one thing, the father would be involved and research cited above would suggest that the father who is emotionally present seems to serve a positive function within the family.

Regardless of the kind of psychotherapy utilized, some issues need be emphasized in the treatment of the schizophrenic and/or his family. The first is the difference between inside and outside or phantasy and reality. One of the most fundamental tasks for the therapist in treating the schizophrenic and/or his family would seem to be to teach the patients to understand what part of their perceptions is made up of sensations from the outside (the real world) and what part is made up of sensations from the inside (feelings). It is the present writer's experience that, regardless of the dynamic causes of losing this discriminating ability, it must be relearned.

A second very important issue would seem to be the feeling of impotence that both schizophrenogenic mother and schizophrenic child seem to feel. Here, it is the present writer's experience that the therapist has to work most diligently to provide ways for the patient to realize his effectiveness in interpersonal interactions.

The present writer has suggested some therapeutic implications which might seem pertinent as a result of the present study. However, these are merely implications, somewhat removed from the data, and certainly need further research.

SUMMARY

The schizophrenogenic mother is seen by several authors as the primary agent in schizophrenia, either in a causal or phenomenal manner. Previous studies have attempted to assess the concept of the schizophrenogenic mother through interview techniques and/or data from psychotherapy. However, control groups have generally not been used and there has been little or no attempt to quantify results. Other studies have used objective psychological test data and/or attitude scaling techniques but these techniques make it difficult to differentiate between real and professed attitudes and do not enable us to readily see the relationship between attitudes and behavior.

This study employs the TAT, assuming that the schizophrenogenesis will be projected into the stories. The first hypothesis is that mothers of schizophrenics, more than mothers of normals, will give TAT themes where the dominant individual will either refuse to meet the needs of the dependent person or take from the dependent person whenever their needs conflict. The second hypothesis to be tested is that the differentiation of mothers of schizophrenics from the mothers of normal Ss is communicable.

Twenty mothers of schizophrenics and twenty mothers of normals were administered the entire TAT sequence with the exception of card XVI. Children were matched on the basis of sex, age, level of education, number of children in the family and the child's chronological position among his siblings. In addition, the mothers of the two groups of children were matched on age, level of education and social class.

Each individual story was judged as Pathogenic, Unscorable or Benign by a judge clinically sophisticated in this area and the criteria used were given to a second judge who attempted to make the same categorizations. A score was then tabulated for each S from the formula: Pathogenic/Pathogenic + Benign.

The results led to the following conclusions:

1. Mothers of schizophrenics can be significantly differentiated from mothers of normals by means of the TAT.
2. Criteria for classification as pathogenic, or benign can be communicated as well as formulated.
3. Support for the schizophrenogenic mother concept, whether as a cause or reaction, is indicated.

A discussion of the research, both from the point of view of Ss and the relative sensitivity of TAT cards is given as well as some refinements of the scoring system and suggestions for the treatment of the schizophrenic and/or his family.

REFERENCES

- Arieti, S. Some aspects of the psychopathology of schizophrenia. Amer. J. Psychother., 1954, 8, 396-414.
- _____. Interpretation of Schizophrenia. New York: Robert Brunner & Co., 1955.
- Balken, E. R. A delineation of schizophrenic language and thought in a test of imagination. J. Psychol., 1943, 16, 239-271.
- _____. and Masserman, J. H. The language of fantasy: III. The language of the phantasies of patients with conversion hysteria, anxiety states and obsessive-compulsive neuroses. J. Psychol., 1940, 10, 75-86.
- Bateson, G. The group dynamics of schizophrenia. In L. Appleby, et al. (Eds.) Chronic Schizophrenia. Illinois: The Free Press of Glencoe, 1955.
- Bellak, L. Schizophrenia. New York: Logos Press, 1958.
- Bender, L. Twenty years of clinical research on schizophrenic children with special reference to those under six years of age. In G. Caplan, (Ed.) Emotional problems of early childhood. New York: Basic Books, Inc., 1955.
- _____. Schizophrenia in childhood: its recognition, description and treatment. Amer. J. Orthopsychiat., 1956, 26, 499-506.
- Bergman, P. and Escalona, A. Unusual sensitivities in very young children. In The psychoanalytic study of the child: Vols. 3-4. New York: International Universities Press, 1949.
- Bettelheim, B. Schizophrenia as a reaction to extreme situations. Amer. J. Orthopsychiat., 1956, 26, 507-518.
- Bleuler, E. Dementia praecox, or the group of schizophrenias. New York: International Universities Press, 1952.

- Block, J., et al. Psychiatrists' conceptions of the schizophrenogenic parent. Arch. Neurol. Psychiatry, 1958, 79, 448-459.
- Chapman, L. J. Confusion of figurative and literal usages of words by schizophrenic and brain-damaged patients. J. abnorm. soc. Psychol., 1960, 60, 412-416.
- Clarke, A. Conformity behavior of schizophrenic subjects with maternal figures. J. abnorm. soc. Psychol., 1964, 68, 45-63.
- Dana, R. H. Clinical diagnosis and objective TAT scoring. J. abnorm. soc. Psychol., 1955, 50, 19-24.
- . Cross validation of objective TAT scoring. J. Consult. Psychol., 1956, 20, 29-32.
- Davison, H. A. A comparison of the fantasy productions on the Thematic Apperception Test of sixty hospitalized psychoneurotic and psychotic patients. J. Proj. Tech., 1953, 17, 20-33.
- Despert, J. Prophylactic aspects of schizophrenia in childhood. Nerv. Child, 1942, 1, 199-231.
- Divorin, J. and Wyant, D. Authoritarian patterns in the mothers of schizophrenics. J. Clin. Psychol., 1957, 13, 332-338.
- Eickhoff, L. G. The aetiology of schizophrenia in childhood. J. ment. sci., 1955, 101, 399-404.
- Ekstein, R., et al. Childhood schizophrenia and allied conditions. In L. Bellak (Ed.) Schizophrenia. New York: Logos Press, 1958.
- Elkisch, P. Simultaneous treatment of a child and his mother. Amer. J. Psychother., 1953, 7, 105-121.
- Eron, L. D. A normative study of the TAT. Psychol. Monogr., 1950, 64, 1-48.
- Fabian, A. and Holden, M. A. Treatment of childhood schizophrenia in a child guidance clinic. Amer. J. Orthopsychiat., 1951, 21, 571-583.
- Fairbairn, R. W. An object-relations theory of personality. New York: Basic Books, Inc., 1954.

- Federn, P. Ego psychology and the psychoses. New York: Basic Books, Inc., 1952.
- Fine, R. A scoring scheme for the TAT and other verbal projective techniques. J. Proj. Tech., 1955, 19, 306-309.
- Flavell, J. H. Some observations on schizophrenic thinking: etiology and onset. Canad. J. Psychol., 1957, 11, 128-132.
- Freeman, R. and Grayson, H. M. Maternal attitudes in schizophrenia. J. abnorm. soc. Psychol., 1955, 50, 45-52.
- Freud, S. On narcissism, an introduction. In Collected Papers, Vol. IV. London: Hogarth Press, Ltd., 1925.
- _____. New introductory lectures in psychoanalysis. New York: W. W. Norton & Co., 1945.
- Fromm-Reichmann, F. Notes on the development of treatment of schizophrenia by psychoanalytic psychotherapy. Psychiatry, 1948, 11, 263-273.
- _____. Principles of intensive psychotherapy. Chicago: Univ. of Chicago Press, 1960.
- Garnezy, N., et al. Child rearing attitudes of mothers and fathers as reported by schizophrenic and normal patients. J. abnorm. soc. Psychol., 1961, 63, 176-182.
- Gerard, G. L. and Siegal, J. The family background of schizophrenia. Psychiat. Quart., 1950, 24, 47-73.
- Giffen, Mary, et al. Specific factors determining anti-social acting out. Am. J. Orthopsychiat., 1954, 24, 668-684.
- Goldman, R. and Greenblatt, M. Changes in Thematic Apperception stories paralleling changes in clinical status of schizophrenic patients. J. nerv. ment. Dis., 1955, 121, 243-249.
- Goldstein, A. P. and Carr, A. C. The attitudes of the mothers of male catatonics and paranoid schizophrenics toward child behavior. J. Consult. Psychol., 1956, 20, 190-121.
- Guntrip, H. Personality structure and human interaction. London: The Hogarth Press, Ltd., 1961.

- Gurevitz, S. The parents of the schizophrenic child. Psychoanal., 1954, 3, 36-40.
- Hays, W. L. Statistics for Psychologists. New York: Holt, Rinehart and Winston, 1963.
- Heilburn, A. B., Jr. Perception of maternal child rearing attitudes in schizophrenics. J. Consult. Psychol., 1960, 24, 169-173.
- Henry, W. The analysis of fantasy: The Thematic Apperception Technique in the study of personality. New York: John Wiley and Sons, Inc., 1956.
- Hollingshead, A. and Redlich, F. Schizophrenia and social structure. Amer. J. Psychiat., 1954, 110, 693-701.
- Holt, R. R. Formal aspects of the TAT: a neglected response. J. Proj. Tech., 1958, 22, 163-172.
- Jackson, D. A note on the importance of trauma in the genesis of schizophrenia. Psychiatry, 1957, 20, 181-184.
- _____. The etiology of schizophrenia. New York: Basic Books, Inc., 1960.
- Johnson, A., et al. The genesis of anti-social acting out in children and adults. Psychoanalyt. Quart., 1952, 14, 253-298.
- _____. et al. The signnificance of exogenous traumata in the genesis of schizophrenia. Psychiatry, 1956, 19, 137-147.
- Kallman, F. The genetic theory of schizophrenia. Amer. J. Psychiat., 1946, 103, 309-322.
- _____. Heredity in health and mental disorders. New York: W. W. Norton & Co., 1953.
- Kanner, L. Problems of nosology and psychodynamics of early infantile autism. Amer. J. Orthopsychiat., 1949, 19, 416-4261.
- Kaplan, B. The inner world of mental illness. New York: Grove Press, Inc., 1964.
- Karon, B. P. A clinical note on the specific nature of an oral trauma. J. abnorm. soc. Psychol., 1960, 61, 480-481.

- Karon, B. P. The resolution of acute schizophrenic reactions: a contribution to the development of non-classical psychotherapeutic techniques. Psychotherapy, 1963, 1, 27-43.
- _____. An experimental study of parental castration phantasies in schizophrenia. Brit. J. Psychiat., 1964, 110, 67-73.
- _____. and Rosberg, J. A study of the mother-child relationship in a case of paranoid schizophrenia. Amer. J. Psychother., 1958 (a), 12, 522-533.
- _____. and Rosberg, J. The homosexual urges in schizophrenia. Psychoanal. and Psychoanal. Rev., 1958, (b), 45, 50-56.
- Kasanin, J., et al. The parent-child relationship in schizophrenia. J. nerv. ment. Dis., 1934, 79, 249-263.
- Kaufman, I., et al. Childhood psychosis: 1. Childhood schizophrenia: Treatment of children and parents. Am. J. Orthopsychiat., 1957, 27, 683-690.
- Klein, Melanie. Developments in psychoanalysis. London: The Hogarth Press, Ltd., 1952.
- _____. Envy and gratitude. New York: Basic Books, Inc., 1957.
- Kohn. M. & Clausen. J. Parental authority behavior and schizophrenia. Amer. J. Orthopsychiat., 1956, 26, 297-313.
- Lane, W. W. Familial attitudes of paranoid schizophrenics and normal individuals of different socio-economic levels. Dissert. Abst., 1955, 15, 1440.
- Lidz, R. W. and Lidz, T. The family environment of schizophrenic patients. Amer. J. Psychiat., 1949, 106, 332-345.
- Lindzey, G. An experimental examination of the scapegoat theory of prejudice. J. abnorm. soc. Psychol., 1950, 45, 296-309.
- _____. G. Thematic Apperception Test: interpretive assumptions and related empirical evidence. Psych. Bull., 1952, 49, 1-25.

- Lindzey, G. and Silverman, M. Thematic Apperception Test: techniques of group administration, sex differences and the role of verbal productivity. J. Pers., 1959, 27, 311-323.
- Lu, Yi-Chuang. Contradictory parental expectations in schizophrenia. Arch Gen. Psychiat., 1962, 6, 219-234.
- Mahler, M., et al. Clinical studies in benign and malignant cases of childhood psychoses (schizophrenic-like). Am. J. Orthopsychiat., 1949, 19, 295-305.
- Mark, J. The attitudes of the mothers of male schizophrenic patients. J. abnorm. soc. Psychol., 1953, 48, 185-189.
- Mayman, M. and Kutner, B. Reliability in analyzing Thematic Apperception Test stories. J. abnorm. soc. Psychol., 1947, 42, 365-368.
- McGhie, A. A comparative study of the mother-child relationship in schizophrenia: I. The interview. Brit. J. Med. Psychol., 1961, 34, 195-208.
- . A comparative study of the mother-child relationship in schizophrenia: II. psychological testing. Brit. J. Med. Psychol., 1961, 34, 209-221.
- Meyer, R. "A study of the schizophrenogenic mother concept by means of the TAT." Unpublished Master's Thesis, Michigan State University, 1964.
- Meyers, D. I. and Goldfarb, W. Studies of perplexity in mothers of schizophrenic children. Amer. J. Orthopsychiat., 1961, 31, 551-564.
- Murstein, B. I. Theory and research in projective techniques (emphasizing the TAT). New York: John Wiley and Sons, Inc., 1963.
- Nunberg, H. Principles of psychoanalysis. New York: International Universities Press, Inc., 1955.
- Phillips, L. Case studies of two schizophrenic patients. J. Proj. Tech., 1951, 15, 355-370.
- Piotrowski, Z. A. The Thematic Apperception Test of a schizophrenic interpreted according to new rules. Psychoanal. Rev., 1952, 39, 230-251.

- Powdermaker, Florence. Concepts found useful in the treatment of schizoid and ambulatory schizophrenic patients. Psychiatry, 1952, 15, 61-71.
- Prout, C. T. and White, A. A. A controlled study of personality relationships in mothers of schizophrenic male patients. Amer. J. Psychiat., 1950, 107, 251-256.
- Rabinovitch, R. Observations on the differential study of severely disturbed children. Round Table, 1951. Amer. J. Orthopsychiat., 1952, 22, 230-236.
- Reichard, Suzanne and Tillman, C. Patterns of parent-child relationships in schizophrenia. Psychiatry, 1950, 247-257.
- Renaud, H. Group differences in fantasies: head injuries, psychoneurotics and brain diseases. J. Psychol., 1946, 21, 327-346.
- Ritter, A. M. and Eron, L. D. The use of the TAT of differentiate normal from abnormal groups. J. abnorm. soc. Psychol., 1952, 47, 147-158.
- Rosberg, J. and Karon, B. P. The oedipus complex in a case of a deteriorated schizophrenic. J. abnorm. soc. Psychol., 1958, 57, 221-225.
- Rosen, J. The treatment of schizophrenic psychosis by direct analytic therapy. Psychiat. Quart., 1947, 21, 3-37.
- _____. Direct analysis. New York: Grune and Stratton, Inc., 1953.
- Ross, A. The schizophrenic child and his mother. J. abnorm. soc. Psychol., 1955, 51, 113-139.
- Rotter, J. B. Thematic Apperception Test: suggestions for administration and interpretation. J. Pers., 1946, 15, 70-92.
- Searles, H. F. Positive feelings in the relationship between the schizophrenic and his mother. Inter. J. Psycho-Anal., 1958, 39, 569-586.
- Shepherd, Irma and Guthrie, G. M. Attitudes of mothers of schizophrenic patients. J. Clin. Psychol., 1959, 15, 212-215.

- Silverberg, W. Childhood experience and personal destiny. New York: Springer Press, 1952.
- Stierlin, H. The adaptation of the "stronger" person's reality: some aspects of the symbiotic relationship of the schizophrenic. Psychiatry, 1959, 22, 143-152.
- Sullivan, H. S. Therapeutic investigations in schizophrenia. Psychiatry, 1947, 10, 121-133.
- _____. Clinical studies in psychiatry. New York: W. W. Norton and Co., 1956.
- Szurek, S. Psychotic episodes and psychotic maldevelopment. Amer. J. Orthopsychiat., 1956, 26, 519-543.
- Tietze, Trude. A study of mothers of schizophrenic patients. Psychiatry, 1949, 12, 55-65.
- Tomkins, S. The Thematic Apperception Test. New York: Gruen and Straton, Inc., 1947.
- Wahl, C. Some antecedent factors in the family histories of 392 schizophrenics. Amer. J. Psychiat., 1954, 110, 668-676.
- Wainwright, W. M. The reaction of mothers to improvement in their schizophrenic daughters. Comprehen. Psychiat., 1960, 1, 236-243.
- Walker, H. M. and Lev, J. Statistical Inference. New York: Holt, Rinehart and Winston, 1953.
- Webb, W. B. and Hilden, A. H. Verbal and intellectual ability as factors in projective test results. J. Proj. Tech., 1953, 17, 102-103.
- Wynne, L., et al. Pseudomutuality in the family relationships of schizophrenics. Psychiatry, 1958, 21, 205-220.

APPENDIX A

General Criterion.--This involves an interaction between a dominant and a dependent individual with conflicting needs, and the dominant individual takes the dependent individual's needs into account (benign); or does not take the dependent individual's needs into account (pathogenic).

Pathogenic themes

1. Murder.
2. Boss driving worker hard.
3. Parents make boy study or practise when he doesn't want to.
4. Mother supposedly being kind, but not meeting expressed needs of child.
5. Mother showing particularity for one daughter over another.
6. Any kind of talking-to as a form of punishment.
7. Mother warning child of all the things that can happen to him when he grows up.
8. Mother telling child he hasn't worked up to ability.
9. Subordinate who gives someone heck and loses job.
10. Husband gives wife news he is leaving town (or her).
11. Spying on girl friend or being stood up.
12. Monster ready to attack smaller animal (animal=person).

13. Man telling wife something to hurt her, e.g., took secretary to dinner.
14. Happy old witch and pretty younger woman.
15. Mother reading child from Bible to teach her a lesson.
16. Woman and evil conscience; devil behind her; etc.
17. Mother feels what she has said to daughter hasn't done much good.
18. Husband interrupts TV show wife is interested in.
19. Nasty remarks to a subordinate, making her unhappy.
20. King leading nation to ruin.
21. Mother doesn't like daughter's (looks, make-up, attitude, etc.) even though daughter likes it.
22. Refusal of marriage bid; he's interested, she's not; etc.
23. Mother checking up on son (study, etc.).
24. Destructive witch themes.
25. Family "ruled" or "dominated."
26. Husband or father jealous or forbidding.
27. Woman harming child by punishment.
28. Suicide attempt to frighten someone.
29. Man pulling out of extra-marital affair, and she doesn't want him to.
30. Losing interest in playing the violin.
31. Going to the cemetery to scare people.

Neutral themes

1. No interaction between two people, though somewhat conflicting needs.
2. One person enjoying himself.
3. No people or living things.
4. Two people; but no indication of interaction.
5. Conflict with person's own needs, not other people's.
6. Thinking about a mother who was kind to her.
7. Wanting to join a dead person--an intrapsychic problem.

Benign themes

1. Parents force child to do something (study); he is unhappy and they change.
2. Teacher consoling a problem child; helping a gifted child.
3. Guides leading animals (llamas) across difficult area.
4. Reunion of two people--both people pleased.
5. Person springing a pleasant surprise on another one.
6. Parent interrupts punishment by another one.
7. Stopping children from activity in which they would be likely to get hurt.
8. Woman trying to console man in trouble.
9. Father and daughter consoling each other after death of mother.
10. Helping people at a disaster.
11. Son or daughter interested in advice from parent.
12. Woman working hard for benefit of her children.
13. Mother thinking about children, and is happy.

14. Accepted proposal or protestation of love, or evidence of mutual love.
15. Mother admiring work of children or making something they will like.
16. Man heeds woman's wish not to leave.
17. Any attempt to help with no ulterior motive; (or comfort).
18. Prevention of disaster (suicide, murder, etc.).
19. Mother enlightening child about the birds and the bees.

APPENDIX B

Pathogenic themes

1. Exploitation.
2. Talking down to son.
3. Evil man praying to God for forgiveness but not forgiven.
4. Alligator poisonous and kills.
5. Mother putting child out for adoption.
6. Boy shoots father for beating mother.
7. Hypnotizing in order to harm.
8. Drunk mother; boy wants to help but doesn't know what to do.
9. Parents lecture and frighten child to be good.
10. Wife rejects husband.
11. Separated, leads to suicide.
12. Minister prays but doesn't help.
13. Surgery without anesthesia and without emphasis on helping.
14. Mother doesn't approve of education of daughter and father doesn't have time for anything but work.
15. Woman rejected or shut out.
16. Scared to call police because they'll think he did it.
17. Wife pulling husband's hair.
18. Implication that surgery is doing harm to the patient.
19. Unhappy over taking care of an unborn child.

20. Child must solve family's problems (presumably because adults don't).
21. A monster waiting for you in the dark.
22. Conflict and there is change in the benign direction but the change occurs only after the passage of time.
23. "No one cares for her."
24. Dungen themes.
25. Slave and boss themes.
26. Doctor or policeman telling man bad news.
27. One person did something wrong and another person will go back and tell.
28. Boss trying to get person to do something he doesn't what to do.
29. Father molests daughter.
30. Ghost laughing at you.
31. Evil influence claiming a soul.
32. Quack doctor or hypnotist.
33. Mother telling daughter she is too old for dolls.
34. Mother running away from children.
35. Child sure of parents' needs but parents not sure of child's needs.

Neutral themes

1. Thinking about playing the violin.
2. Being a doctor or becoming a doctor without mentioning helping anybody.
3. Performer performing without mentioning the audience.
4. Insufficient detail.
5. Lonliness, unless other persons are more directly involved.

Benign themes

1. Son is worried and father helps him make a decision but won't make it for him.
2. Teacher happy with her children.
3. Woman looking forward to the work of taking care of an infant (or a family).
4. Older couple fond of each other.
5. A mother, even though it reflects on her, seeking help for her child at the Child Guidance Clinic.
6. Father giving approval to son.
7. Performer making audience happy or audience making performer happy.
8. Priest gives last rites to man and man feels relieved (although man may still die).
9. Children married or graduated from college and parents embracing each other and saying what a good job they have done.
10. Becoming a surgeon (or missionary) to help people.
11. Wife bringing lunch to husband (although she must wait until his work is finished).
12. Family picnic that's fun.
13. Preparing dinner for family.
14. Husband wants to help; wife restrains him for his own good but husband goes anyway and helps.
15. Child asks for help with the presumption that he'll get it.
16. Someone is hurt or frightened by someone and someone else then offers help where the aggressor is not the hero of the story.

APPENDIX C

Pathogenic themes

1. Impotence as a theme where the hero "can't or is "bored."
2. "Ignoring" or having "no interest" where it's specifically stated.
3. "Dependency" specifically stated.
4. "Loneliness" whether another person is involved or not.
5. Man leaves a woman and this is end of the story.
6. Something is missing and the woman doesn't find it.
7. "Escape" story with no attempt at reconciliation. Boy simply leaves mother; no reconciliation or mention of personal growth.
8. Specifically stating a wish for a better life without mentioning any possibility of its being attained.
9. Specifically stating that there is "nothing between" two characters.
10. Not reaching goal specifically stated.
11. Thinking about suicide with no mention of the possibility of help.

Benign themes

1. "Tack on ending" mitigates previous pathogenic themes.
2. "Escape" story with subsequent reconciliation, or personal growth.
3. Person able to help self although others do not.

4. Man leaves mistress and returns to wife.
5. Boy becomes successful doctor by his own efforts and without mention of anyone helping him, or his helping anyone.
6. "Finding something to do" specifically stated.
7. Getting to the top and having a good feeling although no one else may be in the story.
8. Wife dies and is specifically stated that husband and children "carry on."
9. Boy is happy about prospects of going to camp or taking a trip although no one else is mentioned in the story.
10. Person feels good after looking out window although no one else is mentioned in the story; but must feel good as a result of looking out the window.

APPENDIX D

Table 4.--Pathogenic scores attributed to individual experimental and control subjects under new scoring system

<u>S</u>	<u>Judge I</u>		<u>Judge II</u>	
	Experimental Subjects	Control Subjects	Experimental Subjects	Control Subjects
1	.60	.20	.67	.27
2	.80	.40	.90	.48
3	.83	.48	.77	.63
4	.55	.29	.63	.25
5	.71	.50	.79	.41
6	.41	.26	.48	.29
7	.72	.31	.70	.21
8	.67	.18	.75	.21
9	.43	.14	.56	.13
10	.71	.38	.76	.45
11	.78	.41	.76	.50
12	.81	.63	.86	.72
13	.59	.48	.71	.39
14	.65	.22	.67	.28
15	.56	.16	.62	.17
16	.70	.14	.71	.17
17	.73	.17	.85	.28
18	.71	.16	.73	.17
19	.54	.26	.67	.28
20	.85	.19	.88	.28

Table 5.--Pathogenic scores calculated for each TAT under
new scoring system

Card	Judge I		Judge II	
	Experimental Subjects	Control Subjects	Experimental Subjects	Control Subjects
1	.84	.50	.93	.43
2	.61	.09	.62	.08
3BM	.85	.21	.89	.19
3GF	.64	.26	.67	.29
4	.66	.34	.67	.44
5	.78	.61	.94	.80
6BM	.82	.34	.84	.29
6GF	.39	.34	.40	.25
7BM	.62	.18	.63	.07
7GF	.67	.34	.65	.44
8BM	.66	.24	.81	.22
8GF	.65	.32	.61	.44
9BM	.50	.45	.81	.50
9GF	.72	.26	.79	.33
10	.08	.18	.06	.19
11	.83	.75	.92	.81
12BG	.19	.12	.31	.00
12F	.72	.50	.79	.53
12M	.68	.39	.93	.43
13B	.50	.21	.65	.07
13G	.50	.11	.46	.08
13MF	.82	.50	.94	.39
14	.42	.18	.36	.23
15	.82	.54	.86	.58
17BM	.46	.18	.36	.15
17GF	.91	.17	1.00	.08
18BM	.66	.47	.83	.53
18GF	.72	.18	.79	.32
19	.50	.50	.75	.17
20	.68	.50	1.00	.50

MICHIGAN STATE UNIV. LIBRARIES



31293102124900