

THE CATEGORIZATION OF PERCEPTUAL REACTIONS TO  
THE THEMATIC APPERCEPTION TEST

by

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## Abstract

The primary purpose of this study was to formulate critical categories to adequately reflect the categorization or perceptual reactions of normal individuals to the picture stimuli of the cards of the Thematic Apperception Test.

An additional problem investigated was the comparison of the categorization reactions obtained from a "normal" sample in this investigation with those obtained from a "disturbed" sample in a parallel research conducted by Long (1960).

In order to form the critical categories and to compare the perceptual reactions of the "normal" group with those of the "disturbed" group, categorization reactions to twenty-six cards of the TAT were obtained from forty Vancouver Vocational Institute students. Following the empirical development of the categories, a comparison of the differences in frequency count of the categorization reactions of the two groups was explored utilizing a chi square statistic.

A total of two hundred and sixteen categories were obtained for the twenty-six cards. In a comparison of the frequency distribution of the categorization reactions for the "normal" and "disturbed" groups, insignificant differences were found on one hundred and ninety-seven categories suggesting that the perceptual reactions of the two groups do not vary greatly. However, compared with the "normal" group, the "disturbed" group showed a marked tendency for restricted transcendent production as indicated by a majority of "disturbed" persons giving purely descriptive responses on twenty-four of the twenty-six cards. This difference was found to be significant on eight of the cards.

An additional comparison was made, employing a chi square statistic, of the differences between the two groups

in the frequency distribution of subjects giving nil-single or multiple perceptual responses. On twenty-five of the cards, more "normals" than "disturbed" subjects gave multiple responses. This variance was found to be statistically significant on nine of the cards.

Nineteen of the two hundred and sixteen categories were found to produce statistically significant differences in the frequency distribution between the two samples. The "Description" category accounted for eight of these differences and various transcendent categories accounted for the remaining eleven.

Fourteen cards produced one or more categories showing a reliable variation in distribution between the "normal" and "disturbed" groups. Of this number, eleven cards showed significant differences in one category, one card in two categories and two cards in three categories.

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## CHAPTER I

### THE STATEMENT OF THE PROBLEM AND THEORETICAL BACKGROUND

#### The Statement of the Problem

The primary purpose of this study is to categorize the perceptual reactions of normal individuals to the cards of the Thematic Apperception Test. In order to obtain these perceptual or categorization reactions, normal subjects will be asked to describe what they see during a twenty-second exposure to each of the TAT cards. The requirement of a description of the cards by the testee differs essentially from the usual procedure of asking the subject to tell a story and is necessary if categorization reactions, or what Rosenweig (1949) calls apperceptive norms, are to be obtained as distinct from thematic norms which are produced by asking the subject to tell a story to the cards. These card descriptions will then be assigned to categories which have been empirically determined from these perceptual reactions.

The empirically-derived categories, determined by the response statements, will cover need states such as achievement, exhibition, nurturance, aggression and succorance; emotional states such as love, contentment, sorrow, frustration, remorse, shock, fear and anger; physical states such as fatigue,

sleep, illness, death, drunkenness and hypnosis; passive states representing an individual in trouble or receiving punishment; activity states including departure, argument, conversation, counsel, intraception, curiosity, escape, conflict, spying, prayer; and finally, references to persons, animals, birds and events, present, past or future, that are not physically depicted in the respective pictures. In addition, each card will possess two common categories, namely "Other" and "Description". The "Other" category will be allotted to transcendent perceptual responses that cannot be placed in any of the given categories for a TAT card. The "Description" category, on the other hand, will be assigned to the purely descriptive responses which do not involve thematic elements.

The formulation of the categories for each of the TAT cards is the initial aim of this study and represents the first and basic step in a series of research studies designed to test the implications of a "new avenue of approach to the stimulus properties of thematic cards, particularly that of ambiguity" developed by Kenny (1959). In addition, this study will compare the categorization reactions of a "normal" group obtained by the author with those of a "disturbed" group recorded in a parallel study by Long (1960) to determine whether there are any significant differences between the two samples.

The conceptual model evolved by Kenny (1959) and outlined herewith relates this particular research to the two main issues involved in laws governing behaviour to apperceptive techniques, namely, one, the relevance of the stimulus properties of the TAT pictures in the determination of thematic stories, and two, the relationship between the thematic stories and the level of personality functioning.

### The Model

The stimulus factor in thematic apperception research has been largely overlooked. This has been particularly evident in regard to the Thematic Apperception Test, where, although there has been a cumulative amount of research over the past quarter of a century, relatively little of it has recognized the importance of the stimulus itself. Kenny advances three reasons for this minimal research relating to the stimulus, namely, one, the confusion surrounding the meaning of the stimulus; two, the difficulty of measuring the stimulus dimensions of thematic cards; and three, a general minimization of the important role that stimulus factors play as determiners of behaviour including fantasy production.

Kenny has developed a theoretical model, which is derived in part from some of Piaget's (1952) contemporary ideas,

Kanfer's (1956) analysis of perception and Bartlett's (1932) notion on schema, and which opens up a new approach to the appraisal of stimulus factors in the TAT. In this conceptual model "changes in sensory input are assimilated into 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 passive reception by the individual, but, on the contrary, is an active process of identifying or 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 the TAT protocols, the categorization process is assumed to be primarily preconscious, that is, it is readily available in awareness" (Kenny, 1959).

A critical role, in the model, is played by the categorizing or perceptual reaction which is not to be confused with the physical stimulus emanating from the thematic picture. Rather, the categorizing reaction is an activity of perception, the labelling or identifying of the stimulus card and is evident in the following example of a response given to card 2,

namely, "This girl wants to leave the farm". It is obvious that such a statement transcends the stimulus properties of the TAT card.

Once the categorization process occurs "the picture stimuli should only play a minimal role in the determination of a particular thema". Accepting this premise, it may then be hypothesized that "any procedure which arouses a categorization reaction similar to the one of a picture stimulus should produce the same kind of thema or story content as the picture stimulus", and conversely, "procedures which change the categorization reaction to picture stimuli should produce changes in story content".

Moreover, previous research demonstrating that need affects perception, has shown that the psychological variables of past experience, motivation, set and ability, although they are the main variables determining categorization, have a greater influence on schematic processes. As a result of these findings, it is reasonable to hypothesize "that the categorization process will be more highly correlated with the stimulus properties of the picture stimuli than will be the fantasy story".

To discover what stimulus dimensions of a thematic card determine the categorizing reaction, systematic manipulation of the structural properties of the picture will be

necessary. If the stimulus shift brings a change in the categorizing reaction then critical stimulus dimensions correlated with perception have been isolated and change in the thematic content of the story should follow. If the stimulus change produces no corresponding alteration in the categorizing reaction then these critical stimulus dimensions have not been isolated and crucial changes in themata would not take place.

Kenny and Bijou (1953) and Murstein (1958b) have shown that a curvilinear relationship exists between ambiguity and the personality factors revealed. To test his model in regard to ambiguity and personality revealingness, Kenny has defined and measured perceptive ambiguity as opposed to physical ambiguity.

Physical ambiguity can be defined in terms of physical impoverishment. But stimuli, as such, are never ambiguous. Ambiguity lies only in the perception of the picture stimuli. Thus, perceptual ambiguity occurs when there are different categorizing reactions between persons or different categorizing reactions within the same person at different times.

Three main procedures have been employed in past studies to measure picture stimuli differing in degree of perceptual ambiguity. In the subjective consensus method the judges have rank ordered the thematic cards on the basis of

their ambiguity. The main criticism of this technique has been its deficiency in respect to weighting the different categorization alternatives. In the normative procedure partially-drawn stimulus pictures of common subjects or objects have been shown to subjects for identification purposes. In this method the normative index of a card has been based on more than fifty per cent of the subjects correctly identifying the stimulus figure. The remaining cards have been considered ambiguous. This method has been limited to picture stimuli of objects that permit no degree of recognition, only right and wrong, and has possessed shortcomings in weighting the different categorizations. In the third procedure, the thematic checklist or ranking method, the subjects have been requested to rank order a list of needs or goals considered depicted in each of the thematic cards. By computing the average intercorrelation between the rankings on a given picture by all the judges, a measure of ambiguity has been obtained. For example, if the average intercorrelation has been low, then a picture has been considered ambiguous. And conversely, when the average intercorrelation has been high, a picture has been considered less ambiguous or highly structured. The main criticism of this technique has been that it has both failed to account for the weighting of the proportion of subjects giving different categorization reactions, and, by providing the subject



with needs, has appeared to define the ambiguity of thematic cards in terms of themata rather than stimulus ambiguity. Kenny has abandoned these three procedures in favor of a newly-developed technique, which, because it both accounts for weighting and relates the picture stimuli to perceptual reactions, may be superior to previously-employed methods.

To arrive at this technique, Kenny recognizes 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 or individuals making any given categorization". Since the quantitative measure of uncertainty from information theory, as Kenny points out, does take into account these two dimensions of perceptual reactions to stimuli, namely, the range of responses and the definiteness level of the responses, he has utilized this measure to arrive at a suitable index of ambiguity for the thematic cards.

To obtain the categorization reactions to the picture stimuli necessary for the application of this quantitative index of ambiguity, Kenny has proposed the following steps. The first step is to have subjects examine each TAT card for twenty seconds, and, with the card before them, to describe what they see. The second step is to assign the card descriptions on an empirical basis to categories that seem best to reflect the perceptual reactions. The third phase is to provide a checklist of the main critical categories to sub-

jects and have them check the category which they think best describes what they see in the card. The uncertainty measure will then be applied to this data in order to arrive at a quantitative index of ambiguity for each of the thematic cards.

Having developed a new measure of ambiguity, Kenny explores the relevance of his model to "personality revealingness" since empirical data has established that a relationship exists between ambiguity and the revelation of personality factors. For his model he hypothesizes that there will be a "linear relationship between ambiguity and personality revealingness in the case of subjects with mild-to-moderate drives and a curvilinear relationship between ambiguity and personality revealingness for subjects with strong drives". Furthermore, he would make the following prediction, "as the non-social aspects of thematic cards are increased, personality revealingness should decrease", and as the non-social aspects of thematic cards decrease, ambiguity should increase.

The next step is to proceed with research calculated to test the implications of this theory. The initial and basic phase of research projected by this theoretical model is the formulation of critical categories to sufficiently portray the perceptual reactions of normal individuals to picture stimuli of the TAT cards. This is the primary purpose of this

particular study. An additional concern of this research is to compare the frequency distribution of the categorization reactions to the individual TAT cards of a "normal" group tested by the author with that of a "disturbed" group examined by Long (1960) in a similar study.

When this present investigation is completed, the categories, thus formed, will then be available for future study, specifically, the checking of the critical categories by another sample of subjects. The uncertainty measure can then be applied to the obtained data to arrive at a quantitative index of ambiguity for each of the Thematic Apperception Test cards.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### The Thematic Apperception Test

Since the original set of Thematic Test cards was devised by Murray and Morgan (1935), there have been three revisions. The cards in use at the present time represent the third revision and were published in 1943. The purpose of this test, commonly known as the TAT, is explained by Murray (1943) as a "method of revealing to the trained interpreter some of the dominant drives, emotions, sentiments, complexes and conflicts of personality". That this is not an easily obtained goal is recognized by Murray in his manual when he discusses the problem of training an interpreter to objectively evaluate the personality variables. The most frequent criticism of the interpretations of thematic stories has been their dependence on subjective measures and their reliance on the reputation of the individual for whatever success the TAT has achieved in clinical use. Some empirical findings of value have been obtained on the TAT up to the present time but there is still a great paucity of objective data available. This has resulted in the vulnerability of clinical interpret-

ations to the bias of the examiner and has imposed a limitation on the value of the TAT.

Much research has been directed towards the attainment of empirical evidence on laws governing apperceptive techniques but few actual adequate approaches have been devised. To overcome this lag it will be necessary to work towards a solution of both conceptual and measuring problems. However, it is reasonable to expect that continuing research efforts in this area will eventually bring rewarding results.

#### New Conceptual Approaches to Stimulus Factors in the TAT

In Chapter I, a conceptual model proposed by Kenny (1959) has been outlined which suggests a completely new approach to the problem of ambiguity and personality revealingness. A second model has been advanced by Murstein (1959) as developed by Helson (1955). Helson's theory of Adaptation Level proposes to account for the interaction of three stimuli determinants of projective responses, namely, the stimulus in the focus of attention, all the stimuli which form the background and finally residuals from past experience. To represent this theoretical "adaptation-level" and hence the adjustment of the organism, Helson introduces the follow-

ing formula:  $\log A = p \log X$  (stimulus) &  $q \log B$  (background) &  $r \log R$  (residual) with  $p$ ,  $q$  and  $r$  the weighting factors. To what research application this formula could be put has, as yet, not been specified by Murstein. However, there is no question it deserves attention for its emphasis on the stimulus factors.

#### A Review of Research on Stimulus Variations in the TAT

Because this study concerns itself directly with "card pull" which infers that each picture has its own stimulus properties that elicit relevant personality response data peculiar to it and different from that evoked by other pictures, the major part of the literature survey will be delimited to this particular aspect of TAT research. However, because research of stimulus properties must necessarily include variations in the stimuli, the empirical findings in this area recently compiled and interpreted by Murstein (1959) will be briefly outlined.

One form of varying the stimulus is to reduce the brightness of the TAT picture. Weisskopf (1950a), investigating these conditions of normal and reduced brightness in the TAT cards, obtained no significant differences in transcendence scoring (mean number of responses going beyond pure description). Bradley and Lysaker (1957), in a similar study

with a TAT-type picture, found no difference in the productivity of responses. However, when the content of association with reference to the picture was analyzed, they did find that a positive linear relationship existed between increasing degrees of darkness and pleasantness of association. On the other hand, as lightness was increased, although a slight increase led to more pleasant responses, any further increases resulted in diminishing pleasantness of association.

In studies, varying the "ground" of the pictures, Weisskopf (1950b) and Weisskopf-Joelson and Lynn (1953) obtained data showing that completely traced line drawing produced more fantasy than incompletely traced ones. In an experiment, altering the background of a TAT-type picture, Bradley and Lysaker (1957) found that such alteration had little effect on fantasy production provided the central figure remained clear.

Similar results were obtained in studies changing the central figure. Weisskopf-Joelson and Money (1953), modifying the central figures both by drawing in neutral facial expressions and substituting photos of the subjects' faces, found no significant differences in the transcendence index and word content between the neutral and photo set. However, Weisskopf and Dunlevy (1951) utilizing normal, crippled and obese groups of subjects examined each subject on three sets

of cards having unmodified, crippled and obese central figures respectively. The mean transcendence index for the "obese" cards was significantly less than for either the "crippled" or "normal" cards. They suggested that probably this variance could be accounted for on the basis of the cultural appraisal of obesity and crippledness.

A further stimulus factor that was found to have an effect on fantasy responses was the race of the examiner. In a study utilizing colored and white subjects and both colored and white examiners, Schwartz, Riess and Cottingham (1951) obtained data showing that the nature of the response can be affected by the race of the examiner.

Much attention in the study of stimulus variations has been directed towards ambiguity of the TAT cards and the relationship of this stimulus ambiguity to productivity, personality revealingness and pleasantness. Kenny (1954) and Murstein (1958b) have found the relationship between psychological ambiguity and productivity of response to be a curvilinear one. The same curvilinear relationship has also been discovered by Kenny and Bijou (1953) to exist between ambiguity and the meaningfulness of stories for personality evaluation. In this regard it has been found that the medium-ambiguity group of TAT pictures produced the most revealing



stories. On the other hand, the relationship between ambiguity and pleasantness of stories was found by Murstein (1958a) to be a positive one with pleasantness increasing as ambiguity increases. Murstein (1959) suggests several reasons for this latter finding, namely one, that the most highly structured cards on the TAT are negatively structured and thus more likely to evoke unpleasant themes; two, that the personality needs of subject and background factors do take on more importance as the stimulus pull becomes weaker; three, there are cultural reasons for seeing good; and four, that because the majority of subjects used in these experiments are university students, the exceedingly ambiguous picture may cause him to put "his best perceptual foot forward". However, Murstein makes the observation that when it comes to a consideration of the relationship of sex differences to stimulus ambiguity, little is known.

An experiment with TAT pictures by Kenny (1954) in which the time of exposure of the cards was varied, has shown that, provided the subject may view the cards for at least a few seconds, any effects obtained by varying this time exposure are insignificant. When the time exposure was extended to two minutes over a five-second exposure, negligible effects were obtained. However, if, on the other hand, the picture was presented for only a fraction of a second, it

was shown by Weisskopf (1950a) that the productivity of the response was seriously affected.

### Related Research on Picture "Pull"

#### Normative Studies

Two main studies have attempted to obtain norms for certain of the cards in the Thematic Apperception Test. The earliest one was an empirical investigation made by Rosenweig and Fleming (1949) to establish apperceptive norms for certain cards of the 1943 set, namely 1, 2, 4, 10, 13MF, 14, and 16 (blank card) used in common with both sexes; cards 3BM, 6BM, 7BM, 8BM, and 18BM employed with men only and cards 3GF, 7GF, 9GF, 12F and 18GF employed with women only. Using as subjects 50 men and women ranging in age from 20 to 40 years, they matched them in pairs for age, education, religion, number of siblings and marital status. From the results, norms were obtained determining the common ways in which the cards were described and interpretively used by a group of normal men and women.

The second study in this particular area of research was initiated by Eron (1950) to furnish TAT norms for use in the clinical situation. Employing a sample of 150 subjects, he divided them into six groups of 25 individuals in order to simplify statistical procedure and to obtain experimental control over any group characteristics that might occur. Two normal groups of college students were included so that

if significant differences between the six groups occurred it could be determined if they were more extensive than differences ensuing between the two sample normal groups. In addition to these two normal groups, the following were included: non-hospitalized psychoneurotics, hospitalized psychoneurotics, hospitalized schizophrenics and general neuropsychiatric hospital patients. The six groups were compared with each of the other groups on each of the following six variables: emotional tone, outcome, shift in tone from body of story to outcome, perceptual distortions, themes and level of interpretation.

Eron interpreted his results as evidence that various clinical groups do not vary significantly from one another or from a normal group in fantasy production when all six variables are considered. In view of these findings he recommended that the TAT not be used as a diagnostic instrument in the sense of distinguishing between nosological groups. Specifically, he found the two normal groups to be most similar with only six overall significant differences evident between them. Next in order of similarity were the first normal sample and the non-hospitalized psychoneurotic group with ten significant differences, followed by the second normal sample and the non-hospitalized psychoneurotic group

with eleven significant differences. Thus the three non-hospitalized groups appeared to be the most similar with greater differences appearing between these groups and the hospitalized groups. Moreover, he found that fantasy productions, particularly in emotional tone, were affected by the present environment of the subjects. This was manifested when the three hospitalized groups told more neutral stories than did the three non-hospitalized groups. In addition, with respect to the variable, the level of interpretation, he found that the three hospitalized groups gave significantly more descriptions than each of the non-hospitalized groups. Eron suggested that the reason for this latter was that the non-hospitalized subjects seemed more willing or able to cooperate by following the directions.

It should be pointed out that another interpretation of Eron's findings is possible. It may be that the general "restrictiveness" of hospitalized subjects is not necessarily the result of hospitalization or confinement but may possibly occur independent of it. That is, the longer an individual remains in a neurotic state, the more constricted his personality functioning may become. Thus, the differences that Eron found might not necessarily result from hospitalization, per se, but from a generalized constriction,

the degree of which depended on the length of time spent in the neurotic state. If this were the case, then the group of non-hospitalized psychoneurotics resembled the normal group more closely than the hospitalized groups because they were probably in a mild or early neurotic state.

In summation, Eron stated that the stimulus factors of the cards appeared to be as important in determining a subject's responses as the clinical group to which he belonged. Following an analysis of the number of themes evoked by 20 cards he reported that some TAT pictures were more stimulating than others. His ordering of the 20 male series cards for stimulatory value based on the responses of 150 subjects is reported in Table 1.

#### Some Quantitative Studies on the TAT

The following studies are essentially similar in that the investigators of the respective researches are generally attempting to determine what stimulatory value the TAT cards may have, and alternatively, the amount and kind of response material elicited by the different thematic cards. The studies by Weisskopf (1950a); Ullmann (1957); Gurel and Ullmann (1958); Eron, Terry and Calahan (1950); and Lindzey and Goldberg (1953), tend to place the emphasis on the stimulus value of the cards as measured by the responses while the

TABLE 1

Rank Order of Pictures on Basis of Number of Themes Which  
Each Elicits (Eron, 1950)

Stimulatory Value	Picture	No. of Themes
1	13MF	456
2	20	421
3	18BM	413
4	6BM	395
5	3BM	373
6	4	361
7	12M	352
8	15	340
9	7BM	316
10.5	10	301
10.5	17BM	301
12	8BM	287
13	9BM	273
14	14	264
15	5	255
16	2	239
17	1	237
18	19	225
19	11	202
20	16	199

studies by Coleman (1947), Wittenborn (1950), and Knehr, Vickery and Guy (1953) tend to emphasize the response verbalizations in contrast to the stimulus value of the cards. Though the procedures vary and a variety of scoring measures are employed, the data appears to provide evidence that there are individual differences in the "pull" value of different cards.

Weisskopf (1950a) introduced a transcendence index as a proposed quantitative measure in the TAT. Using only TAT pictures with human figures depicted, she instructed the subjects to describe the TAT pictures. By determining the number of comments that went beyond pure description for each subject and each picture she arrived at a measure of transcendence which was the mean number of comments per subject. Utilizing this measure, Weisskopf found that the five pictures with the highest transcendence indices were 6BM, 7GF, 7BM, 2, 4 and the five pictures with the lowest transcendence indices were 12M, 13GF, 17GF, 20, 9BM.

In a study on the productivity and the clinical use of the TAT cards (the male adult series), Ullmann (1957) hypothesized that some TAT cards would evoke more material than others. Moreover, he stated that if this hypothesis was supported by the evidence, then he would advance a second hypothesis that clinicians tend to select cards which

elicit more material. To test the validity of these hypotheses he employed as a sample the five most recent protocols obtained by 35 (24 male and 11 female) clinical psychological trainees on male subjects ranging in age from 19 to 59 years at a psychoneurotic hospital. Utilizing as his measure an emotional-word-count, Ullmann obtained significant results showing that some cards do elicit more material than others. In addition, he reported a significant relationship between the frequency of use of cards by the examiner and the median number of emotional words per card as shown on Table 2.

Gurel and Ullmann (1958) in a follow-up study, utilizing the transcendence-score measure, hypothesized that there were significant differences among TAT cards in the amount of material elicited by these stimuli, and furthermore, that there was a positive correlation between the ordering of the TAT cards for two methods of measure, namely, Weisskopf's (1950) transcendence score and the emotional-word-count as employed by Ullmann (1957) in his previous study. Scoring the TAT protocols of 100 male neuropsychiatric patients to the 20 male adult cards they found their first hypothesis accepted with a high degree of statistical significance. They also found the ordering of the adult male series from the highest to the lowest transcendence score to be 6, 4, 13, 7, 2, 3, 8,



TABLE 2

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

Card	FrU	#Ex	Mdn.EW
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

12, 1, 20, 10, 18, 16, 9, 14, 15, 17, 5, 19, 11. Comparing this ordering determined by the transcendence-scoring method with a previous ordering arrived at by an emotional-word-count, they found a correlation of .85. Despite these valid results, Gurel and Ullmann pointed out certain limitations of their particular research. First, they recognized that they had obtained these results on a limited population. Secondly, despite the high correlation between the two ranking, it could be possible that the two orderings might yield somewhat different results in particular researches. They arrived at this conclusion by comparing both Ullmann's first ordering of the three levels of ambiguity by emotional-word-count and Gurel's and Ullmann's second ordering by transcendence scoring with a similar ranking by Bijou and Kenny (1951). The first ordering of the levels of ambiguity showed no statistical correlation while the second ordering was found to be statistically significant when compared with Bijou and Kenny's ordering of ambiguity levels.

Because little information was available on the stimulus properties of the TAT cards Eron, Terry and Calahan (1950) proposed a study for the purpose of investigating the differential stimulus value of the various TAT cards by empirically-derived rating scales. They were also interested in finding out if there were any characteristic sex differ-

ences in the cards studied. Employing 50 male and 50 female college students and using the 20 TAT cards recommended for use with adult subjects (12 cards in common and 8 cards different for "male", "female" series) they empirically developed a five-point scale with two minus categories indicating degrees of sad feeling tone, the zero category representing neutral feeling tone and the two plus categories denoting degrees of happy feeling tone. The 100 protocols for each card were rated according to this scale. An examination of the rating scales for each card showed that only a few evoked stories that varied in feeling tone among the subjects more than two or three intervals. The investigators suggested that this would indicate that the card pictures had more influence on the emotional story told than the subjects' projections. Furthermore, by determining the mean ratings for the emotional tone of the TAT cards for men and women, it was found that the TAT pictures elicited essentially sad stories with the male stories generally less sad. These findings, showing sixteen of the twenty means for men and all twenty means for women to be negative, are reported in Table 3. Also reported is the rank order of each card for men and women with the saddest card given a rank of one and the least sad cards the rank of twenty. Eron, Terry and Calahan (1950. p 478), concluded that "these findings demonstrate that each of the TAT cards

TABLE 3

Mean Rating of Emotional Tone of TAT Cards  
(Eron, Terry, Calahan, 1950)

Card	Rating		Rank Order*	
	Men	Women	Men	Women
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.

has a stimulus value of its own which determines very largely the emotional tone of the stories offered in response to it".

In a study of motivational differences between the male and female sexes, and reported later in this review, Lindzey and Goldberg (1953) made a further investigation of the assumption that responses to the TAT are determined by the nature of the stimulus material as well as by factors within the individual. They examined the stories for systematic differences elicited by each card on each of seven variables. They found, that the picture to which the story told, influenced the ratings assigned to these stories. Significant differences in both mean and variability of ratings were noted. A grouping of the cards evoking similar mean ratings on each of the seven variables is detailed in Table 4. The general consensus of the investigators was that their findings supported "the view that TAT stories and quantitative scores assigned to them are a function not only of chance and personal contributions of the subject, but also of the stimulus constraints imposed by the picture presented".

Coleman (1947) attempted to make some quantitative observations of Murray's 1943 set of Thematic Apperception Test cards by determining the productivity of the various pictures. Using as subjects 41 children between the ages of

TABLE 4

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

Variable	High mean	Low mean
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	

8 and 15 years, he scored their responses to two ten-card matched sets, A and B. As a scoring measure he utilized a five-category classification developed by Gerver (1946) ranging from a first level of "no response" through to a fifth level with "two criteria of response". His findings showed the most productive pictures to be 3GF, 6BM and 18GF in that order. The least productive picture, which fell considerably below the mean level of response for all pictures, was shown to be card 11. In addition, Coleman employed the interpretive responses, determined by grading at the fourth and fifth levels in the five-category classification, to draw up a table showing the predominant emotional tone of these responses for each picture of the selected TAT cards. Coleman's results are reported in Table 5.

Investigating the problem of whether verbalizations produced in response to the TAT cards and used as evidence of important characteristics of the patient are valid, Wittenborn (1950) selected 100 Yale undergraduates and classified their responses to selected cards. His classification of these responses is reported in Table 6. To evaluate the assumptions that superficially similar productions sample trait behaviour and that certain dissimilar productions are dynamically related to each other, he examined respectively three different

TABLE 5

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

Picture	Plot			Ending		
	Unhappy	Neutral	Happy	Unhappy	Neutral	Happy
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
3BM	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 6

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

Card	Figures	Role Ascribed in Response	Response Group Number	Frequency
7BM	Boy	Impetuous	1	18
		Compliant	2	28
		Conflict	3	18
	Man	Objective and sympathetic	4	60
7GF	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
6GF	Man	Friendly	13	33
		Suspicious	14	22
		Preying	15	34
	Woman	Evil	16	24
		Good	17	66
6BM	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
9BM		Workers	25	49
		Idlers	26	35
13MF	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

sets of intercorrelations. The former assumption was not supported by the data and Wittenborn, suggested, in view of these findings, clinicians should use caution in attributing "trait significance to the multiple appearance of TAT response roles or themes which are superficially similar to each other" (1950 p.224). The second assumption was considered accepted although Wittenborn pointed out that these findings might vary depending on how the responses were categorized and depending on what emphasis an investigator gave to a particular response category.

Knehr, Vickery and Guy (1948), like Wittenborn, were interested in utilizing the TAT stories to explore problem-action responses and emotions to determine if dynamic material, not obtainable by other means, was available. However, where Wittenborn's interest was of a general nature, Knehr, Vickery and Guy were also specifically interested in ascertaining if any distinguishing personality characteristics of alcoholics could be determined. A selection of 78 subjects was made composed of 33 persons (21 males and 12 females) evincing alcoholism and 45 individuals (23 males and 22 females) described as non-alcoholic patients with assorted difficulties. Because of possible sex differences in responses to the TAT pictures, common cards 1, 2, 4, 5, 10, 11, 13, 14, 15, 16, 19 and 20 were chosen. Results as judged by physicians' state-

ments indicated that TAT analyses confirmed rather than supplemented dynamics revealed in early therapy. A review of problem-action distributions for each card indicated that the cards tended to produce a pattern of their own regarding the kinds of problems the characters face. There appeared to be a marked controlling influence by the cards, despite varying strength for individual cards, to affect the nature of the problem as shown in Table 7. However, this influence diminished with story character responses and showed considerable variability as seen in Table 8. This would suggest that TAT pictures were relatively structured as to the nature of the plots indicated, with less structuring existing in the case of actions ascribed to the characters.

#### Studies Relating to Ambiguity

Turning now to studies on ambiguity, which has been defined by Kenny and Bijou as the estimated number of possible interpretations elicited by a picture, we find the major part of the research in this area has been achieved by Bijou and Kenny. In their initial investigation Bijou and Kenny (1951) undertook to examine the problem of the degree of ambiguity of 21 TAT cards. Utilizing 28 male and 23 female judges to rank order the cards as to degree of ambiguity, the results reported in Table 9 were obtained. Further observation showed that cards 12BG, 1, 2, 9BM, and 17BM had the lowest median

TABLE 7

Variations in Problems or Themes Induced by Different TAT Cards Shown by the  
Distribution of Frequencies expressed as Per Cent.\*  
(78 patients)  
(Knehr, Vickery, Guy, 1948)

Card No.	Problems										
	Heterosexual Conflicts	Homosexual Conflicts	Sex triangle	Conflict with authority	Use made of power	Situational hope	Situational fate	Ethical standards	Personal adequacy	Alternative courses of action	None Indicated
1	-	-	-	44.9	-	16.6	2.6	2.6	14.1	7.7	11.5
2	2.6	-	6.4	15.4	-	44.9	1.3	-	2.6	15.4	11.5
4	62.8	3.8	20.5	1.3	-	7.7	-	1.3	1.3	-	1.3
5	7.7	1.3	3.8	11.5	12.8	23.1	1.3	3.8	-	-	34.6
10	14.1	3.8	1.3	1.3	-	19.2	19.2	1.3	5.1	-	34.6
11	-	1.3	1.3	10.3	23.1	32.1	5.1	-	2.6	1.3	23.1
13	21.8	-	5.1	1.3	1.3	7.7	24.4	25.6	5.1	3.8	3.8
14	2.6	-	-	6.4	1.3	34.6	-	-	9.0	6.4	39.7
15	6.4	-	-	3.8	5.1	14.1	20.5	14.1	7.7	-	28.2
16	1.3	1.3	2.6	3.8	2.6	24.4	3.8	3.8	10.3	-	46.2
19	1.3	1.3	1.3	6.4	1.3	30.8	2.6	-	2.6	-	52.6
20	14.1	-	2.6	5.1	2.6	39.7	1.3	3.8	10.3	9.0	11.5

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

TABLE 8

Variations in Behavioral Response Patterns Induced by Different TAT Cards shown by the  
Distribution of Frequencies Expressed as Per Cent\*

(78 patients)

(Knehr, Vickery, Guy, 1948)

Behavioral Response	Card Number											
	1	2	4	5	10	11	13	14	15	16	19	20
Aggressive Attack	1.3	-	2.6	3.8	1.3	26.9	15.4	2.6	5.1	6.4	-	11.5
Retribution or Revenge	-	-	2.6	9.6	-	-	1.3	1.3	3.8	2.6	1.3	-
Constructive Agression	23.1	41.0	19.2	7.7	5.1	10.3	10.3	12.8	7.7	6.4	3.8	5.1
Rational Approach	2.6	12.8	28.2	7.7	6.4	1.3	2.6	7.7	6.4	3.8	5.1	10.3
Sensuous Gratification	-	-	1.3	3.8	1.3	-	5.1	-	-	1.3	1.3	-
Compromise	1.3	-	-	1.3	-	1.3	-	-	-	-	-	-
Seeks Help	7.7	-	2.6	1.3	14.1	2.6	3.8	2.6	7.7	3.8	6.4	9.0
Passive Hostility	6.4	1.3	1.3	1.3	-	-	2.6	1.3	2.6	-	1.3	1.3
Anxious Suspension of Activity	3.8	-	-	2.6	-	1.3	1.3	-	-	2.6	-	1.3
Acceptance of Situation	2.6	14.1	1.3	20.5	24.4	5.1	7.7	11.5	9.0	14.1	9.0	10.3
Irrational, Ill-directed Activity	-	-	1.3	1.3	-	1.3	1.3	-	1.3	-	1.3	1.3
Submission	16.6	5.1	9.0	7.7	3.8	3.8	7.7	2.6	1.3	1.3	3.8	2.6
Avoidance	-	1.3	2.6	1.3	1.3	-	1.3	-	-	1.3	-	1.3
Resignation	7.7	7.7	5.1	9.0	12.8	3.8	16.6	11.5	16.6	10.3	2.6	20.5
Active Withdrawal	11.5	5.1	20.5	7.7	5.1	21.8	9.0	6.4	5.1	5.1	2.6	7.7
Suicide	-	-	-	2.6	-	-	6.4	1.3	2.6	2.6	1.3	2.6
No Action	12.8	9.0	1.3	17.9	24.4	20.5	6.4	38.5	29.5	37.2	60.3	10.3
Alternative Actions (Unresolved)	2.6	2.6	1.3	-	-	-	1.3	-	1.3	1.3	-	5.1

\* The columns add to 100.0 + a small error due to rounding of figures.

TABLE 9

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	12BG	1.00	5.07	6.19
2	1	6.00	6.96	4.80
3	2	7.00	8.45	5.31
4	9BM	7.00	8.00	5.19
5	17BM	7.00	8.80	7.30
6	13B	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	7BM	12.00	12.47	4.72
11	8BM	12.00	11.49	2.53
12	12M	12.00	11.84	5.24
13	13MF	12.00	11.86	5.19
14	20	13.00	9.07	5.49
15	3BM	13.00	11.78	4.74
16	6BM	14.00	12.47	4.53
17	5	14.00	13.15	5.31
18	15	15.00	12.60	6.45
19	18BM	17.00	14.84	5.10
20	11	18.00	13.52	7.63
21	19	19.00	14.82	7.00

rank values and were therefore the least ambiguous and the most highly structured. Cards 4, 7BM, 18BM, 12BM, and 13MF were rated to possess intermediate rank values while cards 5, 15, 18BM 11 and 19 had the highest rank orders and were thus, the most ambiguous or low in structure. The ambiguity rank orders for these 15 cards is reported in Table 10.

In a later study Kenny and Bijou (1953) took the three ambiguity groups of TAT cards detailed above and utilizing three examiners (2 male and 1 female) and employing 18 male college students as subjects they obtained 90 protocols for each level of ambiguity. To measure the extent of the personality factors for each level, a modification of Stephenson's Q-array technique was used with two well-qualified clinical judges sorting the stories into each of nine categories depending on the amount of personality factors revealed. Personality scores for the medium-ambiguous group was found to be significantly higher than the personality scores of either the least or more ambiguous groups. Furthermore, no significant difference was established between the high and low ambiguous groups. In addition to these results it was determined that the behaviour of the examiner and the nature of the instructions given played a role in the fantasy production.

Kenny (1954), in a follow-up study of research performed by Kenny and Bijou (1953), explored the relationship

TABLE 10

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

Final Rank	Picture Designation	Description
1	12BG	A rowboat on the banks of a woodland stream.
2	1	A boy and a violin which rests on a table in front of him.
3	2	Country scene: Young woman in foreground with books; in the background, a man working in the fields and an older woman looking on.
4	9BM	Four men in overalls are lying on the grass.
5	17BM	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	7BM	A gray haired man is looking at a younger man who is staring into space.
10	8BM	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	12M	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	13MF	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 is 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.
19	18BM	A man is clutched from behind by three hands.
20	11	A road between cliffs, and obscured 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.



between the ranking of the TAT cards for revealingness of personality by both the Q-array and Weisskopf's transcendence measure. The rank-order correlations were found to be reliably significant thus supporting Weisskopf's presumption that transcendence indices are related to personality revealingness in TAT pictures. In this same study, Kenny classified the transcendence scores under three sets of pictures varying with increasing degrees of psychological ambiguity, to determine if transcendent indices varied with degree of psychological ambiguity. The intermediate ambiguity set was found to yield reliably higher transcendence indices than either of the least or more ambiguous sets. No differences in transcendence were found to exist between the least and most ambiguous sets. Thus the data shows that those cards which have the highest transcendence indices are the cards which reveal the most about personality.

Further evidence of the existence of a curvilinear relationship between ambiguity and response production as measured by the number of themes elicited was found by Murstein (1958b). Employing an all-male population of college students and psychiatric patients used by Eron (1950) and utilizing Bijou and Kenny's (1951) ambiguity rankings of a "male" series of TAT cards with some modification, he found that the moderately ambiguous cards produced the most

themes. Fewer themes were obtained from both the high and low ambiguous cards.

#### Use of the TAT Cards as a Specific Measure

Stone (1956) investigated certain TAT cards to determine if they might show greater discrimination between assaultive and non-assaultive prisoner groups. Predicting from fantasy aggression to overt aggression, he found the greatest discrimination between the two groups was produced by the TAT cards with moderate "aggressive pull", 3BM and 3GF. Cards 13MF, 18GF and 18BM with high "aggressive pull", on the other hand, did not discriminate to the same extent as did the moderate "aggressive pull" cards.

#### Short Card Sets

General acceptance of the assumption that relevant personality response data is elicited by the stimulus properties of the individual TAT cards has become evident in the use of short form TAT sets in clinical psychological practice. Dana (1956) investigated these short tests and questioned both their use and whether "pull" in itself was a sufficient empirical criterion for their selection. In a review of six different short sets composed on a combined a priori and empirical basis, he reported complete agreement for male series cards 3BM, 4, 13MF and 18BM and agreement by

all but one on cards 6BM, 7BM, and 12M. Complete agreement was obtained for female series cards 4 and 13MF and all but one included cards 1, 2, 15, 18GF. Dana suggested that though there is valid evidence that transcendence indices and amount of personality data revealed are related the relationships between physical ambiguity and transcendence are not as clearly delineated. However, Dana suggested that if Kenny's (1954 p.347) hypothesis that a "decreasing number of cue constellations available for selective reaction produce response tendencies which do not contain much in the way of individual projections" was valid then short sets could be assimilated from the cards presenting the most numerous stimulus cues. He explored the problem of establishing relationships between stimulus cues and individual projections as evinced in themes or unusual formal characteristics and obtained negative results. He then recommended that short form TAT sets not be formed solely on such criteria. In addition, Dana compared the short form sets. Utilizing a single measuring category of Perceptual Organization, he scored the TAT protocols of 67 women (using the Female, Female-Girl series of 20 cards) and obtained the mean scores for this total set. He then compared the mean scores of short form sets for women selected by investigators as having the greatest card "pull", along with the mean score of a random set, with

the mean scores for the total set. Dana found it made no difference which cards were used, rather it was important how many cards were included. He conceded, however, that the validity of his findings was dependent on the validity of his scoring which could be open to criticism. Moreover, he felt that a worthwhile definition of what constitutes relevant personality data was necessary before a measure of card "pull" could be obtained.

#### Visual and Verbal Presentation of TAT Cards

Lebo and Harrigan (1951), hypothesizing that verbal TAT stimuli would provide cues similar to those of the cards themselves and that both would sufficiently affect the subject to elicit comparable responses, made a comparative study of the visual and verbal presentation of TAT stimuli. Employing 32 female college students in the age range from 18 to 20 years as subjects, they utilized 20 cards of the adult female series. They obtained results showing that the emotional tone, the level of response and the common themes of the stories evoked by the verbal descriptions of the cards were similar to those of the stories evoked by the picture's stimuli for the different cards. Thus their hypothesis was supported by the data.

### Oral and Written Responses to the TAT Cards

A comparative study was made by Terry (1950) of the oral and written responses made by female college students to the 20 TAT cards in the adult female series. To measure the degree of involvement or level of response, she utilized an empirically-derived rating scale. She found significant differences in the average level of response evoked by the cards with the written stories exhibiting a lower average than the oral stories. It was also evident that the subjects revealed consistent individual differences in the level of response. Terry drew up a table giving the mean level of response rating and the rank of each card for the combined oral and written stories. These findings are reported in Table 11.

### Sex Differences

The assumption that characteristic response differences exist between the male and female was tested by Lindzey and Goldberg (1953) when they engaged in a study of motivational differences between the sexes. By means of 8 selected TAT cards they compared 74 pairs of male and female students for aggression, sex, achievement, abasement, nurturance, narcissism and verbal responses. The data showed that males were more aggressive than females but not significantly.

TABLE 11

Mean Level of Response Ratings and Ranks of Each Card for  
Written and Oral Stories Combined (N=30) - (Terry, 1950)

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

The prediction that males showed more sexual needs than females was confirmed and was significant at the 5 percent level of statistical significance. The premise that males show greater need for achievement than females was not supported and the slight difference obtained was in the opposite direction of prediction. In a comparison between the males and females of the need for abasement it was found that the greater need of females for abasement was statistically significant at the 5 percent level. Also significant at the 5 percent level was the prediction that females would show greater verbal response than men. The hypothesis that females are more narcissistic than men was rejected. In addition, a comparison was also made of variability of the two sexes on the seven variables. F ratios showed that there were no significant differences on any of these variables thus no support for the hypothesis of greater male variability was obtained.

In their investigation to establish norms for TAT cards, reported earlier in this paper, Rosenweig and Fleming (1949) made, in addition, a statistical comparison of the differences between men and women. They reported that substantial agreement was obtained on most points with the predominant differences evident on cards 2, 13MF and 4. On card 2, the men, with greater frequency than women, describe

the man as working, the fields as poor and rocky, saw the girl in the foreground as adolescent and regarded the older woman on the right as depressed and anxious. On card 13MF, a significant difference in reaction time was found between the male and female subjects. Furthermore, the mean revealed both a greater variability and a difference in apperceptive content. Men more than females described the room as belonging to the male while women saw the woman in the picture as murdered. A similar difference in apperceptive content was derived from card 4 where women, with significantly greater frequency than the men, saw the woman in the picture as trying to misdirect the man, while male subjects described her as trying to restrain the man from violent action.

Weisskopf (1958) in a research study employing college students to describe Murray's "everyday" and "fairy-tale" picture sets found that women tended to have significantly higher transcendence indices than men for both the "male" and "female" series of TAT cards.

In a study, reviewed earlier in this literature survey, Eron, Terry and Calahan (1950) investigated the differential stimulus value of the TAT cards by empirically-derived rating scales. Utilizing the same scale they determined sex differences on the individual cards. They found that there were significant differences in the emotional tone of the stories



given in response to ten of the cards, 1, 6 (GF,BM), 8 (GF,BM), 9 (GF,BM), 13, 15, 17 (GF,BM), 18 (GF,BM), 19 and 20 at or beyond the .05 level. Five of these reliable differences occurred in the cards that vary for the "male-female" series and the remaining five in the cards that are common to both series. It would appear that cards differ less between sexes than they do amongst themselves for either sex. In addition, a comparison of the total frequency distribution on emotional tone for men and women indicated that the distribution differed significantly at the .01 level of confidence. Thus it would appear that in respect to the emotional tone of the TAT stories, the two sexes represent two different populations.

Knehr, Vickery and Guy (1948), in their previously-reported study to explore problem-action responses and emotions to determine if dynamic material not otherwise obtainable was available, also made a comparison by cards between the male and female alcoholics and between the assorted male and female groups. They found that a similar distribution of problem frequencies existed. The card showing the greatest dissimilarity was card 13 where males tended to see a problem of ethical standards while the females inclined to see it as a situation of fate or sexual conflict. This lack of similarity of view between the sexes to card 13 was also noted by

Rosenweig and Fleming (1949). No significant differences between the sexes of either group in types of problems induced by the 12 cards, 1, 2, 4, 5, 10, 11, 13, 14, 15, 16, 19 and 20 were found.

### Summary of Research Studies

The accumulated evidence on TAT research to the present time indicates that limited norms have been developed to enable the interpreter to differentiate that which is normal response to the stimulus card from that which is personally determined and a departure from the norm.

No evidence has been found that clinical groups vary significantly from one another or from a normal group in fantasy production although present environment, such as hospitalization, has been suggested as having some restrictive effect on the response. It should be added, however, that it is possible that the constriction of responses could also be a consequence of the length of time spent in a neurotic state.

Empirical data has shown that the nature of the stimulus, as well as individual determinants, affect the response to the TAT, that the cards vary in their "pull" value with some cards evoking more material than others, and that a curvilinear relationship exists between the ambiguity level of TAT cards and personality revealingness.

A few significant differences have been determined between the sexes but their similarity appears to be greater than their differences.

The research findings indicate the importance of the stimulus factors but fail to account for their function. In this regard, it is believed that both this investigation and later research, instigated by Kenny's (1959) theoretical model, may provide some data on the function of the picture stimuli. The problem is to determine the validity of the concept that picture stimuli do function as arouseurs of categorizing reactions which, in turn, are assimilated into a schema with the fantasy story a consequence of the schema.

The initial phase of research directed towards this goal is the development of categories to adequately reflect the perceptual reactions of individuals to the picture stimuli of the Thematic Apperception Test cards. This is the primary purpose of this paper.

## CHAPTER III

### METHOD

#### Materials

The materials used in this study consisted of twenty-six cards of the Thematic Apperception Test. This constituted all the cards of the total series with the exception of 7GF, 12F, 13B, 13G and 16. Card 7GF was omitted primarily because of its limited clinical usefulness. In addition, it was felt that it would be wise to delete card 12F because its common appearance in various publications might adversely affect the experimental conditions. Moreover, since the subjects employed for this particular study were adult, 13B and 13G were not included because of the obvious use of these cards with child subjects. Finally, card 16 was excluded because it had no value in this research since one of the basic conditions of the study required that the subjects describe what they saw as opposed to imagining some picture and then telling a story about it as is the usual procedure with this particular card.

#### Selection of Subjects

In order to obtain subjects a request for volunteers was issued in writing, with the consent of the school prin-

cipal, to the various classrooms in the Vocational School by the Office of the School Co-ordinator. A copy of the stencilled form with instructions and designated lines for the volunteer subject's name and trade respectively is included in Appendix A. The categorization (perceptual) reactions evoked by the given TAT cards were obtained on this sample of "normal" subjects. This "normal" sample consisted of 40 subjects (23 male and 17 female) attending the Vancouver Vocational Institute. The age range for the 40 subjects was 18 to 36 years, with a mean age of 22.20 years and a standard deviation of 4.24 years for the total group; with an age range of 18 to 28 years, a mean age of 21.34 and a standard deviation of 2.15 for the males; and an age range of 18 to 36 years, a mean age of 23.35 and a standard deviation of 5.86 for the females.

Since there are required levels of educational achievement for the different trades, all subjects had obtained varying degrees of academic education before entering the Vancouver Vocational Institute for specialized vocational training. The educational range of the subjects was from 8 to 13 grades, with a mean education of 10.82 grades and a standard deviation of 1.20 grades for the total group; with an educational range of 8 to 13 grades, a mean education of 11.17 and a standard

deviation of 1.24 for the males; and with an educational range from 8 to 12 grades, a mean education of 10.35 and a standard deviation of .93 for the females.

The trades engaged in by the male subjects included Auto Body, Carpentry, Electrical, and Draughting (Architectural and Machine). Trades enrolled in by the female subjects included Bookkeeping, Beauty Culture and Practical Nursing.

In the statement of the problem it was pointed out that this research was carried on parallel with a similar study by Long who is engaged in categorizing the perceptual responses of "disturbed" individuals drawn from a general group of psychoneurotic persons hospitalized at Crease Clinic, Burnaby for various periods up to a four-month limit.

The age range of the 40 subjects in this "disturbed" sample was from 21 to 45 years, with a mean age of 31.42 years and a standard deviation of 6.29 years. The age range of the male subjects in this group was from 21 to 45 years with a mean age of 31.69 and a standard deviation of 6.66 while the age range of the females was from 21 to 42 years with a mean age of 31.05 and a standard deviation of 5.76.

The educational range of the subjects in this same group was from 7 to 15 grades with a mean of 10.45 grades and a standard deviation of 2.04 grades. The educational range

of the males was from 7 to 15 grades with a mean of 10.73 and a standard deviation of 2.11. The educational range of the females was from 8 to 15 grades with a mean of 10.05 and a standard deviation of 2.00.

The normal subjects employed by the author and the "disturbed" subjects drawn by Long were matched, as a group, as closely as possible on their educational grades with the last completed grade of each subject accepted as their criterion grade. The normals had a mean education of 10.82 grades with a standard deviation of 1.20 while the "disturbed" subjects had a mean education of 10.45 grades with a standard deviation of 2.04.

The results of a t test of significance between the "normal" and "disturbed" samples, to determine if they represent the same populations in regard to age and education, are reported in Table 12. The null hypothesis that the two samples were drawn from identical, normally-distributed populations has been rejected for the age variable. A two-tailed test of significance for the age variable gives a t-value of 7.62 which is significant at the one per cent level. The null hypothesis regarding the educational variable has been accepted with a t of 1.00, which is not significant at the five per cent level.

#### Procedure for Obtaining Categorization (Perceptual) Reactions

The entire 26 cards were individually administered in one

TABLE 12

Comparison of Sample Populations for "Normal" and "Disturbed"  
Groups on Two Variables, Age and Education

<u>Age Variable</u>				
Sample Group	Age Range in Years	Mean Age in Years	Standard Deviation	t-value
Normal	18 to 36	22.20	4.24	7.62**
Disturbed	21 to 45	31.42	6.29	

<u>Education Variable</u>				
Sample Group	Educational Range Grades	Mean Education Grades	Standard Deviation Grades	t-value
Normal	8 to 13	10.82	1.20	1.00
Disturbed	7 to 15	10.45	2.04	

\*\* Probability that drawn from same populations in regard to age rejected at the .01 level.

Note: Public Education in British Columbia is available up to Grade XIII. For the purposes of this table the first year University, following Grade XIII, is designated Grade XIV and the second year, following Grade XIII, is designated Grade XV.



session requiring approximately 30 minutes. Each card was presented for a 20-second interval during which the subjects described what he or she saw. The order of presentation of the cards followed the series listed by Murray (1943) in the manual and was kept constant for all the subjects.

The instructions differed from the traditional instructions of making up a story, when, for the purpose of this experiment, the subjects were asked to describe the pictures rather than tell a story. Each subject was given a copy of the instructions and told to visually follow them while the author read same aloud. The subject was permitted to ask questions but the examiner refrained from adding any further information to that generally contained in the instructions. When necessary the same instructions were merely reworded to elucidate and satisfy the subject's question. A copy of the exact instructions is contained in Appendix B.

#### Procedure for Categorization of Obtained Perceptual Reactions

To categorize the obtained perceptual or categorization responses, Long and the author, under the direction of Kenny, examined all the responses of both the "normal" and "disturbed" groups, and empirically, on the basis of these formulated the basic categories for each card.

A reliability check was then made by the two judges who compared their judgment of categorization responses on ten

protocols (five each) drawn at random from the "normal" and the "disturbed" groups.

The percentage agreement obtained on this first reliability check was found to be below 90.0. Because it had previously been decided that a criterion reliability index of 90.0 or over would be desirable before assignment of the obtained responses to the categories could be made, it was found necessary for the judges to review the basic categories previously formulated. As a result, changes in the categories and their definitions, as well as the rules governing the assignment of the responses, were made in order to clarify any existing ambiguities. A second reliability check was made on ten additional protocols (five from each group) selected at random from the two samples. This check was also found to be below the desired level of agreement and a further review of the categories was performed. The categories, their definitions and the rules of assignment were then adjusted in accordance with the findings. In addition, the "transcendancy" weighting of the categories for each card were considered by the judges. This procedure was followed through to a final sixth reliability check when the criterion index was surpassed and the categories thus arrived at were accepted as sufficiently reliable.

The categorization responses of the forty subjects to each of the 26 TAT cards were then assigned by the author to

the relevant category. In a later review between the judges, any category that had not been assigned a single response by either judge, was deleted from the category list.

#### Measure of Frequency Distribution

To compare the category distribution frequencies between the "normal" and "disturbed" groups, chi squares, with corrections for continuity, were computed. By this method a chi square statistic was obtained for the individual categories listed under each of the twenty-six Thematic Test cards that were employed in this research.

In addition, a frequency count was made of the percepts given by each of the "normal" subjects for each of the cards. The results were compared with a similar frequency count made of the percepts given by the "disturbed" group. Chi squares, with corrections for continuity, were computed and a statistic of the difference in frequency distribution of percepts for each of the TAT cards was obtained.

## CHAPTER 1V

### RESULTS

#### Reliability Check

One of the most difficult phases of the current research was the attainment of a criterion reliability index of 90.0 or over between the two judges. Drawing on the 80 protocols, obtained for both the "normal" and "disturbed" groups, a pool of ten protocols, five from the "normal" and five from the "disturbed" sample, was selected at random for each of the reliability checks that was performed. A total of six reliability checks was made before the reliability index of 91.15 was accepted as sufficiently high to proceed with the assignment of the categorization or perceptual responses to the relevant categories. On the first trial a reliability index of 86.54 was obtained. The five next successive trials showed the following results which are given in the order attained; 81.54, 83.46, 84.62, 83.85 and 91.15.

#### Formulation of Categories

The basic categories were developed after all the responses of both the "normal" and "disturbed" groups of subjects were examined and the recurring perceptual reactions

were grouped under significant categories. Following each reliability check, the existing categories and their relevant illustrations were adjusted or augmented when necessary. In addition, the rules governing the selection of categories, where multiple responses existed, were revised and clarified. Finally, when a high degree of agreement between the judges was achieved on the sixth trial, the categories, which had been empirically formulated through this progressive technique, were considered adequately developed. In addition, the definitions of the categories and the rules governing the assignment of multiple perceptual reactions, made it possible for nil responses to be allotted to some of the originally-determined categories. Therefore, a final review of the category list was made by the examiners. If a category had not been assigned a single response from either the "normal" or "disturbed" sample, it was deleted from the list. The remaining two hundred and sixteen categories were accepted in the final form as adequately reflecting the categorization reactions of normal individuals to the picture stimuli of the TAT cards.

The rules governing the assignment of the perceptual reactions to the categories, are contained in Appendix C while an exact copy of the categories, formulated for each of the twenty-six TAT cards used in this research, is reported in Appendix D.

A Comparison of the Frequency Distribution of the  
Categorization Reactions of the Two Groups

A frequency count of the responses for each category was made and the chi squares, with correction for continuity, computed by comparing the frequency distribution between the "normal" and "disturbed" groups for each category on each of the TAT cards. Table 13 reports the TAT cards, the categories, the respective frequencies for the two groups, the chi squares with one degree of freedom and the reliable differences at the .05 and .01 levels of statistical significance when they were found to exist. Column 3, in the same table, assigns a brief label designating the category description and has been adapted from a fuller description reported in the Category List in Appendix D.

The final number of critical categories formulated for the 26 TAT cards was 216. In 19, or 8.79 per cent of these total categories, a significant difference in the frequency of responses between the "normal" and "disturbed" groups was found. In the remaining 197, or 91.21 per cent of the categories, no significant difference in the frequency distribution between the two samples was obtained.

Of the 19 categories showing a significant level of difference, 8 of these, or 42.10 per cent, were classified as "Description" categories. In all eight of these categories

TABLE 13

Variations in Categorization Reactions Between "Normal" and  
"Disturbed" Subjects

Card	Category	Title	Frequency		Chi Square
			Normal	Disturbed	
1	1	Intraception	17	12	0.87
	2	Parental Pressure	2	0	0.51
	3	Aspiration	5	1	1.62
	4	Tired practicing	12	9	0.26
	5	Inadequacy	1	1	0.00
	6	Other	0	5	3.41
	7	Description	3	12	5.25*
2	1	Hardship	3	0	1.39
	2	Peaceful	1	0	0.00
	3	Aspiration of girl	4	1	0.85
	4	Conflict	1	0	
	5	Love	1	0	
	6	School	15	7	3.07
	7	Symbolic contrast	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 *
3BM	1	Sorrow	22	22	0.00
	2	Punishment	2	2	0.00
	3	Suicide	5	3	0.14
	4	Sleeping	3	3	0.00
	5	Sickness	0	1	0.00
	6	In trouble	2	1	0.00
	7	Other	4	1	0.85
	8	Description	2	7	2.00
3GF	1	Death or loss	7	2	2.00
	2	Bad news	2	1	0.00
	3	Sorrow	16	23	1.80
	4	Shocked	6	4	0.11
	5	Romantic frustration	4	1	0.85
	6	Shame	0	1	0.00
	7	Other	5	6	0.00
	8	Description	0	2	0.51

Card	Category	Title	Frequency		Chi Square
			Normal	Disturbed	
4	1	Comfort	3	4	0.00
	2	Restraint action	5	1	1.62
	3	Departure	3	4	0.00
	4	Persuasion-objection	5	2	0.63
	5	Begging forgiveness	1	0	0.00
	6	Unrequited love	2	1	0.00
	7	Restraint	3	4	0.00
	8	Pleading	1	3	0.26
	9	Argument	7	2	2.00
	10	Conversation	3	8	1.69
	11	Other	7	7	
	12	Description	0	4	2.37
5	1	Surprise	14	8	1.57
	2	Horror	0	1	0.00
	3	Spying	8	4	0.88
	4	Calling somebody	8	11	0.28
	5	Looking for thief	1	0	0.00
	6	Curious	1	1	0.00
	7	Other	3	0	1.39
	8	Description	5	15	5.40 *
6BM	1	Confession	10	6	0.70
	2	Departure	1	2	0.00
	3	Parental pressure	7	4	0.42
	4	Bad news	7	5	0.10
	5	Succorance	1	1	0.00
	6	Disappointment	2	1	0.00
	7	Parental concern	2	1	0.00
	8	Male figure concern	6	4	0.11
	9	Both concerned	4	3	0.00
	10	Other	0	8	6.81 **
	11	Description	0	5	3.41
6GF	1	Surprise	17	17	0.00
	2	Conversation	5	10	1.31
	3	Female evil	1	0	0.00
	4	Disinterest of female	1	1	0.00
	5	Argument	2	0	0.51
	6	Counselling	2	0	0.51
	7	Questioning	1	0	0.00
	8	Sly male	3	0	1.39
	9	Other	4	2	0.18
	10	Description	4	10	2.16



Card	Category	Title	Frequency		Chi Square
			Normal	Disturbed	
7BM	1	Discussion	5	16	6.46*
	2	Succorance	17	4	9.30**
	3	Rebuke of younger	2	1	0.00
	4	Thinking, watching	3	3	0.00
	5	Symbolism	2	0	0.51
	6	Younger rejects	2	5	0.63
	7	Disphoric Mood	1	3	0.26
	8	Other	7	2	2.00
	9	Description	1	6	2.50
8BM	1	Operation	8	9	0.00
	2	Aspiration	9	3	2.45
	3	Impersonal aggression	8	5	0.37
	4	Daydreaming	3	12	5.25*
	5	Personal aggression	9	5	0.78
	6	Other	2	4	0.18
	7	Description	1	2	0.00
8GF	1	Dreaming general	16	20	0.45
	2	Specific dreaming	11	4	2.95
	3	Loneliness	3	3	0.00
	4	Posing	2	1	0.00
	5	Contentment	4	6	0.11
	6	Love	2	1	0.00
	7	Other	2	0	0.51
	8	Description	0	5	3.41
9BM	1	Sleeping	15	18	0.21
	2	Drunkenness	0	4	2.37
	3	Death	2	0	0.51
	4	Tired	5	3	0.14
	5	Lazy	14	10	0.54
	6	Trouble	2	0	0.51
	7	Other	2	3	0.00
	8	Description	0	2	0.51

Card	Category	Title	Frequency		Chi Square
			Normal	Disturbed	
9GF	1	Spying	5	6	0.00
	2	Escape	20	10	4.32 *
	3	Conflict	2	3	0.00
	4	Anger	0	2	0.51
	5	Fear	2	3	0.00
	6	Hurry	8	9	0.63
	7	Other	3	3	0.00
	8	Description	0	4	0.37
10	1	Departure	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	2	0	0.51
	2	Aggression	2	0	0.51
	3	Impersonal Aggression	1	0	0.00
	4	Unreal	3	0	1.39
	5	Animal or insect	11	11	0.00
	6	Prehistoric times	9	6	0.33
	7	Other	2	5	0.63
	8	Description	10	18	2.69
12M	1	Hypnosis	19	14	0.83
	2	Illness, 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
12BG	1	Serenity	9	5	0.78
	2	Spring, summer	7	12	1.10
	3	Snow	0	4	2.37
	4	Reference people	11	3	4.24 *
	5	Other	4	1	0.85
	6	Description	9	15	1.49

Card	Category	Title	Frequency		Chi Square
			Normal	Disturbed	
13MF	1	Illness, death	8	2	2.86
	2	Aggression	8	4	0.88
	3	Sorrow over death	9	9	0.00
	4	General sorrow	2	4	0.18
	5	Remorse, guilt	3	3	0.00
	6	Love conflict	0	1	0.00
	7	Rape	0	1	0.00
	8	Sexual relations	2	0	0.51
	9	Other	4	5	0.00
	10	Description	4	11	2.95
14	1	Looking	12	24	6.11*
	2	Intracception	12	3	5.25*
	3	Loneliness	0	1	0.00
	4	Suicide	2	2	0.00
	5	Escape	4	2	0.18
	6	Tranquillity	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	6	2	1.25
	2	Loneliness	3	0	1.39
	3	Undertaker	4	1	0.85
	4	Evil figure	12	9	0.26
	5	Religion	3	3	0.00
	6	Mourning	3	3	0.00
	7	Disphoric mood	2	6	1.25
	8	Other	7	8	0.00
	9	Description	0	8	6.81**
17BM	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**
17GF	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	Disaster	3	0	1.39
	6	Symbolic contrast	2	0	0.51
	7	Other	9	2	3.79
	8	Description	4	10	2.16

Card	Category	Title	Frequency		Chi Square
			Normal	Disturbed	
18BM	1	Escape	3	3	0.00
	2	Suicide	2	1	0.00
	3	Arrest, restraint	13	7	1.67
	4	Fear, shock	4	0	2.37
	5	Aggression	7	14	2.32
	6	Drunkenness	0	2	0.51
	7	Helping	7	8	0.00
	8	Other	4	1	0.85
	9	Description	0	4	2.37
18GF	1	Strangling	10	7	0.30
	2	Illness	7	7	0.00
	3	Accident	3	4	0.00
	4	Comfort	5	5	0.00
	5	Grief, unhappiness	7	5	0.10
	6	Other	5	9	0.78
	7	Description	3	3	
19	1	Cold weather, places	3	2	0.00
	2	Storm	15	8	2.20
	3	Reference to persons	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**

\* Chi square significant at  $p < .05$

\*\* Chi square significant at  $p < .01$

the "disturbed" subjects gave a significantly larger number of purely descriptive responses than did the "normal" subjects. The remaining 11 categories, showing a significant difference in frequency distribution, were "transcendent-type" categories and contained thematic elements. In five of these categories the "disturbed" subjects gave a reliably larger number of responses, while in the remaining six categories, the "normal" subjects gave the significant majority of responses.

#### Cards Showing Significant Differences

Of the fourteen cards possessing categories found significant at least the .05 level of confidence in the frequency distribution between the "normal" and "disturbed" groups, 11 cards (1, 2, 5, 6BM, 8BM, 9GF, 12BG, 15, 17BM, 17GF and 11) varied in respect of one category; 1 card, 7BM, in two categories; and two cards, 14 and 20, in three categories.

The cards in which the "Description" category was found to be significantly different when comparing the "normal" and "disturbed" groups were 1, 2, 5, 14, 15, 17BM, 19 and 20. On all of these cards a reliably greater number of "disturbed" persons than normal gave descriptive responses devoid of thematic elements.

The only card in which the "Other" category was determined to be significant was on card 6BM.

The remaining statistically significant differences for categories outside of the "Description" and "Other" categories, which are common to all cards, were obtained on cards 7BM, 8BM, 9GF, 12BG, 14, 17GF and 20.

#### Card by Card Analysis of Significant Results

On card 1, a significantly larger number of "disturbed" than "normal" individuals gave a purely descriptive response. The chi square obtained was 5.25, which is significant at the .05 level.

Similarly, on card 2, significantly more responses by the "disturbed" sample were assigned to the "Description" category. The chi square statistic was 5.40 significant at the .05 level.

On card 5, a chi square result of 5.40 was determined for the "Description" category and is significant at the 5 per cent level.

Card 6BM, showed a significantly greater number of "disturbed" persons giving categorization responses that were transcendent (going beyond pure description) yet not fitting into any of the given categories obtained for this particular card. The chi square was reported at 6.81 which is statistically significant at the .05 and .01 levels of confidence.

In card 7BM, a reliably larger number of "disturbed" subjects than "normal" subjects described the figures in the picture as being engaged in conversation or discussion. The chi square computed for this frequency distribution comparison was 6.46 which is significant at the .05 level of confidence. In contrast, on the same card, a greater number of "normal" persons than "disturbed" persons considered the older figure to be giving succorance, help or advice to the younger figure. A chi square of 9.30, significant at the .05 and .01 per cent levels, was obtained for this comparison.

Contrasting the frequency count for the category "Day-dreaming" on card 7 BM, a chi square of 5.25 was determined, with the "disturbed" group having the greater frequency of responses in this category.

On card 9GF, the "Escape" category was projected by more "normals" than "disturbed" individuals and the chi square of 4.32 with one degree of freedom was significant at the .05 level.

The chi square value of 4.24 for the card 12BG category, making reference to persons where none visually exists in the picture, showed the "normals" to have a significantly greater frequency count than the "disturbed" subjects.

On card 14, a comparison of the frequency distribution

for the two groups in the categories, "Looking" and "Intrception", showed chi squares of 6.11 and 5.25 respectively, both of which are significant at the .05 level. In the former category, "Looking", a greater number of "disturbed" individuals indicated that the young man was looking at something while in the latter category, "Intrception", a greater number of "normal" subjects than "disturbed" persons reported the young man was thinking about something. Moreover, on card 14, a chi square of 5.64, significant at the .05 level of confidence, was computed for the "Description" category, and, revealed a reliable difference between the two groups of subjects.

A chi square of 6.81, significant at the .05 and .01 levels, is reported for the "Description" category on card 15. The preponderance of responses in this category was made by the "disturbed" sample.

The "Description" category on card 17BM showed a difference in the responses of the two samples with the "disturbed" group giving a significantly greater number of purely descriptive reactions. The chi square reported, 8.07, is significant at both the .05 and .01 levels of confidence.

Card 17GF produced a reliable difference in the responses to category 1, "Men Working", when only 12 of the "normals" as compared with 24 of the "disturbed" persons described



the men as working. The chi square statistic was 6.11, significant at the .05 level.

On card 19, the "Description" category revealed a significant difference in the frequency distribution of responses between the two groups with the "disturbed" sample more than the "normal" sample describing the picture without any thematic content. For this category, a chi square of 6.33 was determined, which is significant at the .05 per cent level.

On card 20, the chi square measure indicated that a significantly greater number of "normals" than "disturbed" subjects had attributed aggressive intention to the young man portrayed in the picture. The chi square computed was 5.64 which was found to be statistically significant at the .05 level of confidence. In addition, a reliable majority of "normals" described the man in the picture as "lonely". The chi square statistic, 5.25, was significant at the .05 level. Moreover, a comparison of the categorization responses in the "Description" category of this card showed that twenty-six of the forty "disturbed" subjects gave pure descriptions to this card while only seven of the forty "normal" subjects failed to give a projective response to this TAT card. The chi square of 16.71 was found to be highly significant at the .01 level of confidence.

### Review of Non-Significant Results

A survey, of the categories not indicating statistically-significant differences between the two groups, has shown that the perceptual reactions of "normal" and "disturbed" individuals are generally similar. The main exception to this trend was found in the common "Description" category where, in all the twenty-six cards but two, the "disturbed" subjects showed a higher frequency count.

#### A Comparison of the Frequency Distribution of Percepts

A further comparison of the two samples was made to determine if there were significant differences in the number of percepts given by the two groups. The data, reported in Table 14, showed that on twenty-five of the cards, more "normals" gave multiple responses or percepts than the "disturbed" subjects. On one card 7BM the "disturbed" individuals showed a slightly higher total frequency count than did the "normals" with a matching count when all the transcendent responses over one were grouped. On 34.62 per cent, or nine of the TAT cards (2, 6GF, 8GF, 9GF, 12BG, 13MF, 14, 19 and 20) the difference was found to be significant at least the .05 level.

### Summary

The foregoing results may be summarized as follows:

The categories have been systematically formulated to adequately portray the perceptual reactions of normal indiv-

TABLE 14

Variations in Single and Multiple Percepts Given by the  
"Normal" and "Disturbed" Subjects

Card	Frequency of Individuals Giving Percepts				Chi Squares
	"Normal"		"Disturbed"		
	0-1	Over 1	0-1	Over 1	
1	22	18	28	12	1.33
2	18	22	24	16	1.25
3BM	14	26	26	14	6.05*
3GF	15	25	24	16	3.20
4	12	28	18	22	1.33
5	28	12	33	7	1.10
6BM	6	34	14	26	3.27
6GF	16	24	29	11	7.31**
7BM	16	24	16	24	0.00
8BM	15	25	21	19	1.26
8GF	14	26	31	9	13.00**
9BM	10	30	19	21	3.46
9GF	10	30	20	20	4.32*
10	18	22	25	15	1.81
11	29	11	36	4	2.95
12M	22	18	16	24	1.25
12BG	24	16	37	3	9.94**
13MF	13	27	26	14	7.20**
14	11	29	37	3	32.55**
15	23	17	27	13	.48
17BM	26	14	31	9	.98
17GF	30	10	34	6	.70
18BM	10	30	18	22	2.69
18GF	15	25	16	24	0.00
19	23	17	37	3	11.27**
20	21	19	34	6	8.38**

\* Chi square significant at  $p < .05$

\*\* Chi square significant at  $p < .01$

iduals to the picture stimuli of the TAT cards. This was not done a priori, but on the basis of the responses given by the sample subjects.

A high reliability index between the two judges was attained before any attempt was made to assign the categorization reactions to the relevant categories.

A comparison of the two sample groups has shown relatively few statistically-significant differences in the perceptual responses of "normal" and "disturbed" individuals to the TAT cards. Where these significant differences did appear in the frequency distribution of responses between the two groups, nearly half of them occurred in the pure "Description" category. This tendency of the "normal" sample to give fewer descriptions without any thematic content than the "disturbed" sample, has also been evident, though not significant, all but two of the TAT cards.

This pattern of the "normal" subjects to give more thematic content in their responses is substantiated not only by the results showing that they gave fewer pure descriptions than the "disturbed" sample but also by the data indicating that more "normals" than "disturbed" persons gave multiple transcendent responses. On all the TAT cards but one, the "normals" produced a majority of percepts and this variation was found to be statistically significant on nine of the cards.

Some significant group differences have been obtained in specific "transcendent" categories but one would not be justified, on the basis of the present research, in making any assumption regarding the significance of these differences beyond stating that they have been found to occur.

## CHAPTER V

### DISCUSSION

The results show that six reliability checks between the judges were necessary to achieve a criterion reliability index of 90.0 or over. The difficulty encountered in obtaining a sufficiently high reliability index reflects something of the extent of the ambiguity presented by the multiplicity of the percepts given by many subjects, particularly by the "normals", when they described the TAT cards. It also gives some indication of the extent of the refinements required in the formulation of the critical categories.

The basic categories were formulated by the examiners grouping the categorization reactions of the eighty "normal" and "disturbed" subjects to each TAT card under a number of specific categories that appeared predominant for each of the cards. Thus, the categorization reactions of the individuals who perceived aggressive intent in the card were grouped under an "Aggressive" category, while those perceptual reactions of individuals who characterized the person or persons in the card as having any unpleasant feeling, such as worried or unhappy, were similarly grouped under a "Disphoric Mood" category. This procedure was continued until sufficient

categories were developed for each TAT card to adequately reflect the perceptual reactions of the subjects employed in this study.

Following each trial, the categories developed to that stage, were reviewed and the necessary changes or additions made. On card 4, for example, an additional category was formed to contain responses that described the woman in the picture as merely "restraining or holding back the man". This was found to be necessary when it was determined that, of all the responses indicating "restraint", several did not encompass the higher emotional percept of "restraint from violent or quick impulsive action" as defined by the original "restraint" category.

In addition, it was found expedient to clarify the explanations defining the various categories. An example of this was evident on card 3GF where it was considered advisable to augment the category, "Death or Loss", originally defined as, "some loved one has died or left her" with the illustration, "has lost date".

Similarly, the rules governing the selection of the categories, were developed and refined with each successive trial until the final set was accepted as adequate. The usefulness of these rule requirements is shown in the following response description given by a subject to card 3BM, "A

little boy crying - his head on couch - is crying or has dropped something - looks like gun - don't think it's a gun - or else he's been sleeping". There were two possible categories, "Sorrow" and "Sleeping" to which this perceptual reaction could be assigned. In this instance the response was assigned to the "Sorrow" category on the basis of the rule stating that, "If there are two percepts and one is weighted, put in strongest category". The choice was made easier in this particular case by the weighting of the percept both by the repetition of "crying" and the higher "transcendancy" or emotional strength of the category, "Sorrow" as compared with the category "Sleep" for this specific card.

However, there were instances when the strength of one percept over another was not as self evident. In these cases it was found that successive reviewing of the categories following the trials was necessary to obtain a sufficient agreement between the judges as to what degree of "strength" the individual categories for each of the cards possessed.

When the reliability index of 91.15 was achieved, it was felt that the categories, formulated by this progressive technique, adequately reflected the perceptual reactions of the subjects and, as the next step, could be assigned to the obtained responses.



A final total of 216 categories was attained for the 26 TAT cards. An examination of the categories for the various cards shows that the number of categories ranges from twelve for card 4 to six categories each for cards 12BG, 17BM and 20. The average number of categories was 8.31 for each of the 26 TAT cards.

The primary aim of this study, to categorize the perceptual responses of a sample of normal subjects to the Thematic Apperception Test cards, has been achieved. However, the usefulness of these obtained categories must await further research by another individual, when, as reported earlier in this paper, a checklist of these categories will be given to another group of subjects with directions to check the category they think best fits what they see in the card. When these results are obtained, then, the uncertainty measure proposed by Kenny (1959), can be applied to the data to provide a quantitative index of the ambiguity for each of the twenty-six thematic cards.

The secondary purpose, of comparing the categorization responses of the "normal" and "disturbed" subjects, has also been accomplished. This comparison has shown a small percentage (8.79) of a significant difference in response frequencies for certain categories between the groups. However, 91.21 per cent of the categories produced no statis-

tically significant differences. This data would tend to indicate that the perceptual responses of the "disturbed" subjects, though restricted in quantity of fantasy output, do not vary to a significant degree on a perceptual basis from the perceptual reactions of "normal" subjects. These results appear to support Eron's (1950) finding, as reported earlier in the literature survey, that the fantasy productions of clinical groups, when considered in all respects, do not vary significantly from one another or from a normal group.

Of the nineteen categories, which on comparison of frequency counts showed significant chi squares, eight were the common category, "Description". In all eight cases the reliably larger number of purely descriptive responses were given, as already emphasized, by the "disturbed" hospitalized group. A review of the remaining "Description" categories revealed that, in all but two, the "disturbed" subjects gave more descriptive responses than the "normal" subjects. These results, though not significant, do give some indication of a pattern.

This pattern was further supported by the data obtained when a comparison was made between the number of subjects in both groups giving zero-single (0-1) and multiple transcendent percepts (over 1). It was found that, on all the cards but

one, more "normals" than "disturbed" persons gave multiple thematic responses or percepts. On nine of these cards the differences attained were found to be statistically significant.

These particular differences that have been found to appear between the two groups, namely, a tendency by the "disturbed" individuals both to give more "pure" descriptions and to produce fewer percepts than "normal" individuals, would appear to provide some support for Eron's (1950) findings obtained in the same investigation discussed previously. His data shows that although fantasy productions between hospitalized and non-hospitalized subjects did not vary significantly when considered as a whole, some individual differences were found to exist. Reliably more descriptions were given by the hospitalized subjects than by the non-hospitalized subjects. In addition, the hospitalized individuals produced stories "duller" in emotional tone as measured by more neutral stories and less extremely emotional ones.

It was previously noted that the "restrictive" tendency of the hospitalized subjects might not necessarily be caused by hospitalization, per se, but might well be the result of the time spent in the neurotic state. However,

it should be mentioned that, in this study, another factor may have contributed to this variation. The two sample groups were evenly matched for number of female and male subjects, thus ruling out sex as a contributing cause. Furthermore, it is unlikely that the educational factor influenced the variation since the two groups were closely matched for years of education (an obtained t-value was found to be insignificant). However, it is possible that, since a significant difference in age between the two groups has been found to exist, the age of the subjects could be a contributing factor. Further research would be necessary to determine what, if any, influence the age variable might possibly have on fantasy response.

An examination of the eleven "transcendent" categories, showing a significantly different frequency distribution of responses, produced no valid explanation for the variations in the specific categories between the two groups. However, it should be noted that a review of these categories has shown that the pattern of response already generally established by the two groups (the tendency of the "normals" to "richer" thematic reactions and of the "disturbed" subjects to more "restricted" reactions) is also emphasized on these categories.

On two of the cards, namely 7BM and 14, where the "normals" gave a majority of responses in one thematic category and the "disturbed" subjects gave the majority of responses in a different category, it was found that the "normals" gave a greater number of responses in the more "transcendent" category of the two. On card 7 BM, the "normals", in a significantly larger number of responses, projected the older man as giving succorance to the younger while the "disturbed" subjects, as a majority, merely perceived the two men in conversation. Similarly, on card 14, the "normals" gave a significantly greater number of responses in the "Intracception" category by describing the young man as thinking while a preponderance of the "disturbed" subjects described the young man as only looking at something.

A similar trend was evident on card 9 GF when a larger number of "normals" than "disturbed" subjects described one girl as trying to escape from the other girl, on card 12 BG, where more "normals" than "disturbed" individuals refer to persons where none exist in the picture, and, on card 20, where more "normals" than "disturbed" persons described the man in picture as either aggressive or lonely.

On three cards, 6 BM, 8 BM and 17 GF, the "Disturbed" subjects showed a predominantly greater number of categorization responses than did the normals for specific categories but the pattern described previously was still evident. On card 6 BM, eight of the forty responses of the "disturbed" group were assigned to the "Other" category because they were not relevant to any of the given categories for that card. None of the responses of the "normal" group was assigned to this category. On the contrary, their perceptual reactions were scattered among the more "emotionally-charged" categories. On card 8 BM, a majority of "disturbed" persons saw the boy as daydreaming and thinking about the picture or operation in the background. The "normal" subjects, on the other hand, tended to distribute their responses between the two "Agression" (impersonal and personal) and "Aspiration" categories, all of which were considered "stronger" in emotional content than the "Daydreaming" category. Finally, on card 17 GF, twenty-four "disturbed" subjects projected the men as working while only twelve "normal" subjects gave a similar response. On this card, too, the "normals" appeared to scatter their responses among the more "transcendent" categories.

The categories have been formulated, and, though

there are fewer significant differences in the categorization reactions between the groups, it would appear that a pattern of greater productivity as measured by fewer descriptive responses, more multiple percepts and a tendency to produce percepts containing a higher degree of emotional content or transcendency, has been established for the "normal" group.

## CHAPTER VI

### SUMMARY AND CONCLUSIONS

The main purpose of this study was to categorize the perceptual reactions of normal individuals to the picture stimuli of the cards of the Thematic Apperception Test. A secondary aim was to compare the categorization reactions obtained from this "normal" sample with those acquired from a "disturbed" sample in a similar parallel study conducted by Long.

In order to procure these categorization or perceptual responses, protocols were obtained from forty students from the Vancouver Vocational Institute. These subjects were asked to describe, in a twenty-second time period for each card, what they saw in the picture. From the responses thus obtained, the categories for all twenty-six cards were formed. This was not done, a priori, but was accomplished on the basis of the perceptual responses given.

When the categories, formulated on the basis of the perceptual reactions, were completely developed after a continuous procedure of revision and refinement, and, when



a high reliability index between Long and the author was obtained, the subjects' responses for each of the cards were assigned to the critical categories. A frequency count was made for each category listed for each card and a chi square statistic, with correction for continuity, was obtained.

In a comparison made of the two groups it was determined that the "normal" subjects tended to give fewer purely descriptive responses than did the "disturbed" subjects. This was manifested on twenty-four of the cards and was found statistically significant on eight of the twenty-six cards. The data showed that eleven categories, other than "Description", produced significant differences in the categorization reactions between the two groups.

An additional comparison was made by determining the frequency of individuals for both groups giving responses containing nil-one percept, or, more than one percept. A chi square measure, with correction for continuity, was computed for the frequency distribution on each card. More individuals in the "normal" group than the "disturbed" group gave multiple perceptual responses. The difference was evident on twenty-five of the cards and was found to be

significant on nine cards.

A review of the cards showed that fourteen of the twenty-six cards produced at least one statistically significant variation in a response category. Of these fourteen cards, eleven produced a reliable difference in one category only, one produced a reliable variation in two categories, while two cards obtained a significant difference in three categories.

It is emphasized, however, that of a total two hundred and sixteen categories, only nineteen were determined to be reliably variant, indicating that the perceptual reactions, per se, do not vary greatly between the two groups.

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## APPENDIX A

## NOTICE REQUESTING VOLUNTEERS

VANCOUVER VOCATIONAL INSTITUTE - ALL CLASSES

A student of the University of British Columbia is engaged in a research project which requires that she have a considerable number of people who will look over a series of pictures and tell her what they see in them.

This will require approximately 15 minutes time and no names need be given on the experiment.

Those students who are between the ages of 20 and 35, who will voluntarily give their time, please sign below and you will be called from class for this purpose (with your Instructor's approval).

Please return signed sheets to the Office.

NAME \_\_\_\_\_

CLASS \_\_\_\_\_

## APPENDIX B

## INSTRUCTIONS TO SUBJECTS

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 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 C

## RULES GOVERNING SELECTION OF CATEGORIES

1. If person states two percepts and doesn't elaborate and is neutral on both of them, 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 the strongest category.
3. Where a multiple theme exists in which one theme fits a category and another has been introduced that does not fit a category, put in the "Other" category, unless theme that fits into category is dominant. Then place in this dominant category.
4. If multiple percepts (two or more) and not able to judge which category is dominant, put in the "Other" category.
5. If no percept given that goes beyond pure description, yet reference is made to a specified profession, vocation, race, day of the week, definite time or relationship, put in "Other" category.

## APPENDIX D

RESPONSE CATEGORIES

## CARD 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, wishes to be a great musician (does not include wonderment as to whether he can ever be an 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, fight with parents.
5. Love:
6. School or student: going to school, coming from school, taking a course, school teacher.
7. Symbolic contrast: of education and land.
8. Sadness: sad, unhappy.
9. Intraception: thoughtful, daydreaming, thinking, deep in concentration.
10. Other:
11. Description:

## CARD 3BM

- |                                  |  |
|----------------------------------|--|
| 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), 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:         |  |
| 7. Other:                        |  |
| 8. Description:                  |  |

## CARD 3GF

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, heartbroken, 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, tells not to worry, conciliates, talks lovingly to man, gives advice.
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 him from leaving her; turning away (physical) of boyfriend, husband or 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, convince him of something.
5. Begging forgiveness: asking forgiveness of partner.
6. Unrequited love:
7. Restraining (general): holding him back.
8. Pleading (general):
9. Argument (general):
10. Conversation: two people talking; one person says something; to explain, tell or confide something.
11. Other:
12. Description:

## 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 something 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 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. Description:

## CARD 6BM

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 didn't 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 figures, they have had bad news.
5. Receiving consolation, succorance: male or female figures giving or receiving advice or consolation.
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 worried, burdened, thoughtful.
9. Both figures concerned: they are having a serious discussion about something, he is upset and she is worried, both unhappy.
10. Other:
11. Description:



## CARD 6GF

1. Surprise: at what he has said, his unexpected appearance, amazed, stopped, jumped, startled, astonishment.
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, doesn't 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 explaining something or giving advice to the other figure.
8. Sly, suspicious, intentions of male figure. making passes, preying.
9. Other:
10. Description:

## CARD 7BM

1. Discussion: Both figures having a conversation, gossiping, having a talk, rumination, conference, chat, debate.
2. Succorance from older person: younger figure seeking advice, help; or receiving advice, comfort, consolation, 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, thought to be ridiculous; they are not agreeing.
7. Disphoric mood: people characterised as being unhappy, worried (covers any unpleasant feeling).
8. Other:
9. Description:

## CARD 8 BM

1. Operation: having an operation, being operated on, taking bullet out, operation going on.
2. Aspiration: thinking about being doctor in future, dreaming or hoping of future.
3. Aggression from impersonal source: as during war, could be a 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 the man on the table.
6. Other:
7. Description:

## CARD 8GF

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

## CARD 9BM

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; hoboes, bums, vagrants.
6. Trouble: running away from law and hiding, in wrong.
7. Other:
8. Description:

## CARD 9GF

1.   Spying:                   hiding, snooping.
2.   Escape:                 running away from something,  
                              in flight.
3.   Conflict between the     over love, rivalry or some-  
      two women:               thing, jealousy.
4.   Anger:                 she looks mad.
5.   Fear:                 terror, alarm, scared.
6.   Hurry:                 going somewhere in a hurry,  
                              to meet someone (not  
                              running away), 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       somebody running from  
     animal:                   others.
2.   Aggression towards peers: physical harm inflicted or  
                                 intended between animals  
                                 or humans, fighting.
3.   Aggression from           war, bombs, accident,  
     impersonal source:       nature.
4.   Unreal, fantastic:       something unreal, like from  
                                 outer space or bad dream.
5.   Animal or insect         grasshopper, dragon, wild  
     specified:               animal.
6.   Prehistoric times:       prehistoric scene,  
                                 prehistoric animals,  
                                 dinosaur.
7.   Other:
8.   Description:



## CARD 12M

1. Hypnosis: mesmerizing, hypnotizing  
figure on the couch, casting  
a 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 harm-  
ful.
6. Talking: somebody talking to figure on  
couch.
7. Other:
8. Description:

## CARD 12BG

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

## CARD 13MF

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: night, 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 the window, trying to get out of a place.
6. Favorable environment or tranquillity: 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. Disphoric state: unpleasant, emotional states characterized e.g. dreadful, unhappy, worried, depression.
8. Other:
9. Description:

## CARD 17BM

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

## CARD 17GF

1. Men working: carrying things to put on boat, scene of labour, people bring-ing in harvest, unloading boats.
2. Suicide: she's not going to jump off bridge, girl read 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 18BM

1.   Escape:                               struggling to free self,  
  escaping from someone.
2.   Suicide:                             figure trying to commit  
  suicide.
3.   Restraining or                     holding or holding back,  
      arresting figure:               being arrested.
4.   Fear or shock:                     looks frightened, state of  
   shock, heard bad news.
5.   Aggression towards               man is being attacked,  
      peer:                             "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 18GF

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, Arctic, Iceland.  
places depicting cold:
2. Storm: snowed in, blizzard, a gale  
wind blowing away, wind  
represented here, snowstorm.
3. Reference to person or someone is sitting by one of  
persons in picture: windows.
4. Abstract: artist's abstract painting,  
modern art, artist's  
painting.
5. Unreal: haunted, weird, fantasy,  
ghost, 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: