ASPECTS OF THEMATIC APPERCEPTION TESTING: DEPRESSION.*

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THE Thematic Apperception Test (*TAT*) of Murray first appeared in 1935; it consists of a series of pictures on cards, 20 of which are shown to the subject with an injunction to make up a short story based on what the people in the pictures are doing, thinking or feeling, and what he thinks the outcome will be. The theory is, of course, that the subject will "project" into his responses his own attitudes, moods, drives, desires, etc., and the *TAT* has for this reason been called a fantasy test (Masserman, 1947). Elaborate scoring methods have been developed with a high degree of inter-examiner correlation (see Murray, 1938; Rapaport, 1946; Rotter, 1940; Tomkins, 1947; Wyatt, 1947), but they are rather too complex and time-consuming for ordinary clinical purposes and all too often the examiner may fall back on a method of intuitive interpretation, evaluating responses in the light of his psychopathological knowledge and experience—that is, using experience derived from free association in a situation that is designed primarily to produce a controlled associative process. It would not, of course, be the first time that a scientific solecism had been the means of justifying a therapeutic end, but here there are two logical errors. First, the facts are being selected to fit the theory, and as Harrison (1943) says, "the analyst may project into his interpretations his private personality theories or even his own personality"; second, the experimental findings are not being evaluated against normal controls. The intuitive method is thus seen to be personal, subjective and unstandardized. The aim of psychometrics, however, is the *measurement* of personality factors, and measurement, says Carr (1925), must be "impersonal, objective and standard."

The present writers' method of approach has been to use controlled comparisons of response material, evaluated statistically. First the collected responses to each card in the control group are examined and broken down under subdivisions determined by the evocative power of the card, then the same procedure is carried out in the experimental group and the points of divergence are noted and submitted to tests of statistical significance. *It is suggested that interpretation should be based on these significant divergences.* The two groups were approximately matched for sex and intelligence, and consisted of 15 normal controls and 15 cases of depression, irrespective of whether

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the condition appeared to be endogenous or reactive. The degree of depression was for the most part moderate, and grossly deluded, hallucinated patients were not included in this series; the mean age of the depressed group was 47 years. The controls were members of the hospital staff—nurses, porters, social therapists, etc., and the mean age of the group was 39 years. It must be borne in mind that with a series of 30 cases (and the time-absorbing nature of the work has prevented it from being larger) absolutely representative sampling cannot be guaranteed. However, the differences which are considered significant with a group this size are large differences—as, say, the difference of 50 per cent. between 30 per cent. in one group and 80 per cent. in the other. To assess the significance of smaller differences, as between 20 per cent. and 30 per cent., larger numbers would be necessary. Further, the divergences may not necessarily be a feature of depression only—they may be present in other diagnostic groups. Different nosological groups have, in fact, been tested, but the material is not yet fully investigated. All the subjects were given the Rorschach test in addition to the *TAT*; corresponding and diverging features of the tests are noted and commented on in later paragraphs.

Examination of the TAT Cards.

CARD 1.—*A young boy is contemplating a violin which rests on a table in front of him.**

Considering our control group responses, it was observed that they could be classified as (i) references to the boy and his drive; (ii) references to the violin; (iii) references to external forces such as "he's been told to practise" or "his mother has arranged lessons for him"; (iv) references to the boy's mood; (v) references to the outcome.

When references to the boy's drive are examined in the control and depressed groups the contrasting results may be expressed in tabular form as in Table I.

TABLE I.—P = ·10–·05.

Group.	The boy's drive.			Total.
	Ambition.	Uncertainty.	No opinion expressed.	
Control	7	4	4	15
Depressed	2	3	10	15
Total	9	7	14	30

Taking the table as a whole and subjecting it to the χ^2 test, the probability that the findings are due to chance is rather less than 1 in 20, so it is not statistically significant. However, comparing only the "ambition" responses in the two groups, there is a significant difference in so far as the "ambition" response is a common one in the control group (46·7 per cent.) and an uncommon finding in the depressed group (13·3 per cent). This is a difference of 33·4 per

* The quoted descriptions of the *TAT* cards are those given by Murray (*TAT Manual*, 1943).

cent., which is 2·14 times the standard error of the difference and so may be accepted as significant, $^{\sigma}D\% = \sqrt{\frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2}}$. Similarly, there is a significant difference in the fact that most of the depressed patients made no reference to the existence of any drive. Doubt or uncertainty was expressed about the boy's drive almost equally in both groups.

Going on to examine objective comments, as in class (ii) of the responses, we found that references could be subdivided as follows: (*a*) It was a "special" violin—a gift, his father's violin, a Stradivarius, etc.; (*b*) the instrument was mentioned, but no special importance was attached to it; (*c*) the violin was damaged—a string was broken, the bridge was missing, etc.; (*d*) no opinion expressed. These responses are tabulated below for the two groups of subjects. Table II).

TABLE II.—$P < \cdot 01$.

Group.	"Special" violin.	"Ordinary" violin.	"Broken" violin.	No opinion expressed.	Total.
Control	9	6	0	0	15
Depressed	0	10	4	1	15
Total	9	16	4	1	30

The χ^2 test here indicates that it is very unlikely that the findings are due to chance, and it may be taken as significant that the controls attach some importance to the violin being a "special" one, also that the depressed group not uncommonly find it to be damaged.

References under our third category, to some external force, was found in five subjects in the control group, but only in one in the depressed group (see Table III). This also is a significant finding.

TABLE III.

Group.	External force. Number of responses.	Percentage.
Control	5	33·33
Depressed	1	6·67

Difference = 26·66 per cent.

Concerning the boy's mood, it was found that this could be classed as depressed or aggressive, and Table IV shows the distribution.

TABLE IV.—$P = \cdot 20$–$\cdot 10$.

	The boy's mood.			
Group.	Depression.	Aggression.	No opinion expressed.	Total.
Control	3	2	10	15
Depressed	6	0	9	15
Total	9	2	19	30

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It will be seen that the depressed group differs in showing more depression and less aggression, but not to a significant degree.

The outcome of the story, when it was mentioned at all, fell into a success-or-failure grouping. From Table V it will be seen that the depressed group scored lower in both categories, but not significantly.

TABLE V.—$P = \cdot 20$–$\cdot 10$.

Group.	Success.	Failure.	No opinion expressed.	Total.
Control	4	3	8	15
Depressed	1	1	13	15
Total	5	4	21	30

This completes the analysis of Card 1 and the method has been shown in some detail as a demonstration. For the other cards examined similarly in the series, findings which may be taken as significant are indicated by italicized passages. An accompanying asterisk denotes significance at the level of twice the standard error of the difference, and two asterisks indicate significance at the level of $\times 3$ S.E. or more. When findings are not so emphasized, they represent either tendencies which are not sufficiently prominent to achieve significance, or they may readily be due to the operation of chance. The collection of more material will be necessary in these cases before any definite opinion can be reached. The findings in the other cards examined are given below.

CARD 2.—*Country scene: In the foreground is a young woman with books in her hand; in the background a man is working in the fields and an older woman is looking on.*

A family relationship was usually found here by the controls, though *seldom** by the depressed patients. The woman's pregnant state, and also the possibility that the picture is a poster of some kind, was more often commented on by the control group. The girl's conflict between education and the farming background was well brought out by the controls, but by *few*** of the depressions.

CARD 3 GF.—*A young woman is standing with downcast head, her face covered with her right hand. Her left arm is stretched forward against a wooden door.*

In both groups the mood of the woman was uniformly interpreted as depressed. The cause of her depression was considered to be due to quarrels, family troubles, or sickness or death of a loved one in a *higher proportion** of the controls; and due to oppression (e.g. being turned out by her father) in *more** of the depressed group. The outcome of the situation, when one was given, was recovery *more often*** in the controls.

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CARD 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.*

The man's drive tended to be too varied to give any marked differences in scoring. His attitude towards the woman showed *rejection** rather than acceptance in the depressed group. The woman's attitude was found to be persuasion, assistance or opposition, fairly evenly matched in both groups except that opposition was not found in the depressed patients. In the background a figure can be specifically interpreted as a woman or as a picture, or it may be implied that the figure is a woman, although she is not directly mentioned. This occurred more frequently among the controls in stories of an "eternal triangle" type.

CARD 5.—*A middle-aged woman is standing on the threshold of a half-opened door looking into a room.*

Comments on the woman were that she was checking the room, she was worried about something, or she was just normally and happily about her business; the depressed group had no responses in the last-mentioned category. It was a *commoner** finding in the controls that the woman was seeing other people in the room; background descriptions were mentioned almost equally in both groups.

CARD 6 GF.—*A young woman sitting on the edge of a sofa looks back over her shoulder at an older man with a pipe in his mouth, who seems to be addressing her.*

The control group commented more frequently on the woman's being startled or surprised; the man's attitude tends to be interpreted as either friendly or else intimidating. His attitude was *friendly** in the control group, and aggressive or intimidating in equal proportions in both groups. Failure to comment on his attitude was commoner in the depressed group.

CARD 7 GF.—*An older woman is sitting on a sofa close beside a girl, speaking or reading to her. The girl, who holds a doll in her lap, is looking away.*

The persons in the picture were said to be mother and daughter (or less commonly, "a woman and a girl") about equally in both groups. The doll was fairly frequently seen as a baby (and in one case as a "dead baby") in the depressed group. The little girl was said to appear sad more commonly amongst the controls.

CARD 8 GF.—*A young woman sits with her chin in her hand looking off into space.*

The girl was stated to be *thinking*** more commonly in the depressed group, and said to be *"fed up"** more often in the controls. In a few responses she was watching, or waiting.

CARD 9 GF.—*A young woman with a magazine and a purse in her hand looks from behind a tree at another young woman in a party dress running along a beach.*

The commonest responses in order of frequency here in the two groups were (*a*) both girls are looking at something, (*b*) the upper girl is an onlooker (commoner in the depressed), (*c*) the upper girl is in some way opposed to the other (commoner in the controls), or (*d*) they are playing some game. The controls stated more commonly that they are sisters, also that the lower girl is anxious about something. One of the controls said the upper girl was seeing an image of herself.

CARD 10.—*A young woman's head against a man's shoulder.*

The two figures are usually seen as a middle-aged or elderly couple, but a minority of both groups saw them as two men. Mother-and-son and father-and-daughter responses were found occasionally among the controls. The mood is usually interpreted as peaceful, but an aggressive theme is introduced by a minority of the controls ; the depressed patients occasionally saw them as in prayer.

CARD 11.—*A road skirting a deep chasm between high cliffs. On the road in the distance are obscure figures. Protruding from the rocky wall on one side is the long head and neck of a dragon.*

The card was rejected by 26 per cent. of both groups ; the serpent-like creature was not mentioned, or was called something innocuous like " a goose," in a minority of both groups. The figures on the bridge are seen as " little men " more often in the controls ; a majority of the depressed group interpret the figure as some kind of peaceable animals running away.

CARD 12 GF.—*The portrait of a young woman. A weird old woman with a shawl over her head is grimacing in the background.*

The old woman is seen as unpleasant or menacing in about half of each group ; anxiety in the young woman was mentioned more by the controls, also the possibility that they are both looking at someone else. Equal minorities of both groups saw the old woman as a nun or a witch ; the depressed patients had uncommon responses of seeing her as a man, or fancying that the young woman was seeing an imaginary future picture of herself.

CARD 13 MF.—*A young man is standing with downcast head buried in his arm. Behind him is the figure of a woman lying in bed.*

This card rarely failed to evoke a thematic response, the commonest (control) explanations being murder and/or rape, seduction and illness or death. Among the depressed patients illness or death was the commonest theme, seduction was almost equally common and sexual crime only half as common. The production of alternative themes is *much higher*** in the controls.

CARD 14.—*The silhouette of a man (or woman) against a bright window. The rest of the picture is totally black.*

The depressed group usually see the figure as looking out into the light (commonly moonlight); the controls *more often** picture the room as light inside and the figure looking out. In the control responses with the figure looking towards the light, it was usually daylight or dawn. Alternative explanations were again *more frequent*** in the control group.

CARD 15.—*A gaunt man with clenched hands is standing among gravestones.*

About two-thirds of each group interpreted the card as depicting an actual situation (a man praying for a dead relative, a body-snatcher, a criminal repenting, a madman, a dying man) and one-third saw it as a symbolic figure of death or a ghost. Responses could be classed as criminal themes (*commoner** in the controls) or moral themes (equal in both groups).

CARD 16.—*Blank card.*

A wide variety of responses is of course met with here, but the controls showed the following order of frequency: (i) landscapes; (ii) responses with some personal interest; (iii) responses concerning other people; (iv) responses concerning the family. The depressed group's responses fell into quite a different order of frequency, family responses predominating by a *large majority** and the other responses being *much more scattered.** Separation from the family throughout hospitalization may, of course, play a large part here.

CARD 17 GF.—*A bridge over water. A female figure leans over the railing. In the background are tall buildings and small figures of men.*

The controls *more often** saw this as a girl waiting for her husband or lover; the second commonest theme was that the card depicted smugglers, this, too, being *more frequent** among the controls. Themes in which the girl is merely looking at the water were *commoner** in the depressed group. Two depressed patients saw it as a peaceful scene, and only one made any reference to suicidal possibilities.

CARD 18 GF.—*A woman has her hands squeezed around the throat of another woman whom she appears to be pushing backwards across the bannister of a stairway.*

On this card the controls more often saw the woman as throttling the girl (aggressive theme) and the depressed group more frequently saw the woman acting in a punitive capacity; about half of each group interpreted the woman as comforting or assisting the girl following illness or accident. There were no great differences in the relationship of the two figures, but the smaller figure was seen as *masculine instead of feminine** in a number of the depressed responses.

CARD 19.—*A weird picture of cloud formations overhanging a snow-covered cabin in the country.*

Many of the controls called this a futuristic picture (or something similar) though *few of the depressed did so*,* and references to storm or snow were *more*

*frequent** in the controls. Some of both groups thought the house looked snug, although the storm was raging outside.

CARD 20.—*The dimly illustrated figure of a man (or woman) in the dead of night leaning against a lamp post.*

The figure is usually taken to be a man, though some of each group said it was a woman; vague descriptions like "someone" were *commoner*** in the depressed group. References to the person's mood being depressed were *more often found** in the controls.

TAT—Mean Score Values and Correlations.

Categories scored in the *TAT* were (i) Themes, classed as Popular Themes, Superior Themes and Alternative Themes; for scoring purposes these were given arbitrary marks of 1, 2 and 3 respectively; (ii) Identification, scored when the subject made a *definite* identification of himself in the story; (iii) Faulty Percepts, as when the subject described a female figure where a male is depicted, or otherwise produced a distorted mental image of the picture; (iv) unusual or abnormal thematic material; (v) Delayed responses; (vi) failed or rejected cards. Reasons of space preclude giving a full table of scoring values, but the following differences between the control and depressed groups may be mentioned.

The depressed group scored lower values for Total Time, Mean Response Time, Range of Response Times and Alternative Themes. Popular themes were scored about equally in both groups, Superior Themes were scored significantly** less frequently among the depressed patients; elicited thematic material, also unusual or abnormal material, was higher in the depressed group. Identification with the figures in the pictures was slightly commoner in the depressed patients, and faulty percepts were significantly* commoner (this may be a function of the slightly higher mean age of the group); failed or rejected cards were significantly** commoner in the depressed.

Examination of the coefficients of variation indicated that the depressed group tended to show less variability in *all* except the following scoring categories—Popular Themes, Identification and Ratio of longest : shortest Response Time; these were more variable than the controls.

The Mean Response time to each *TAT* card was also calculated for the two groups. Fig. 1, a histogram demonstrating the findings, indicates the longer response time of the controls and also their greater variability of response times. It will be seen that Card 9 GF, the two abstract cards (11 and 19) and the blank card (16) produced most hesitation among the controls; Cards 11, 16 and 9 GF also possessed the longest response times in the depressed group, though the hesitation is less pronounced than in the controls. The mean response times of two groups are most similar on Cards 4, 7 GF, 8 GF and 20, and the discrepancies in mean response time are most marked on Cards 19, 9, 5, 11, 12 and 16 respectively.

Significant positive correlations within the *TAT* were (*a*) number and quality of Themes & Intelligence, $r = +0{\cdot}66$, (*b*) number and quality of Themes &

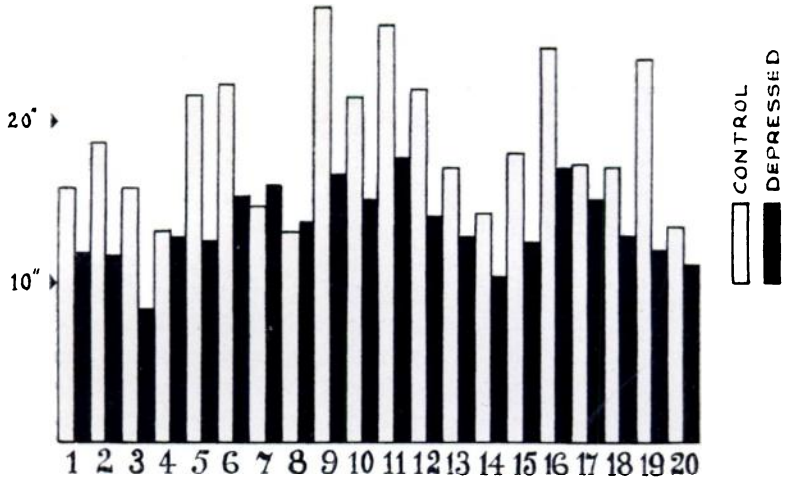

FIG. 1.—*TAT*: Mean response-times (seconds) of the control and depressed groups to each card.

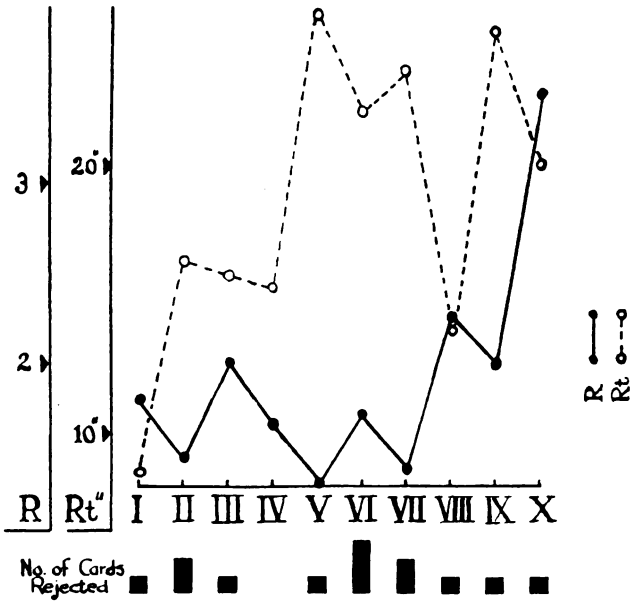

FIG. 2.—Rorschach Test: Mean number of responses (R) and mean response-time (Rt) of the depressed group to each plate.

Total time, $r = +0{\cdot}64$. There was no correlation between Themes and Mean Response Time.

Comparison of the TAT and Rorschach Test Scores.

With regard to the Rorschach test, it is not proposed to give the findings in any detail, and it is sufficient to mention that the results are in accordance with studies published for series very much larger than this (see Beck, 1944; Johnson and Sherman, 1948; Rapaport, 1946). However, certain findings

with regard to R (number of responses) and Rt (initial response time) may be of interest. The longest response times in the depressed group were on Rorschach Cards V, IX and VII, and the shortest was on Card I ; Card X was most productive of responses, and Card V least productive. Card VI was most often rejected and Card IV was the only one not to be rejected at all. The relationship of these scores is shown graphically in Fig. 2 ; there is no correlation between R and Rt ($r = -0{\cdot}09$).

It was noticeable that for scores common to both tests, such as Mean Response Time, Total Time and Number of Responses (or Themes), the coefficient of variation was considerably lower in the *TAT*. To some extent this might be anticipated, as the *TAT* presents the subject with a more formal situation than the rather amorphous blots of the Rorschach. Regarding correlations between the Rorschach and *TAT* tests, the only significant ones were (*a*) F + & Themes, $r = +0{\cdot}56$; (*b*) number of cards failed or rejected in each test, $r = +0{\cdot}56$. Non-significant positive correlations included the following :

R & Themes.
R & Alternative Themes.
dd & Themes.
Rorschach Response Time & *TAT* Response Time.
Rorschach O-Scores & Abnormal Themes.

and non-significant negative correlations were :

A & Themes.
W & Themes.
F + & Faulty Percepts.
H & Identification.
Sum C & Identification.
Rorschach Total Time & *TAT* Total Time.

There was no correlation between Rorschach O + & *TAT* Alternative Themes, nor between Rorschach O − and *TAT* Faulty Percepts.

One of the correlations between the two tests is perhaps worthy of special mention. An abnormal type of Rorschach response, not uncommon among depressed patients, is what one might call a " disrupted anatomical " response. A few examples from different cards in several patients may make the meaning clearer than description.

Card I : That could be part of the skin of a frog.
,, II : Looks like somebody's intestines or something, shot open, burst open. Blown to bits.
,, II : Flesh and blood.
,, IV : I should think something split open, spread out, dissected. Could be a human being . . . backbone, buttocks, legs and arms, head squashed.
,, X : It's a fish, but it's been separated—it's in parts but it's fish. Head here—the rest is pieces of the body.

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It was noted that the same patients tended to give the "broken violin" response on *TAT* Card 1, also "broken doll" responses on Card 7 GF. The number of disruptive-anatomical Rorschach responses was correlated with the number of broken-violin plus broken-doll responses over the series, and a significant positive correlation was found, $r = +0{\cdot}79^{**}$.

Discussion.

One important secondary difference between the control and depressed groups was, of course, that the latter was hospitalized; this appears most clearly in Card 16, but it may possibly be a factor behind other differences.

Summing up the significant differences between the two groups, first, the depressed are less versatile. The stories of the controls are imaginative, whereas among the depressed one finds static description and at the best a single suggested action and outcome. It seems to be this failure of imaginative thinking which causes rejection of more cards by depressed patients rather than specific, complex-determined emotional precipitants. This is what Beck calls the lethal effect of depression upon the imagination.

There is also a levelling effect upon performance. That is, when presented with a standard test the depressed patients perform much more to a pattern than do the normals, and show less variability or individual difference. This holds good not only for imaginative content but also for a number of the quantitative scoring categories.

The depressed patients lacked drive and had no desire to come to grips with the world; in Card 1 the boy lacks ambition, the external reality (the violin) is undistinguished or broken. They avoid human relationships (there are no other people imagined in Card 5; the boy is not considered in relation to his family in Card 1; the characters in Card 10 are praying, not embracing). When other people are depicted they may be rejected as in Card 4, and in Card 9 GF the second figure is not actively involved with nor related to the other. The controls suggest emotional relationships with other people, and if the figure is solitary, he or she may be unhappy although the ability to recover is allowed. To a depressed subject loneliness is an ordinary situation—the person is just thinking. In Card 14 the depressed patient tends to look into a moonlit world, whereas the controls either see a new dawn and the hope it brings or else they themselves are sitting in the light. The future is not visualized and few outcomes to the stories are given by depressed patients. The unreality of Card 19 is passed over, whereas the controls seldom fail to comment on it. Aggressive responses directed externally are not, as might be thought, fewer in depressed patients nor (as has been suggested) are they infrequent in controls.

The outstanding features are the partially withdrawn state of the depressed patient and the alteration of the reality he sees around him. There is an emotional and apperceptional change of state to a dim, inert Nirvana from which he surveys the decay of the universe.

It is difficult to draw firm conclusions about the relationship of the two tests in so far as they may be coincident or complementary. However, there does seem to be a definite relationship between good form responses in the Ror-

schach and the productivity of *TAT* themes; also, the person who fails cards in one test is likely to fail cards to a similar extent in the other. Both of these correlations may well be a function of the intelligence of the subject. They were the only significant correlations obtained, but some interest also attaches to absence of correlation. For example, there is no indication that the subject who produces good original Rorschach responses will also produce a multiplicity of themes on the *TAT*; nor does the subject who produces the autistic type of Rorschach O – (poor original) response necessarily tend to produce apperceptional distortions on the *TAT*. Further, when human forms are seen on the Rorschach it does not follow that the subject will tend to identify himself on the *TAT* pictures; and in so far as the amount of time spent on the tests is a measure of ability or interest in them, there is no indication that subjects tend to behave similarly on both.

There is a suggestion that the depressive syndrome is recognizable in certain aspects of both tests—as in the fixed type of approach and the very low productivity in creative imagination; but it also seems possible that the level of organization affected by the illness may be detected by the differential ability shown in the two tests. Our work with them in other diagnostic groups suggests that the Rorschach is an indicator of the personality's imbalance within itself, whereas the *TAT* may indicate the degree of adjustment preserved towards outer reality. An example may clarify this statement—in acute psychotic states of good prognosis, such as brief catatonic reactions or "bromide schizophrenia" the Rorschach is noticed to show a typically schizophrenic and autistic configuration, whereas the *TAT* is much more satisfactorily performed. A contrasting picture may be demonstrated in schizophrenia, catatonic type, where high imaginative productivity may be shown to be retained on the Rorschach, though the *TAT* thematic material is of poor quality and of a bizarre nature. In a process schizophrenia of hebephrenic type both records will be poor in quality and showing autistic variations.

A final investigation was to score the depressed patients according to whether their Rorschach or *TAT* records more nearly approached normality. When this was done it was noted that there was a tendency for cases of good prognosis to show a better performance on the *TAT*; this may imply a better grasp on reality which would be prognostically favourable.

Summary.

The Thematic Apperception Test and the Rorschach Test were given to two matched groups, one consisting of moderately depressed patients and the other a series of normal controls. The objectively evaluated material of the control group was used as a norm, and responses of the experimental group which diverged from this to a statistically significant degree were taken to be associated with the depressive syndrome; these are noted and discussed, and it is suggested that divergences of this nature should form the basis of *TAT* interpretation. Correlations between Rorschach and *TAT* scores are discussed; from the findings it seems likely that the two tests plumb different levels of

personality integration, and differential performances on the tests may be of assistance in diagnosis and prognosis.

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