

PERCEPTUAL REACTIONS TO THE THEMATIC  
APPERCEPTION TEST CARDS

by

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# THE CATEGORIZATION OF PERCEPTUAL REACTIONS TO THE THEMATIC APPERCEPTION TEST CARDS

## Abstract

This study deals with the initial stage of a programme of research investigating the nature of the stimulus factors in the Thematic Apperception Test. The primary function of the study was to categorize perceptual reactions to the TAT cards. A secondary aim was to compare the perceptual responses obtained from an abnormal group with those produced by a normal group in a parallel study.

Descriptions of twenty-six of the TAT cards were obtained from forty mental hospital patients. From these protocols and those of forty normal subjects, empirically derived perceptual categories were developed. The perceptual responses were then assigned to these critical categories. Several reliability studies were carried out and a number of rules governing the assignment of the responses to the categories was developed. An inter-judge reliability of 91 per cent agreement was obtained. A frequency count was then made for both the normal and abnormal groups and Chi squares were computed in order to determine whether any differences existed between the groups in the frequency of response for each category. The number of percepts contained in each response was also counted and the two groups were then statistically compared on the basis of the number of single percept responses to each card.

From a total of 216 categories, 16 significant differences were found. The cards in which these differences appeared were: 1, 2, 5, 6BM, 7BM, 8BM, 9GF, 12BG, 14, 15, 17GF, 19 and 20. In eight of these cards the abnormal group produced a larger number of responses in the descriptive category than the normal group. The two groups differed slightly regarding the number of percepts contained in each response. All but one of the cards elicited more single percept responses from the abnormal group than from the normal one. Nine of the cards showed statistically significant differences between the number of abnormal and normal subjects giving single percept responses.

By means of the statistical comparison, it was shown that the perceptual reactions of the normal and abnormal

subjects were essentially the same; certain differences, however, between the perceptual responses of the normal and abnormal groups, were suggested.

The study established that reliable perceptual categories could be developed and perceptual responses successfully categorized.

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## CHAPTER I

### THEORETICAL BACKGROUND AND STATEMENT OF THE PROBLEM

#### INTRODUCTION

In the greater part of the previous research concerning apperceptive techniques, the role of the stimulus properties of the materials has been, by and large, neglected. Some of the factors which have contributed toward this neglect are: investigator's differing approaches to the meaning of the stimulus itself, lack of adequate measures for the stimulus dimensions of thematic cards, and, finally, the failure of most workers to recognise the importance of the stimulus in fantasy story telling behaviour. However, the recent research literature is beginning to recognise the fact that the intensive study of the stimulus properties is essential if one is to understand why and how thematic tests function.

#### STATEMENT OF THE PROBLEM

This study deals with the first part of a program of research in the area of the stimulus factors in the Thematic Apperception Test. It is the immediate result of a paper entitled Theoretical and Research Reappraisal of Stimulus

Factors in the TAT, given by Kenny (1959), at a symposium dealing with the Thematic Apperception Test.

In the present research, the descriptions of the TAT cards given by 40 mental hospital patients, and 40 normal subjects were assigned into various thematic categories. Data on the normal subjects were gathered by Harvey (1960) in a parallel study. Data on the abnormal subjects were collected by the present author. These empirically derived categories, the development of which was one aim of the study, will be of further use along the lines suggested by Kenny (1959).

The primary function of the present study was to determine the main stimulus properties of each of the TAT cards, as determined by the frequency with which responses could be assigned to the thematic categories.

Another aim of the study was to examine the differences between the response frequencies of abnormal and normal subjects.

### THE MODEL

This section contains a general statement of the theoretical formulation which leads to the present study. With the specific concepts of Kenny's theoretical model in mind, it will then be possible to see how this investigation fits into his proposed program of research.

Kenny (1959) has stated two of the basic problems impeding the discovery of laws which govern behaviour

towards apperceptive techniques.

"The first involves the critical relevance of the stimulus properties of the pictures in the determination of the thematic stories. The second general problem concerns the level of personality functioning reflected in the thematic apperceptive stories."

Recognizing these problems, Kenny has developed a theoretical model centering around the conception that thematic stimuli or "changes in sensory input" are "...simulated into a schema after an hypothetical process of differentiation or categorization of the stimulus has taken place." After a schema is activated, instrumental story-telling occurs, accommodating an individual to his environment and resulting in themata. Perception of the stimuli is not a passive reception by the individual, but on the contrary, is an active process of categorizing the stimuli so that the resulting fantasy is "...the observable sequence of either an existing or reactivated latent schema (imaginative trains or sequences of thought). The categorization may be conscious, preconscious or unconscious. In the case of TAT protocols, the categorization process is assumed to be primarily preconscious, that is, it is readily available in awareness."

In this model, the categorization reaction plays a critical role. This categorizing process is the perceptual activity of attempting to identify or label the picture stimuli, for example, "the boy wishes to be a doctor." The four most important psychological variables determining the categorization reaction are assumed to be: past experience,

motivation, set, and ability. It also appears reasonable to assume that these factors will have greater effect on schema than on the categorization process. These assumptions lead to the hypothesis that "...the categorizing reaction will be more highly correlated with the stimulus properties of the picture stimuli than will be the fantasy story." If, by changing the stimulus dimensions of the picture, categorization reactions were to change, then the thematic content of the story should change in the same direction, since this theory holds that the course that the themata follows is dependent on the categorization process. In an attempt to test his model, Kenny (1959) applies the theory to the relationship between ambiguity and personality revealingness. In regard to this problem, physical ambiguity could be defined as the impoverishment of the stimuli. However, on the basis of his conceptual model, such a procedure would not ensure variations in perceptual ambiguity. Categorizing or perceptual ambiguity exists only when the stimuli elicit different categorizing reactions between individuals or different reactions within the same person at different times. Kenny (1959) has emphasized the fact that a good quantitative index of this ambiguity should take into account not only the number of alternative categories but also the proportion of cases of individuals making any given categorization. The quantitative measure of uncertainty from information theory takes into account these two dimensions of categorization.

Utilizing such an index, Kenny has suggested the following method of obtaining the categorization reactions to the picture stimuli. The first step involves having the subjects examine each TAT card for twenty seconds, and with the card before them describe what they see. Next, the card descriptions are assigned to critical thematic categories that best seem to reflect the perceptual descriptions. The third step is to provide a checklist of the main critical categories to subjects and have them check the category which they think best describes what they see in the card. The uncertainty measure is then applied to the data in order to provide a quantitative index of ambiguity for each thematic card.

Armed with an adequate index of this type, the attack on the problem concerning the relationship between ambiguity and personality revealingness should yield somewhat more fruitful results.

## CHAPTER II

### RELATED RESEARCH

Since Murray introduced his Thematic Apperception Test in 1935, its popularity as a clinical technique has grown rapidly. Only recently though, has the possibility of probing into the problem of stimulus properties of the pictures become a source of active interest. Of the comparatively few studies dealing with picture cues, the more comprehensive approaches were concerned with an attempt to determine the normative nature of projective responses to the pictures.

#### Normative Studies

One of the first studies of this kind was done by Coleman (1947), who obtained protocols from children aged 8 to 15 years. He rated the stories for level of response and emotional tone. He found the most productive pictures to be 3GF, 6BM, and 18GF, in that order and the least productive card to be 11. In order to determine the predominant emotional tone, the stories were rated "unhappy, neutral, or happy" on the basis of both plot and ending. These results are shown in Table 1, Appendix A. Coleman also found that in less than three per cent of the stories,

a happy plot developed into an unhappy ending but that forty-one per cent changed from an unhappy plot into a happy ending.

In 1947 Rosenzweig and Flemming made an empirical investigation in an attempt to establish apperceptive norms for the TAT. Their intention was to determine the common ways in which the cards are described and interpretively used by normal men and women. The themes were analyzed with the aim of ascertaining only what descriptive material the subjects as a group included in their thematic responses. The total responses for all subjects were considered statistically for each picture. These responses were then classified to determine the common, popular, or modal expressions used. Three classifications were made and applied to each card: 1. figures, 2. objects, 3. problems and outcomes.

About this same time, Eron (1950), published his extremely comprehensive monograph dealing with normative data for the TAT. This paper considers "picture pull", and points out that each individual picture has its own stimulus properties which evoke themes, identification, feelings, etc., which are peculiar to it and which differ from those elicited by other pictures. In an attempt to establish empirically that pictures differed in their stimulatory values, Eron rank-ordered the cards on the basis of the number of themes elicited by each. These rankings are



shown in Table II, Appendix A. After analyzing the stories obtained from his group of 150 individuals (including both normal and abnormal subjects), he indicates that, when interpreting a protocol, due consideration must be given to the stimulus properties of the cards themselves: these properties appear to be as influential in determining an individual's story as the actual clinical group to which he may be classified.

### Stimulus Property Studies

Following the suggestion that the stimulus properties of the individual cards themselves elicit stories of characteristic emotional tone, regardless of the clinical classification of the subjects, Eron, Terry and Callahan (1950), developed a rating scale for the emotional tone of TAT stories. This was to assist in determining the relative emotional strengths of the cards. This five point scale was empirically derived on the basis of agreements among three judges who rated 1000 stories from 25 males and 25 females. Fifty more stories were obtained and the cards were arranged on the basis of the ratings in order of sadness. The results shown in Table III, Appendix A, support Eron's previous implications regarding differences in the stimulus values of the cards.

A more recent study by Ullmann (1957) showed that his findings were in agreement with those of previous investigators. He showed that the median number of emotional

words elicited by the different TAT cards vary considerably. Table IV, Appendix A, reports his findings.

Weisskopf (1950), introduced a transcendence index as a proposed quantitative measure of projection on the TAT. To obtain the index the number of comments about a picture that go beyond pure description was counted and the transcendence index of a picture was the mean number of such comments per subject. Using only the TAT pictures with human figures, her subjects were instructed to describe the TAT cards. The results of this study show the five pictures with the highest transcendence indices to be 6BM, 7GF, 7BM, 2 and 4 and the five cards with the lowest transcendence indices to be 12M, 13G, 17GF, 20, 9BM.

Following Ullmann's previous study, Gurel and Ullmann (1958) investigated the relationship between the results obtained by ranking the cards as to the quantity of material they elicited using, first the transcendence index and then emotional word count. The results showed a positive correlation between the rankings produced by the two methods. The transcendence rankings for the male and general series of cards were, from the highest to the lowest transcendence score: 6,4,13,7,2,3,8,12,1,20,10,16,9,14,15,17,5,19,11. The rather high correlation between the two orderings found in this study is not, however, obtained in other research dealing with levels of ambiguity.

In an investigation on the degree of involvement or level of response to the TAT cards, Terry (1952), developed

an empirically-derived rating scale, to assess the level of TAT response. She used this five category composite scale to determine the mean level of response ratings and rank of each card, for both oral and written stories on the female series. The results expressed in Table V, Appendix A, showed significant differences between the cards in the average level of response elicited. It was also noted that the subjects showed consistent individual differences in level of response.

In a subsequent study, Lebo and Harrigan (1957), investigated the suggestion that the picture descriptions given by Murray in the TAT manual, if read to the subjects, would elicit responses comparable to those obtained solely from viewing the pictures themselves. The responses obtained from the two methods of presentation were compared objectively on several bases: (a) word count, (b) idea count, (c) rating scale for emotional tone, (d) level of response and amount of dynamic content. It was found that one method was not consistently superior to the other and that the responses to the verbal descriptions were more like the responses to the cards themselves than unlike them.

Two assumptions employed by clinicians using projective tests are: 1. that superficially similar responses are able to indicate traits of relatively fixed classes of the patient's behaviour and 2. that certain superficially dissimilar responses are "dynamically" related to each other.

From these, Wittenborn (1950) generated two hypotheses: the first hypothesis holds that the TAT responses which are similar to each other in regard to the classes of behaviour indicated by the responses will be significantly related to each more frequently than will an unselected group of responses; the second hypothesis claims that responses for which functional or dynamically determined complementary responses may be specified, will be significantly related to their complementary responses more often than will unselected responses. To test these hypotheses one hundred Yale undergraduates were used, and their responses were categorized on the basis of the roles commonly ascribed by them to the figures appearing in the TAT cards. The classification of these responses are shown in Table VI, Appendix A. Although there were no significant results found to support the first hypothesis, the second one proved to be more consistent with Wittenborn's findings. The author, referring to the first hypothesis, makes the supposition that superficially similar responses to different TAT cards would only be behaviourally similar if the cards in question were highly similar in their general response-eliciting properties (i.e., had, in general, a similar total meaning for a large number of subjects). It was also noted that the status of their hypotheses would vary with the patient group, and with the manner in which responses are categorized.

Dana (1956), questions whether card pull per se is a sufficient empirical criterion for selection of cards for an abbreviated TAT sets. In this case, "card pull" refers to the amount of personality data elicited. In the light of his study, Dana concluded that: 1. short form TAT sets can be evaluated for any available objective scoring categories by statistical comparison with the total set of cards, 2. choice of specific cards in terms of quantitative criterion of number stimulus cues alone is not adequate for the development of short form TAT sets, 3. although "card pull" and card selection are undoubtedly related, more precise and consensually valid definitions of what constitutes "relevant personality data" must inevitably precede measurement of this value for each TAT card and empirical evaluation of cards thereby selected.

In an investigation on sex differences, Lindzey and Goldberg (1953) showed that TAT cards differ in their drive evoking properties. Significant differences were observed in both mean and variability of ratings assigned to the stories told about different pictures. Table VII, Appendix A, reports their findings.

In an attempt to test the TAT's ability to discriminate between the personality dynamics of alcoholics and other hospitalized patients, Knehr, Vickery and Guy (1953) obtained protocols from 78 subjects for the full series of twenty cards. Thirty-three of the patients were alcoholics and

forty-five were not. Table VIII, Appendix A, shows the response frequencies for all 78 subjects. The distributions show more variable and scattered behaviour responses appearing in the stories for the common (male-female) cards. The authors state that the TAT seems to be more structured as the problems of themes induced by the pictures, with different cards showing different patterns of problem frequencies. Less structuring is observed with reference to the responses or actions of the story characters in dealing with the problems they face.

#### Ambiguity Measures of the Stimulus Property

In the first of a series of studies concerning the relationship between ambiguity of picture stimuli and the extent of personality structure revealed in the fantasy produced, Bijou and Kenny (1951) attempted to establish ambiguity values for TAT pictures. Here, the authors differentiate between physical and psychological ambiguity. Fifty-one judges ranked 21 TAT cards (male and general cards) on the basis of the estimated number of possible interpretations that a picture evoked (psychological ambiguity). The rank-orders for the 21 cards are expressed in Table IX. A final 15 cards of varying ambiguity value, selected for use in a subsequent study, are found in Table X, Appendix A. The second experiment was designed to test the assumption of a direct relationship between stimulus ambiguity

and the extent of personality factors revealed in evoked fantasy. Utilizing the 15 cards, Kenny and Bijou (1953) obtained responses from 18 male college students. The stories were then analyzed by two clinicians who judged the significance of the personality factors injected into the themes. The results indicated that, with the increase in stimulus ambiguity, there is first an increase in the extent of personality factors revealed in the fantasy, and then a decrease. The cards of medium ambiguity appeared to be most useful in eliciting personality factors in the TAT stories. It was also noted that with the instructions held constant, the cards from the second series (1 and above) did not reveal more information about personality than did the cards from the first series. This finding was contrary to Murray's claim that the second series of the TAT cards is more ambiguous than the first. Employing Weisskopf's transcendence indices, as another measure of personality factors in fantasy stories, Kenny (1954) in a third study, investigated the relationship between this measure and stimulus ambiguity. He also made an attempt to see how transcendence indices varied as a function of physical ambiguity, stimulus ambiguity (which involves a combination of both psychological and physical properties), and psychological ambiguity. The findings support Weisskopf's assumption that the extent of personality material revealed in the TAT picture is correlated with the transcendence index of the picture. It was also shown that with an increase in psychological ambiguity there

is an initial increase in transcendence, followed by a decrease. However, increases in physical ambiguity were not accompanied by increases in transcendence indices. Finally, in agreement with the previous findings, the second series of cards did not elicit higher transcendence indices than the first.

Murstein (1958) by utilizing Bijou and Kenny's 1951 rankings of ambiguity of the male series of cards, substantiated their findings that the moderately-ambiguous cards produced the most TAT themes.

In another study, Murstein (1958) had 12 female subjects rank a female series of 20 cards for both "psychological ambiguity" and "pleasantness". His results indicate that the more ambiguous the TAT card and the more pleasant the stimulus properties, the more pleasant the emotional tone of TAT story will be. In addition, he found that the more structured pictures are usually negatively toned, showing a tendency to elicit unpleasant themes.

In a more recent article by Murstein (1959), several studies dealing with the variations of the stimulus are reported. The findings of his survey can be summarized as follows:

1. No significant differences in transcendence were found between hazy TAT pictures and unaltered ones.
2. Varied illumination of the cards did not affect the productivity of responses, but there is a positive relationship between the increasing degrees of darkness and pleasantness of association.



3. Continued exposure after 5 seconds has negligible effects.
4. Neither alteration of the background or changes in the central figure produces a significant effect on the responses.

In a discussion concerning ambiguity, Murstein proposes that medium-ambiguity may stem from the task of perceiving what is in the picture or it may refer to the interpretation of what is clearly perceived. He also points out that an inspection of the medium ambiguity TAT cards reveals that the objects in the pictures seems fairly clear, but what is vague is uncertainty as to the feelings that the characters in the pictures seem to be experiencing.

Since these studies show that TAT stories are in part a function of the stimulus properties of the card it is clear that the role of the stimulus in determining the story needs to be assessed in the clinical interpretation of TAT stories. Unfortunately, the literature that has been reviewed here has offered little in the way of an empirical approach toward the quantification of the stimulus, even though there is general agreement that this type of information is essential for objectively meaningful interpretation of thematic responses. The initial phase of such an approach is attempted in the present study. More specifically this study attempts to define the stimulus properties of TAT cards in terms of the perceptual responses they evoke.

## CHAPTER III

### METHOD

#### (a) Materials

The materials used in the study consisted of all but five of the complete set of TAT cards. Card 7GF was omitted because of its apparent limited clinical use. Cards 13B and 13G were not used because of their unsuitability for adult subjects. Card 12F was excluded on the basis of its frequent appearance in various publications. Because of the total absence of stimulus cues, the blank card 16 was of no value in this research since the subjects were asked only to describe the pictures rather than to produce fantasy material. Thus, the following TAT cards were used: 1, 2, 3BM, 3GF, 4, 5, 6BM, 6GF, 7BM, 8BM, 8GF, 9BM, 9GF, 10, 11, 12M, 12BG, 13MF, 14, 15, 17BM, 17GF, 18BM, 18GF, 19, 20.

#### (b) Selection of Subjects

To obtain the categorization (perceptual) responses evoked by the given TAT cards, a sample of forty institutionalized patients, severely disturbed, psychoneurotic but non-psychotic, was drawn from Crease Clinic, where the maximum allowable period of institutionalization is four months. In order that this disturbed group be somewhat comparable to the normal group used in Harvey's study, an attempt was made to

limit the age range and educational level of the subjects. Because of this restriction and time limitations, an homogenous diagnostic group could not be obtained necessitating the inclusion of eleven alcoholics. A description of the nosological groups and the number of individuals in each group is shown in Table XI, Appendix B. The normal subjects were selected from students in the Vancouver Vocational Institute. Table XII, Appendix B, summarizes the age and education levels of both groups. There were no statistically significant differences between the two groups with respect to education.

(c) Procedure

Each subject was seen individually and the entire twenty-six cards were presented in one session of about 30-40 minutes. It was explained to the subjects that they were being asked to help provide data for a research project and that the results were in no way to be utilized by the hospital. The order of presentation of the cards followed the series listed by Murray (1943) in his manual.

The instructions differed from the traditional ones in that the subjects were asked to describe what they saw in the picture rather than to make up a story about them. The subjects were provided with a copy of the instructions to follow while they were being read aloud by the examiner. These instructions are reproduced in Appendix C. In response to any questions, the examiner repeated or rephrased the

pertinent parts of the instructions. When the subject's understanding of the task was ascertained, the examiner presented the cards one at a time for twenty seconds and recorded the responses verbatim.

(d) Development of the Categories

The total responses from both the normal and abnormal groups were pooled and all of the eighty perceptual reactions to each individual card were examined by Dr. Kenny. Initial groupings were obtained by reading all of the responses to an individual card and noting with a word or phrase the content of each different card description. From these notes Dr. Kenny in conjunction with the examiners constructed headings that were intended to reflect the main theme or content of the perceptual responses. Card descriptions of an essentially similar nature were entered under the appropriate headings. This process of analyzing the responses provided a number of empirically derived categories for each of the twenty-six cards. The categories were clarified or defined by using example statements from the protocols.

In the process of developing reliable categories, the examiners conducted six tests of reliability. Each person assigned the responses of the same ten subjects, (using new subjects for each of the tests), to the categories and the results were compared. After each reliability study, areas of disagreement in the assignment of responses to the

categories were examined, and the categories redefined and clarified where necessary in order to eliminate the disparity. Subsequently, rules governing the assignment of the responses to the categories were developed, particularly to standardize the categorization of multiple percept responses. The categories, their definitions and the rules governing their use are reproduced in Appendix D.

The assignment of the responses to these categories was then carried out individually by the examiners for their own subjects, and response frequencies for each category were determined.

## CHAPTER IV

### RESULTS

#### (a) Interscorer Reliability

In all, six reliability studies were performed. In each study 5 protocols from each of the groups (normal and abnormal) were selected at random and the responses were then assigned independently to the categories by the examiners. The degree to which the examiners agreed in their assignment of the responses to the categories was then determined. It was during this process that a good deal of elucidation of the categories was found to be necessary. In addition, the rules mentioned above were developed to serve as guides in order to achieve a standard method of assignment. The first five trials showed the following percentages of agreement: 86.5, 81.5, 83.5, 84.6, 83.8, in that order. After the final revision of the categories, specification of the general rules, and clarification of the category descriptions, this figure rose to 91. These results indicate that not only can categories be formed empirically but also that the assignment of perceptual reactions to the categories can be done with a relatively high degree of reliability.

(b) Response Frequencies and the Differences between Groups

The total responses for all of the forty subjects were assigned to the appropriate categories and a frequency count was made. Chi squares were then computed to determine the difference between the response frequencies of the normals and the abnormals for each category. Table XIII presents the categories, frequencies for both groups and the computed chi squares. An examination of these results shows only a small number of significant differences between the response frequencies of the normal and abnormal groups.

The cards showing significant differences between the groups in at least one category were: 1, 2, 5, 7BM, 8BM, 9GF, 12BG, 14, 15, 17BM, 17GF, 19, and 20. The most frequent category in which significant differences were obtained was in the descriptive category. Cards No. 1, 2, 5, 14, 15, 17BM, 19, and 20 all showed differences in the descriptive category at or beyond the 0.05 level. In each case the abnormal group had the higher number of responses in the descriptive category. Card 6BM showed a  $\chi^2$  difference of 6.81 in the "other" category with the abnormal group having the greater frequency. Two significant differences occurred on card 7BM; the first produced a  $\chi^2$  of 6.46 in category 1 (Discussion) with the greater frequency in the abnormal group; the second difference was in category 2 (Succorance from older Person) with the normal group having the greater frequency and the  $\chi^2$  being 9.30. This finding

TABLE XIII

Differences in the Response Frequencies of Normal and Abnormal Subjects for each Category

Card Number	Category	Frequency		$\chi^2$
		N	Ab	
1.	1. Intraception	17	12	0.87
	2. Parental Pressure	2	0	0.51
	3. Aspiration	5	1	1.62
	4. Does Not want to study	12	9	0.26
	5. Inadequacy	1	1	0.00
	6. Other	0	5	3.41
	7. Description	3	12	5.25*
2.	1. Toil and Hardship	3	0	1.39
	2. Peaceful, constructive	1	0	0.00
	3. Aspiration of Girl	4	1	0.85
	4. Conflict with Parents	1	0	0.00
	5. Love	1	0	0.00
	6. School or Student	15	7	3.07
	7. Symbolic Content	0	2	0.51
	8. Sadness	2	5	0.63
	9. Intraception	2	5	0.63
	10. Other	6	5	0.00
	11. Description	5	15	5.40*
3 BM	1. Sorrow, Guilt	22	22	0.00
	2. Punishment Over wrong-doing	2	2	0.00
	3. Suicide	5	3	0.14
	4. Sleeping, Tired	3	3	0.00
	5. Sickness	0	1	0.00
	6. Person in Trouble	2	1	0.00
	7. Other	4	1	0.85
	8. Description	2	7	2.00
3 GF	1. Death or Loss	7	2	2.00
	2. Bad News	2	1	0.00
	3. Sorrow	16	23	1.80
	4. Shocked by something she has seen	6	4	0.11
	5. Marital or Romantic Frustration	4	1	0.85
	6. Ashamed and Remorseful	0	1	0.00
	7. Other	5	6	0.00
	8. Description	0	2	0.51



Card Number	Category	Frequency		$\chi^2$
		N	Ab	
4.	1. Comfort from Partner	3	4	0.00
	2. Restraining or Reasoning	5	1	1.62
	3. Departure from Partner	3	4	0.00
	4. Wanting Him to do something he won't do	5	2	0.63
	5. Begging forgiveness	1	0	0.00
	6. Unrequited Love	2	1	0.00
	7. Restraining	3	4	0.00
	8. Pleading	1	3	0.26
	9. Argument	2	2	2.00
	10. Conversation	3	8	1.69
	11. Other	7	7	0.00
	12. Description	0	4	2.37
5.	1. Surprise	14	3	1.57
	2. Horror, Disapproval	0	1	0.00
	3. Spying, Peeking	8	4	0.88
	4. Looking for or Calling somebody	8	11	0.28
	5. Looking for Thief	1	0	0.00
	6. Curious or Inquisitive	1	1	0.00
	7. Other	3	0	1.39
	8. Descriptive	5	15	5.40
6. BM	1. Confession to Parent Figure	10	6	0.70
	2. Departure from Parent or Female	1	2	0.00
	3. Parental or Authority Pressure or Disapproval	7	4	0.42
	4. Bearing or Waiting for Bad news	7	5	0.10
	5. Receiving Consolation Succorance	1	1	0.00
	6. Disappointment to Parent or Authority Figure	2	1	0.00
	7. Parental Concern	2	1	0.00
	8. Male Figure Concern	6	4	0.11
	9. Both Figures Concerned	4	3	0.00
	10. Other	0	8	6.81 *
	11. Description	0	5	3.41
6. GF	1. Surprise	17	17	0.00
	2. Conversation	5	10	1.31
	3. Female Figure doing something Secret or Evil	1	0	0.00

Card Number	Category	Frequency		$\chi^2$
		N	Ab	
(cont) 6. GF	4. Disinterest or Displeasure with Male Figure	1	1	0.00
	5. Argument	2	0	0.51
	6. Counselling and Advising	2	0	0.51
	7. Questioning	1	0	0.00
	8. Sly, Suspicious Intentions of Male Figure	3	0	1.39
	9. Other	4	2	0.18
	10. Description	4	10	2.16
	7. BM			
	1. Discussion	5	16	6.46 *
	2. Succorance from Older Person	17	4	9.30 *
8 BM	3. Pressure or Rebuke to Younger Figure	2	1	0.00
	4. Thinking, Listening or Watching Something	3	3	0.00
	5. Symbolism: Age and Youth	2	0	0.51
	6. Advice Not Accepted	2	5	0.63
	7. Dysphoric Mood	1	3	0.26
	8. Other	1	2	2.00
	9. Description	1	6	2.50
	1. Operation	8	9	0.00
	2. Aspiration	9	3	2.45
	3. Aggression - Impersonal	8	5	0.37
8 GF	4. Daydreaming	3	12	5.25
	5. Aggression - Personal	9	5	0.78
	6. Other	2	4	0.18
	7. Description	1	2	0.00
	1. Dreaming, Thinking, Unspecified	16	20	0.45
	2. Dreaming, Thinking, Specified	11	4	2.95
	3. Loneliness, Unhappiness Worried	3	3	0.00
	4. Posing	2	1	0.00
	5. Contentment	4	6	0.11
	6. Love	2	1	0.00
9 BM	7. Other	2	0	0.51
	8. Description	0	5	3.41
	1. Resting - sleeping	15	18	0.21
	2. Drunkenness	0	4	0.37
	3. Death	2	0	0.51
	4. Tired, Exhausted	5	3	0.14
	5. Lazy	14	10	0.54

Card Number	Category	Frequency		$\chi^2$
		N	Ab	
(Cont) 9 BM	6. Trouble	2	0	0.51
	7. Other	2	3	0.00
	8. Description	0	2	0.51
9 GF	1. Spying	5	6	0.00
	2. Escape	20	10	4.32 *
	3. Conflict Between The Two Women	2	3	0.00
	4. Anger	0	2	0.51
	5. Fear	2	3	0.00
	6. Hurry	2	5	0.63
	7. Other	4	3	0.00
	8. Description	5	8	0.37
10.	1. Departure from Partner	4	2	0.18
	2. Love	21	21	0.00
	3. Sorrow	5	4	0.00
	4. Comfort	1	6	2.50
	5. Dancing	1	2	0.00
	6. Conversation	4	2	0.18
	7. Other	2	1	0.00
	8. Description	2	2	0.00
11.	1. Escape from Peril or Animal	2	0	0.51
	2. Aggression Towards Peers	2	0	0.51
	3. Aggression from Impers- onal Source	1	0	0.00
	4. Unreal, Fantastic	3	0	1.39
	5. Animal Specified	11	11	0.00
	6. Prehistoric Times	9	6	0.33
	7. Other	2	5	0.63
	8. Description	10	18	2.69
12 M	1. Hypnosis	19	14	0.83
	2. Sickness, Illness or Death	5	4	0.00
	3. Praying	7	6	0.00
	4. Sleeping	3	3	0.00
	5. Sinister	2	3	0.00
	6. Talking	0	2	0.51
	7. Other	2	5	0.63
	8. Description	2	3	0.00
12 BG	1. Serenity	9	5	0.78
	2. Spring or Summer	7	12	1.10
	3. Snow	5	4	2.37
	4. Reference to People	11	3	4.24 *
	5. Other	4	1	0.85

	Card Number	Category	Frequency		2 X
			N	Ab	
(Cont)	12 BG	6. Description	9	15	1.49
	13 MF	1. Death or Sickness of Partner	8	2	2.86
		2. Aggression Toward Partner	8	4	0.88
		3. Sorrow over Illness or Death of Partner	9	9	0.00
		4. Sorrow: No Explanation	2	4	0.18
		5. Remorse or Guilt	3	3	0.00
		6. Love Conflict	0	1	0.00
		7. Rape	0	1	0.00
		8. Man Has Had or is Contemplating Heterosexual Relation With Woman	2	0	0.51
		9. Other	4	5	0.00
		10. Description	4	11	2.95
	14	1. Looking, Gazing at Something	12	24	6.11 *
		2. Intraception	12	3	5.25
		3. Loneliness	0	1	0.00
		4. Suicide	2	2	0.00
		5. Escape	4	2	0.18
		6. Favourable Environment	3	0	1.39
		7. Aspiration	4	0	2.37
		8. Other	3	1	0.26
		9. Description	0	7	5.64 *
	15.	1. Death	4	2	1.25
		2. Loneliness	3	0	1.39
		3. Figure Represents Undertaker, etc.	4	1	0.85
		4. Unreal or Evil Figure	12	9	0.26
		5. Religion	3	3	0.00
		6. Mourning	3	3	0.00
		7. Dysphoric Setting	2	6	1.25
		8. Other	7	8	0.00
		9. Description	0	8	6.81 *
	17 BM	1. Self-esteem	4	2	0.18
		2. Exhibition	3	1	0.26
		3. Escape	9	3	2.45
		4. Physical Strength	14	17	0.21
		5. Other	6	1	2.50
		6. Description	4	16	8.07 **

Card Number	Category	Frequency		$\chi^2$
		N	Ab	
17 GF	1. Men Working	12	24	6.11 *
	2. Suicide	3	2	0.00
	3. Slavery	6	1	2.50
	4. Piracy	1	1	0.00
	5. Something Disastrous	3	0	1.39
	6. Symbolic Contrast	2	0	0.51
	7. Other	9	2	3.79
	8. Description	4	10	2.16
18 BM	1. Escape	3	3	0.00
	2. Suicide	2.	1	0.00
	3. Restraining or Arresting Figure	13	7	1.67
	4. Fear or Shock	4	0	2.37
	5. Aggression Toward Peer	7	14	2.32
	6. Drunkenness	6	2	0.51
	7. Helping	7	8	0.00
	8. Other	4	1	0.85
	9. Description	0	4	2.37
18 GF	1. Strangling, Killing	10	7	0.30
	2. Illness	7	7	0.00
	3. Accident	3	4	0.00
	4. Comfort	5	5	0.00
	5. Grief or Unhappiness	7	5	0.10
	6. Other	5	9	0.78
	7. Description	3	3	0.00
19	1. Cold Weather, Winter	3	2	0.00
	2. Storm	15	8	2.20
	3. Refers to Person in Picture	5	3	0.14
	4. Abstract	6	8	0.09
	5. Unreal	6	3	0.50
	6. Other	2	3	0.00
	7. Description	3	13	6.33 *
20	1. Waiting	6	4	0.11
	2. Aggression	7	0	5.64 *
	3. Contemplation	4	0	2.37
	4. Loneliness	12	3	5.25 *
	5. Other	4	7	0.42
	6. Description	7	26	16.71 **

\*Significant at the .05 level.

\*\*Significant at the .01 level.

is another indication of constriction on the part of the institutionalized subject. On card 8BM, the abnormals made significantly more use of the rather general category of Daydreaming (Category 4) than did the normal group. The  $\chi^2$  was 5.25.

The responses falling into category 2 (Escape) on card 9GF were significantly higher for the normal group and achieved a  $\chi^2$  of 4.32. Card 12BG responses, - category 4 (Reference to people) yielded a  $\chi^2$  difference of 4.24 with the normals having greater frequency than abnormals. Two significant differences were found on card 14: category 1 (looking, gazing at Something) being more heavily loaded with abnormal group responses, whereas category 2 (Intra-reception) revealed higher frequency of normal group responses. The  $\chi^2$  were 7.11 and 5.25 respectively. These differences also support the tendency of the abnormal group to make greater use of the more general categories. A significantly higher number of the abnormal group responses were found in category 1 (Men Working) card 17GF. The  $\chi^2$  differing was 6.11. On card 20, the abnormal group made no use of category 2 (Aggression), whereas the normal subjects gave a relatively large number of responses to this category. The comparison yielded a  $\chi^2$  of 5.64. Category 4 (Loneliness) of the same card was also more frequently used by the normal group, with a  $\chi^2$  of 5.25.

(c) Analysis of responses for number of percepts

Each of the responses was then examined in order to determine the number of different percepts each contained. The responses containing only one percept were counted for each card and a comparison of these totals was made with those of the normal group. The results of this comparison, shown in Table XIV indicate a tendency for the abnormal group to elicit more single percept responses, although there are only 9 significant differences between the two groups. These significant differences appear on cards: 3BM, 6GF, 8GF, 9GF, 12BG, 13MF, 14, 19, and 20. In all but one of the cards the abnormal group produced a larger number of single percept responses.

TABLE XIV

Differences in the Number of Responses Containing 0-1 Percepts  
Between Normal and Abnormal Subjects

Card No.	Number of 0-1 responses for normals	Number of 0-1 responses for abnormals	$\chi^2$
1.	22	28	1.33
2.	18	24	1.25
3BM.	14	26	6.05*
3GF.	15	24	3.20
4.	12	18	1.33
5.	28	33	1.10
6BM.	6	14	3.27
6GF.	16	29	7.31**
7BM.	16	16	0.00
8BM.	15	21	1.26
8GF.	14	31	13.00**
9BM.	10	19	3.46
9GF.	10	20	4.32*
10.	18	25	1.81
11.	29	36	2.95
12M.	22	16	1.25
12BG.	24	37	9.94**
13MF.	13	26	7.20**
14.	11	37	32.55**
15.	23	27	.48
17BM.	26	31	.98
17GF.	30	34	.70



- 2 -

TABLE XIV

Card No.	Number of 0-1 responses for normals	Number of 0-1 responses for abnormals	$\chi^2$
18 BM	10	18	2.69
18 GF	15	16	0.00
19	23	37	11.27 **
20	21	34	8.35 **

\* Significant at .05 level

\*\* Significant at .01 level

## CHAPTER V

### DISCUSSION

Since the main objective of this research was to develop empirically derived categories from perceptual responses to the TAT, this study appears to have been quite successful. It has also been shown that the assignment of the perceptual responses to these categories can be done with a fairly high degree of reliability. However, the generation of well-defined and inclusive categories proved to be no simple task. One of the most perplexing problems encountered was that of the treatment of responses containing two or more percepts. Although the cards were presented for only twenty seconds, this limited exposure seemed to have little inhibiting effect on the number of perceptual responses given by many of the subjects. The rules governing the selection of categories shown in Appendix C were developed to lessen the confusion on this point. An effort was made to keep the rules from becoming cumbersome and to limit them to a practical number. In order to minimize the use of the "Other" category and to facilitate the standardizing of the categorization process, a ranking or weighting of the categories on certain cards was found to be necessary. This procedure is admittedly more subjective than is desirable

and is justified mainly because of its pragmatic value in establishing reliability. These weightings were determined on the basis of what the authors felt to be the degree of emotional content in the response. That is, the higher the emotional charge of the percept, the more dominant that particular part of the response would be. Thus, responses containing more than one percept were assigned to the category of the higher emotional weighting. On card 3BM for example, a response ascribing either sorrow or fatigue to the figure would go into the sorrow category because of its higher emotional content. These weightings were considered only when the other rules did not apply. Their use was purely for the facilitation of reliable categorizing and not intended to imply a measure of clinical significance for the different categories. The achievement of the comparatively high reliability would, in part, justify this procedure.

Because our responses to the TAT were obtained from card descriptions, a direct comparison with other studies may be less meaningful since most previous research utilized story material. It is interesting to note, however, that in Wittenborn's (1950) study the roles ascribed to the figures in the responses shown in Table , reveal a rather high degree of similarity to many of our empirically derived categories. The apperceptive norms of Rosenzweig and Flemming (1947) also parallel our findings to some extent.

The results of the comparison of response frequencies between normal and abnormal subjects showed the expected essential similarity in content. In the few significant differences found, there was a greater tendency towards descriptive responses among the abnormal subjects. Further analysis of the perceptual responses produced relatively small number of significant differences between the groups in the number of nil and single percepts that were elicited by each card. It was shown, however, that in all but one of the cards the abnormal group gave fewer multiple responses. It was also noted that while the content of the responses was basically the same for both groups, the abnormals were much more constricted in their mode of expression. This difference in the quality of responses between normals and abnormals is a common finding. In the main, however, it would appear that the abnormal subjects perceive the stimulus cues in the TAT very much in the same way as do normal subjects. It would therefore seem to be more meaningful to look for differences in other dimensions of the perceptual reactions.

In the next phase of the research outlined by Kenny (1959) the subjects will be provided with a checklist of the main critical categories and asked to check that category which they think best describes what they see in a given TAT card, a quantitative index of the ambiguity for each thematic card can then be obtained by the application of the uncertainty measure to the data. This method of defining ambiguity has two advantages: 1. it takes into account the problem of

weighting the proportion of subjects who give different categorization reactions; 2. providing the subjects with categories derived from card descriptions seems to define the ambiguity of the thematic cards in terms of stimulus (perceptual) ambiguity rather than in terms of themata thus more directly relating the picture stimuli to the perceptual reactions. This new index of ambiguity can then be employed in further investigation of the relationship between personality revealingness and the ambiguity of the stimulus.

The present study has therefore been done in order to provide the empirically derived categories as a first step in this programme of research.

## CHAPTER VI

### SUMMARY AND CONCLUSIONS

This study is concerned with the initial phase of a programme of research dealing with the stimulus factors in the TAT. The primary purpose of the present study was to categorize perceptual reactions to the TAT cards. Its secondary aim was that of comparing the perceptual responses given by an abnormal group with those produced by a normal group in a parallel study. In this research perceptual responses to 26 TAT cards were obtained from 40 institutionalized subjects. Utilizing these protocols, and those obtained from a normal group, empirically derived perceptual categories were developed. The perceptual responses were then assigned to these critical categories. Several reliability studies were carried out while the categories were being revised and certain rules regarding the assignment of responses to the categories were developed. After the final revision an inter-judge reliability of 91 was established.

The responses were then assigned to the appropriate categories and a frequency count was made for both normals and abnormals. Chi squares were computed to determine differences between the two groups on frequency of response

for each category. The small number of significant Chi square differences indicates that there is essentially no difference in the perceptual reactions to TAT cards between the normal and abnormal groups. However, the patient group did tend to give more descriptive responses than the normals. The perceptual reactions were further analysed to determine the number of percepts each response contained. Chi squares were again computed showing that although relatively few significant differences were found between the groups in the number of single and multiple percept responses, the abnormal group consistently produced a higher number of single percept responses.

Since it was possible to develop reliable perceptual categories, the study as a whole appears to have been fairly successful in laying the foundation for the originally outlined program of research.

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## APPENDIX A

TABLE I

Predominant Emotional Tone of Interpretive Responses to  
Each Picture (Coleman, 1947)

<u>Picture</u>	<u>Plot</u>			<u>Ending</u>		
	<u>Unhappy</u>	<u>Neutral</u>	<u>Happy</u>	<u>Unhappy</u>	<u>Neutral</u>	<u>Happy</u>
18GF	31	-	-	16	5	8
6BM	30	4	-	15	5	10
18BM	18	-	-	10	1	7
14	22	4	1	6	4	16
3GF	29	-	2	8	4	17
5BM	28	1	2	10	3	18
20	14	3	1	3	3	10
6GF	18	9	2	6	2	20
19	18	-	2	4	-	17
1	17	7	2	4	3	18
13B	17	4	3	4	6	12
7BM	21	6	4	4	6	18
4	16	5	4	5	6	12
11	4	1	1	1	-	5
2	14	7	5	5	5	13
16 (in set A)	15	4	6	4	1	20
8GF	13	5	6	4	5	12
13G	13	4	7	4	4	15
7GF	19	5	12	3	5	26
16 (in set B)	<u>10</u>	<u>2</u>	<u>9</u>	<u>4</u>	<u>-</u>	<u>17</u>
	367	71	59	120	68	291

TABLE II

Rank Order of Pictures on the Basis of Number of Themes  
which each Elicits (Eron, 1950)

Stimulatory value	Picture	Number of Themes
1	13 MF	456
2	20	421
3	18 BM	413
4	6 BM	395
5	3 BM	373
6	4	361
7	12 M	352
8	15	340
9	7 BM	316
10.5	10	301
10.5	17 BM	301
12	8 BM	287
13	9 BM	273
14	14	264
15	5	255
16	2	239
17	1	237
18	19	225
19	11	202
20	16	199

TABLE III

Mean Rating of Emotional Tone of TAT Cards (Eron, et al., 1950)

<u>Card</u>	<u>Rating</u>		<u>Rank Order</u>	
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>
1	+0.06	-0.48	18	11
2	-0.18	-0.46	13	12.5
3	-1.50	-1.48	1	4
4	-1.02	-1.02	7	6
5	-0.50	-0.38	11	15.5
6	-1.20	-0.44	4	14
7	-0.60	-0.28	10	17
8	-0.12	-0.08	15	19
9	0.00	-1.06	17	5
10	-0.14	-0.46	14	12.5
11	0.72	-0.86	9	7
12	-0.90	-0.66	8	10
13	-1.44	-1.82	2	1
14	+0.10	-0.02	19	20
15	-1.34	-1.76	3	3
16	-0.06	-0.16	16	18
17	+0.22	-0.70	20	9
18	-1.08	-1.78	5	2
19	-0.24	-0.38	12	15.5
20	-1.04	-0.72	6	8

A rank of 1 signifies that the mean rating for the card is the highest in the negative direction, i.e. the saddest. A rank of 20 means that the mean rating of the card is the least sad of the 20 cards.

TABLE IV

Cards, Frequency of Use (FrU), Number of Examiners Using (#Ex), and Median Number of Emotional Words Per Card (Mdn.EW) for 175 Protocols. (Ullman, 1957)

<u>Card</u>	<u>FrU</u>	<u>#Ex</u>	<u>Mdn.EW</u>
1	153	34	5.50
2	104	30	4.77
3	147	34	5.64
4	155	34	6.56
5	72	28	3.50
6	157	34	7.63
7	142	33	5.81
8	91	30	4.42
10	68	26	3.70
11	33	18	2.80
12	122	33	4.09
13	154	35	5.37
14	70	25	3.17
15	34	18	4.50
16	41	17	3.50
17	69	26	3.08
18	88	30	5.31
19	18	10	2.88
20	48	22	4.38

TABLE V

Mean Level of Response Ratings and Rank of each Card (Terry 1952)

Card	Mean	Rank
1	10.1	13
2	11.7	3
3GF	11.6	4
4	10.4	11
5	9.2	18
6GF	10.2	12
7GF	11.1	6
8GF	10.0	14.5
9GF	10.9	7
10	11.4	5
11	8.4	20
12F	12.0	1
13MF	10.8	8
14	9.8	16.5
15	10.6	9
16	10.0	14.5
17GF	10.5	10
18GF	11.9	2
19	8.5	19
20	9.8	16.5

TABLE VI

A Classification of the Response of One Hundred Students to certain  
TAT Cards (Wittenborn 1950)

<u>Card</u>	<u>Figures</u>	<u>Role Ascribed in Response</u>	<u>Response</u>	<u>Frequency</u>
			<u>Group</u>	
			<u>Number</u>	
7 BM	Boy	Impetuous	1	18
		Compliant	2	28
		Conflict	3	18
	Man	Objective and sympathetic	4	60
7 GF	Girl	Accepting guidance	5	35
		Resistant	6	27
	Mother	Pressing	7	20
		Tolerant	8	51
4	Man	Hostile fighter	9	36
		Conflict	10	26
	Woman	Evil	11	26
		Good	12	67
6 GF	Man	Friendly	13	33
		Suspicious	14	22
		Preying	15	34
	Woman	Evil	16	24
Good		17	66	
6 BM	Mother	Sad, shocked, unrealistic	18	68
	Man	Bearing sad news	19	45
		Confessing guilt	20	17
Emancipation		21	26	
2		Eternal triangle	21	20
		Conflict	23	20
		Peaceful Constructive	24	21
9 BM		Workers	25	49
		Idlers	26	35
13 MF	Woman	Good	27	40
		Temptress	28	19
		Innocent	29	26
	Man	Guilty over violence	30	24
		Guilty over neglect	31	29
		Sex conflict	32	18



TABLE VII

Clusters of TAT Cards Securing Similar Mean Ratings on  
Each of Seven Variables (Lindzey and Goldberg 1953)

<u>Variable</u>	<u>High Mean</u>	<u>Low Mean</u>
Need Achievement	1,2.....14.....	13MF,4,10,5,15
Need Aggression	13MF.....5,15.....	4,1,2,10,14
Need Sex	13MF.....4.....10.....	14,2,5.....15,1
Need Nurturance	10,2.....5,13MF,4.....	15,1,14
Need Abasement	15,13MF.....10,4,14.....	1,2,5
Narcism	13MF,1,4,2,15,5,14.....	10
Verbal Responsiveness	1,2,4,.....	5,15,14,13MF,10

TABLE VIII A

Variations in Behavioral Response Patterns induced by Different TAT  
Cards Shown by the Distribution of Frequencies Expressed as Per Cent  
(78 Patients)

	<u>Card Number</u>					
<u>Behavioural response</u>	1	2	4	5	10	11
Aggressive Attack	1.3	-	2.6	3.8	1.3	26.9
Retribution or Revenge	-	-	2.6	2.6	-	-
Constructive Aggression	23.1	41.0	19.2	7.7	5.1	10.3
Rational Approach	2.6	12.8	28.2	7.7	6.4	1.3
Sensuous Gratification	-	-	1.3	3.8	1.3	-
Compromise	1.3	-	-	1.3	-	1.3
Seeks Help	7.7	-	2.6	1.3	14.1	2.6
Passive Hostility	6.1	1.3	1.3	1.3	-	-
Anxious Suspension of Activity	3.5	-	-	2.2	4.	1.3
Acceptance of Situation	2.6	14.1	1.3	2.05	24.4	5.1
Irrational, Ill-directed Activity	-	-	1.3	1.3	-	1.3
Submission	16.6	5.1	9.0	7.7	3.8	3.8
Avoidance	-	1.3	2.6	6.3	1.3	-
Resignation	7.7	7.7	5.1	9.0	12.8	3.8
Active Withdrawal	11.5	5.1	20.5	7.7	5.1	21.8
Suicide	-	-	-	2.6	-	-
No Action	12.8	9.0	1.3	17.9		20.5
Alternative Actions (unresolved)	2.6	1.3	1.3	-		-

The columns add to 100.0 ± a small error due to rounding of figures.

TABLE VIII A (Cont.)

<u>Behavioural Response</u>	<u>Card Number</u>					
	13	14	15	16	19	20
Aggressive Attack	15.4	2.6	5.1	6.4	-	11.5
Restribution or Revenge	1.3	1.3	3.8	2.6	1.3	-
Constructive Aggression	10.3	12.8	7.7	6.4	3.8	5.1
Rational Approach	2.6	7.7	6.4	3.8	5.1	10.3
Sensuous Gratification	5.1	-	-	1.3	1.3	-
Compromise	-	-	-	-	-	-
Seeks Help	3.8	2.6	7.7	3.8	6.4	9.0
Passive Hostility	2.6	1.3	-	-	1.3	1.3
Anxious Suspension of Activity	1.3	2.6	-	2.6	-	1.3
Acceptance of Situation	7.7	11.5	9.0	14.1	9.0	10.3
Irrational, Ill-directed Activity	1.3	-	1.3	-	1.3	1.3
Submission	7.7	2.6	1.3	1.3	3.8	2.6
Avoidance	1.3	-	-	1.3	-	1.3
Resignation	16.6	11.5	16.6	10.3	2.6	20.5
Active Withdrawal	9.0	6.4	5.1	5.1	2.6	7.7
Suicide	6.4	1.3	2.6	2.6	1.3	2.6
No Action	6.4	38.5	29.5	37.2	60.3	10.3
Alternative Actions (unresolved)	1.3	-	1.3	1.3	-	5.1

The columns add to 100.0<sup>±</sup> a small error due to rounding of figures.

TABLE VIII B

Variations in Problems or Themats Induced by Different TAT Cards Shown  
by the Distribution of Frequencies expressed as Per Cent. (Knehr,  
Vickery and Guy, 1953) (78 patients)

<u>Problems</u>	<u>Card Number</u>					
	1	2	4	5	10	11
Heterosexual Conflicts	-	2.6	60.8	7.7	14.1	-
Homosexual Conflicts	-	-	3.8	1.3	3.8	1.3
Sex Triangle	-	6.4	20.5	3.8	1.3	1.3
Conflict with Authority	44.9	15.4	1.3	11.5	1.3	10.3
Use Made of Power	-	-	-	12.8	-	23.1
Situational Hope	16.6	44.9	7.7	23.1	17.2	32.1
Situational Fate	2.6	1.3	-	1.3	19.2	5.1
Ethical Standards	2.6	-	1.3	3.8	1.3	-
Personal Adequacy	14.1	2.6	1.3	-	5.1	5.6
Alternative Courses of Action	7.7	15.4	-	-	-	1.3
None Indicated	11.5	11.5	1.3	34.6	34.6	23.1

The rows add to 100.00± a small error due to rounding of figures.

TABLE VIII B (Cont.)

Variations in Problems or Themes Induced by Different TAT Cards Shown  
by the Distribution of Frequencies expressed as Per Cent. ( Knehr,  
Vickery and Guy 1953) (78 patients)

	<u>Card Number (Cont.)</u>					
<u>Problems</u>	13	14	15	16	19	20
Heterosexual Conflicts	21.8	24.6	6.4	1.3	1.3	14.1
Homosexual Conflicts	-	-	-	1.3	1.3	-
Sex Triangle	5.1	-	-	2.6	1.3	2.6
Conflict with Authority	1.3	6.4	3.8	3.8	6.4	5.1
Use Made of Power	1.3	1.3	5.1	2.6	1.3	2.6
Situational Hope	7.7	14.6	14.1	24.4	38.8	39.7
Situational Fate	24.4	-	20.5	3.8	2.6	1.3
Ethical Standards	5.6	-	14.1	3.8	-	3.8
Personal Adequacy	5.1	9.0	7.7	10.3	2.6	10.3
Alternative Courses of Action	3.8	6.4	-	-	-	9.0
None Indicated	3.8	39.7	28.2	46.2	53.6	1.5

The rows add to 100.00± a small error due to rounding of figures.

TABLE IX

Rank order, Medians, Means, and Standard Deviations of 21 TAT Cards Judged  
as to Degree of Ambiguity (Bijou and Kenny 1951)

Rank	Picture Number	Median	Mean	Standard Deviation
1	12 BG	1.00	5.07	6.19
2	1	6.00	6.96	4.80
3.	2	7.00	8.45	5.31
4	9 BM	7.00	8.00	5.19
5	17 BM	7.00	8.80	7.30
6	13 B	7.00	7.76	5.60
7	14	8.00	9.08	5.49
8	10	10.00	11.23	5.04
9	4	11.00	12.03	4.74
10	7 BM	12.00	12.47	4.72
11	8 BM	12.00	11.49	2.53
12	12 M	12.00	11.84	5.24
13	13 MF	12.00	11.86	5.19
14	20	13.00	9.07	5.49
15	3 BM	13.00	11.78	4.74
16	6 BM	14.00	12.47	4.55
17	5	14.00	13.15	5.31
18	15	15.00	12.60	6.45
19	18 BM	17.00	14.84	5.10
20	11	18.00	13.52	7.63
21	19	19.00	14.82	7.00

TABLE X

Ambiguity Rank Order Values for Fifteen Cards Selected for Study (Bijou and  
Kenny 1951)

<u>Final Rank</u>	<u>Picture Designation</u>	<u>Description</u>
1	12 BG	A rowboat on the banks of a wood- land stream.
2	1	A boy and a violin which rests on a table in front of him.
3	2	Country scene: Young woman in fore- ground with books; in the background, a man working in the fields and an older woman looking on.
4	9 BM	Four men in overalls are lying on the grass.
5	17 BM	A naked man is clinging to a rope.
8	4	A woman is clutching the shoulders of a man whose face and body are averted as if he were trying to pull away from her.
9	7 BM	A grey-haired man is looking at a younger man who is staring into space.
10	8 BM	An adolescent boy with a barrel of a rifle at one side, and in the background is a dim scene of a surgical operation.
11	12 M	A young man is lying on a couch with his eyes closed. Leaning over him is an elderly man, his hands stretched out above the face of the reclining figure.
12	13 MF	A young man is standing with his head buried in his arm. Behind him is a figure of a woman lying in bed.
17	5	A woman standing on a threshold of a half-opened door and looking into a room.
18	15	A gaunt man with clenched hands is standing among gravestones.

TABLE X (Continued)

<u>Final Rank</u>	<u>Picture Designation</u>	<u>Description</u>
19	18 BM	A man is clutched from behind by three hands
20	11	A road between high cliffs, and obscure figures in the distance. On one side is the long head and neck of a dragon.
21	19	A weird picture of cloud formations overhanging a snow-covered cabin in the country.



## APPENDIX B

TABLE XI

<u>Nosological groupings</u>	<u>Frequency</u>
Emotionally unstable personality	1
Chronic anxiety state	1
Reactive depression	2
Obsessive compulsive neurosis	2
Psychoneurotic depressive reaction	4
Psychoneurotic depression	1
Acute anxiety reaction	1
Neurotic depressive reaction	3
Psychoneurotic - mixed order	1
Neurotic depression	3
Alcoholic addiction	11
Neurotic personality	1
Conversion reaction	1
Adjustment reaction of adolescence	1
Anxiety reaction	2
Anti-social reaction	1
Anxiety reaction with obsessive-compulsive personality	1
Psychoneurotic reaction depressive type	1
Psychoneurotic disorder depression reaction	1
Obsessive compulsive	1

TABLE XII

Means, Range and standard deviation of the age and Educational level  
(total number of years of formal education), of the subjects

Group	N	Age Range	Mean Age	S.D.	Ed. level Range	Mean Ed.Level	S.D.
<u>Abnormal</u>							
Male	23	21-45	31.69	6.66	7-15	10.73	2.11
Female	17	21-42	31.05	5.76	8-15	10.05	2.00
Total	40	21-45	31.42	6.29	7-15	10.45	2.04
<u>Normal</u>							
Male	23	18-28	21.34	2.15	8-13	11.17	1.24
Female	17	18-36	23.35	5.86	8-11	10.35	.93
Total	40	18-36	22.20	4.24	8-13	10.82	1.20

2-tailed test of significance at .01 level

	Age	Ed. level
t	7.62	1.00 *

\* p rejected at .01 level of significance.

## APPENDIX C

INSTRUCTIONS

I am interested in having people tell me what they see in pictures. I have a set of pictures here and I will show you them one at a time for 20 seconds each. During the 20-second period I want you to describe what you see. That is, describe what is in each picture. Tell me everything you see while the card is before you. Remember, the card will be before you for only 20 seconds, so you should start to tell me what you see as soon as I present a card to you. Are there any questions?

APPENDIX D

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### Rules Governing Selection of Categories

1. If a person states two percepts and does not elaborate and is neutral on both then the first percept is categorized.
2. If elaboration, then judge in terms of emotional content (includes repetition). Thus, if two percepts and one weighted put in strongest category.
3. Where multiple theme exists where one theme fits a category and another has been introduced that does not fit a category, put in the "other" category unless theme fitting into category is dominant, then place in this dominant category, otherwise "other" category.
4. If multiple percepts (two or more) and not able to judge which category, put in "other" category.
5. Specified profession, vocation, race, etc., goes into "other".

RESPONSE CATEGORIESCARD 1

1. Intraception (thoughtful): absorbed, thinking, wondering, concentration, dreaming, pensive, meditative, pondering, introspective, intent, curious, studious (not just looking at it or watching it).
2. Parental pressure: parents are forcing, compelling.
3. Aspiration: hoping, wishing, aspiring, ambitious, wishing he could play it, wants to learn to play it, wished to be a great musician. Does not include wonderment as to whether he can ever be accomplished artist.
4. Does not want to do study practice: tired of doing something e.g. studying practicing; doesn't want to play it; detests it; has had as much as he can take, doesn't care much to practice violin, not interested in it.
5. Inadequacy: discouraged about success in playing.
6. Other.
7. Description.



CARD 2

1. Toil and hardship: people trying to make a living or striving to make a livelihood on a farm, working hard.
2. Peaceful, constructive: peaceful scene, working to develop a new farm area.
3. Aspiration of girl: wishes to better herself, dreaming and hoping for future, wants to get away and better herself, wants future for self.
4. Conflict with parents: over leaving farm and going to school or bettering herself, had fight with parents.
5. Love.
6. School or student: going to school, coming from school. taking a course, a school teacher.
7. Symbolic contrast: of education and land.
8. Other.
9. Description.

CARD 3 BM

1. Sorrow, guilt over something: sadness, despair, disheartened, depressed, broken up or sorrow over something, dejected position. crying.
2. Punishment over wrongdoing: gotten into mischief or a crime and is being punished (e.g. locked up) or in prison, mental institution. in a cell.
3. Suicide: thinking of or has tried to take own life.
4. Sleeping, tired: exhausted or tired after being played out.
5. Sickness.
6. Person is in trouble: (cause not specified)
7. Other.
8. Description.

CARD 3 GF

1. Death or loss: some loved one has died or left her, has lost date.
2. Bad news: just heard bad news, told something shocking.
3. Sorrow: grief, heart broken, crying.
4. Shocked by something she has seen: Saw something which upset her, seen something terrible, scared of what she saw, seen something tragic.
5. Marital or romantic frustration: had fight with husband or boyfriend fight in family.
6. Ashamed and remorseful: feels ashamed of self or something remorseful over some crime she has committed.
7. Other.
8. Description.

CARD 4

1. Comfort from partner: woman trying to comfort, console, counsel, conciliates, talks lovingly to man, gives advice. Tells not to worry.
2. Restraining or reasoning with man over violent or quick impulsive action: pleading, reasoning or attempting to restrain the man from violent or fighting action.
3. Departure from partner: asking, begging, pleading and trying to prevent his leaving her; doesn't want him to leave her; wants to stop him from leaving her over love conflict; turning away(physical) of husband, boy-friend; male figure.
4. Wanting him to do something he doesn't want to do: trying to talk him into something or get him to do something.
5. Begging forgiveness: asking forgiveness of partner.
6. Unrequited love:
7. Restraining (general): holding back.
8. Pleading (general):
9. Argument (general):
10. Conversation: two people talking - one person says something - to explain, tell or confide something.

CARD 5

1. Surprise: surprised, startled, astonished at what she sees: sees something that she did not expect to see. shocked at what she sees, shocked, finds S.T. shocking.
2. Horror, Disapproval: horrified or disapproving at what she sees.
3. Spying, peeking: spying or peeking or checking up on what is going on in the room, checking up on somebody.
4. Looking for or calling somebody in room: Looking for someone, seeing if anybody is in room, calling somebody or telling something to somebody, expecting to see someone, to see if somebody home, looking at something.
5. Looking for thief:
6. Curious or inquisitive:
7. Other.
8. Descriptive.

CARD 6 BM

1. Confession to parent figure: wants to say or tell something to 'mother figure', confessing or saying something which is or is not specified; said something he did not want to say.
2. Departure from parent or female figure: saying good-bye to mother, son is leaving home, going to leave.
3. Parental or authority pressure or disapproval: parent "gotten after son", censuring, quarrelling, hurting, disapproving, compelling by stating what to do, a misunderstanding, male and female figures not agreeing, disgust.
4. Bearing or waiting for bad news: son or male figure trying to or telling bad news such as trouble he is in, something unfortunate happened to one or both of figures.
5. Receiving consolation, succorance: male or female figures giving or receiving advice, consolation: trying to tell son or male figure to better self or vice versa.
6. Disappointment to parent or authority figure: disappointed in son, "prodigal son" returns, discontented over son, ashamed.
7. Parental concern: concern over something, worried.
8. Male figure concern: any reference to male figure as thoughtful, burdened, worried.
9. Both figures concerned: they are having a serious discussion about something. Both unhappy. He is upset - she is worried.
10. Other.
11. Description.

CARD 6 GF

1. Surprise: at what he has said, his unexpected appearance, amazed, stopped, jumped, startled, astonishment. shocked.
2. Conversation: talking, discussion. man speaking to woman or vice versa.
3. Female figure doing something secret or evil.
4. Disinterest or displeasure with male figure: not interested in what he is saying, does not like what he is saying.
5. Argument.
6. Counselling and advising: either figure explaining something or giving advice to the other figure.
7. Questioning: either figure asking the other some questions.
8. Sly, suspicious intentions of male figure: making passes, preying.
9. Other.
10. Description.

CARD 7 BM

1. Discussion: both figures having a conversation, gossiping, a talk, rumination, conference, chat, debate.
2. Succorance from older person: younger figure seeking advice, help or receives advice, comfort, sympathy, protection, information from older person.
3. Pressure or rebuke to younger figure: older figure lecturing, censuring, prohibiting, quarrelling with younger.
4. Thinking, listening or watching something by both figures.
5. Symbolism: Age and Youth - wisdom, difference between young and old.
6. Advice from older person not accepted: advice not accepted, rejected, that to be ridiculous, they are not agreeing.
7. Dysphoric mood: people characterized as being unhappy, worried (covers any unpleasant feeling)
8. Other.
9. Description.

CARD 8 BM

1. Operation: having an operation, being operated on, taking a bullet out, operation going on.
2. Aspiration: thinking about being a doctor in future, dreaming or hoping of future.
3. Aggression from im-  
personal source: as during a war, could be war picture, accidentally shot or hurt.
4. Daydreaming: imagining, visualizing, thinking about picture or operation in background. Nightmare, wondering if friend will pull through.
5. Aggression from  
personal source: man on table stabbed, shot, boy shot man on table.
6. Other.
7. Description.

CARD 8 GF

1. Dreaming: thinking, imagining, wishing (un-specified)
2. Dreaming: thinking, imagining something specified in present, past or future.
3. Loneliness, unhappiness,  
worried: a lonely woman, she is sad.
4. Posing: sitting for portrait, posing for artist, maybe modelling.
5. Contentment: contented, serene, looks happy or content.
6. Love: loving, in love.
7. Other.
8. Description.

CARD 9 BM

1. Resting and sleeping: snoozing, siesta, relaxation, taking it easy.
2. Drunkenness: sleeping off a drunk, passed out from liquor, too much to drink and sleeping it off, probably on a good tear.
3. Death: death and killing.
4. Tired, exhausted: they're exhausted - probably exceptionally tired.
5. Lazy, or individuals associated with laziness. having a nice lazy time. Hobos, bums.
6. Trouble: running away from law and hiding, in wrong.
7. Other.
8. Description.

CARD 9 GF

1. Spying: hiding, snooping.
2. Escape: running away from something, in flight.
3. Conflict between the two women: over love, rivalry or something. jealousy.
4. Anger: she looks mad.
5. Fear: terror, alarm, scared.
6. Hurry: going somewhere in a hurry, to meet someone (not running away); young girl running, two girls seem to be hustling towards something.
7. Other.
8. Description.



CARD 10

1. Departure from partner: don't want to leave each other, saying goodbye.
2. Love: kissing, embracing, affection, devotion, serenity, contentment, satisfaction, warmth, happiness.
3. Sorrow: grief, distress or sorrow over something, sadness.
4. Comfort: comforting, consoling, nurturance to partner, condolence.
5. Dancing:
6. Conversation: whispering, talking, saying something.
7. Other.
8. Description.

CARD 11

1. Escape from peril or animal: somebody running from others.
2. Aggression toward peers: physical harm inflicted or intended between animals or humans; fighting
3. Aggression from impersonal source: war, bombs, accident, nature.
4. Unreal, fantastic: something unreal, like from outer space or bad dream.
6. Animal or insect specified: grasshopper, dragon, wild animal.
7. Prehistoric times: prehistoric scene, prehistoric animals.
8. Other.
9. Description.

CARD 12 BG

1. Serenity: peaceful, serene, relaxing, quiet.
2. Spring or summer.
3. Snow: it is snowing, a snowfall.
4. Reference to people: they are boating, having picnic etc.
5. Other.
6. Description.

CARD 12 M

1. Hypnosis: mesmerizing, hypnotizing figure on the couch, casting spell.
2. Sickness, illness or death: figure on couch is ill, sick or dead.
3. Praying: praying over or blessing the figure on the couch who is sick, dead or sleeping.
4. Sleeping: figure on the couch is asleep or sleeping.
5. Sinister: has something evil in mind, trying to do something harmful.
6. Talking: somebody talking to figure on the couch.
7. Other.
8. Description.

CARD 13 MF

1. Death or sickness of partner: woman is dead, ill or sick.
2. Aggression toward partner: physical harm inflicted or intended on partner; murder or planning murder of woman.
3. Sorrow over illness or death of partner: worry, concern, pity or grieving over her death or illness.
4. Sorrow (crying), sadness, remorse: pity, anguish, no explanation.
5. Remorse or guilt: ashamed, sorrow, guilt over something he has done to the woman.
6. Love conflict: quarrel, fight.
7. Rape:
8. Man has had or is contemplating heterosexual relation with woman: May be illicit sex.
9. Other.
10. Description.

CARD 14

1. Looking, gazing at something: might, sky, moon sun, stars; heavenly bodies on view; looking or gazing out of window.
2. Intraception: thinking, wondering, dreaming, questioning himself.
3. Loneliness:
4. Suicide: going to jump or something.
5. Escape: climbing out of window, trying to get out of a place.
6. Favourable environment or tranquility: picture of calm, peacefulness; life is good, peace of mind; content with environment.
7. Aspiration: Man dreaming, thinking of his future, of what he is going to do; hoping for something better; making plans for future.
8. Other.
9. Description.

CARD 15

1. Death: dead reborn, death, lost wife or child, symbol of death, loathes death.
2. Loneliness: scared and alone, lost, all alone.
3. Figure represents undertaker: undertaker, embalmer, mortician, caretaker, graveyard attendant.
4. Unreal or evil figure depicted: Frankenstein, gruesome man, morbid-looking soul, skeleton, weird, vulture skeleton, ghost, spirit.
5. Religion: prayer, seeking consolation from God.
6. Mourning: paying last respects, visiting loved ones. Mourning or grief over death.
7. Dysphoric state: unpleasant emotional states characterized e.g. dreadful, unhappy, worried, depression.
8. Other.
9. Description.

CARD 17 BM

1. Self-esteem: self respect or enjoyment in skill, pride in skill, self-apprrobation, aspiring to strength.
2. Exhibition: showing off physical strength or skill.
3. Escape: escaping from peril, prison, fire or something or somebody.
4. Physical strength: description of muscular features of an individual who is traditionally associated with strength. Trapeze artist, aerolist.
5. Other.
6. Description.

CARD 17 GF

1. Men working: carrying things to put on boat, scene of labour, people bringing in harvest, unloading boats.
2. Suicide: she's not going to jump off bridge, girl ready to jump off bridge, could have idea of suicide.
3. Slavery: slaves, master-slave relationship, boss-worker relationship.
4. Piracy:
5. Something disastrous occurring: something has happened under water, something crude is happening, dark day for woman.
6. Symbolic contrast: despair and sun shining: part of world daytime - other part night.
7. Other.
8. Description.

CARD 18 BM

1. Escape: struggling to free self, escaping from someone.
2. Suicide: figure trying to commit suicide.
3. Restraining or arresting figure: holding or holding back, being arrested.
4. Fear or shock: looks frightened, state of shock, heard bad news.
5. Aggression toward peer: man is being attacked, "held-up" murder. being grabbed from behind. Struggle, in fight.
6. Drunkenness: intoxicated man.
7. Helping: held up, holding him up, supporting him.
8. Other.
9. Description.

CARD 18 GF

1. Strangling, killing, violence:
2. Illness: woman must be ill, dying, heart attack seems to have fainted, has collapsed.
3. Accident: fell downstairs.
4. Comfort: giving comfort, cuddling, helping, consolation.
5. Grief or unhappiness: something sorrowful may have happened, pity, despair.
6. Other.
7. Description.

CARD 19

1. Cold weather, winter, places depicting cold: Arctic, Iceland.
2. Storm: snowed in, blizzard, a gale wind blowing away, wind represented here, snowstorm.
3. Refers to person or persons in picture: someone is sitting by one of windows.
4. Abstract: artist's painting, modern art.
5. Unreal: haunted, weird, ghosts and witch.
6. Other.
7. Description.

CARD 20

1. Waiting: Waiting for somebody or something  
wasting time, loitering, procrastination.
2. Aggression: Secret agent, not very good intentions,  
looks like up to something, could be  
gangster.
3. Contemplation: thinking, wondering where to go, trying  
to forget trouble, rumination.
4. Loneliness: nowhere to go, nothing to do, all alone,  
jobless, friendless, homeless.
5. Other.
6. Description.