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THE ADMINISTRATION EFFECT OF HARTMAN'S BASIC
THEMATIC APPERCEPTION TEST SET ON ANXIETY,
DEPRESSION, AND HOSTILITY

A Thesis

by

EDWIN E. CRENSHAW, JR.

Submitted to the Graduate School
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ABSTRACT

THE ADMINISTRATION EFFECT OF HARTMAN'S BASIC
THEMATIC APPERCEPTION TEST SET ON ANXIETY,
DEPRESSION, AND HOSTILITY. (June 1984)

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This research was designed to examine the effect of the administration of an abbreviated form of The Thematic Apperception Test (TAT) on anxiety, depression, and hostility as measured by the Multiple Affect Adjective Checklist (MAACL)-Today form. Sixty undergraduate psychology students were subjects and were randomly assigned to one of three experimental conditions; TAT, Rockwell, or Control. All subjects were pretested with the MAACL-Today form. Subjects in the TAT and Rockwell groups were given instructions for group administration of the TAT and wrote stories about eight TAT cards or eight Norman Rockwell prints. The third group served as a Control group and was asked to sit quietly until the other groups had finished their

tasks. Results indicate a failure of the randomization process with the Rockwell group significantly higher on the dependent measures than the TAT group. There were no significant changes between pretest and post-test scores for any of the dependent variables regardless of grouping. The findings are supportive of the use of an abbreviated TAT set.

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Dedicated to

My family

Thelma McGill Crenshaw

Jefferson G. Crenshaw

Patricia R. Crenshaw

Christopher P. Crenshaw

Allan R. Crenshaw

Special People

Mr. & Mrs. Robert A. Levine

Mr. & Mrs. Robert L. Bambauer

and

Diann S. Melson

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INTRODUCTION

Projective techniques are used in clinical settings to gain information about an individual or group of individuals, that may not be easily accessible by more conventional means. It is believed that in creating fantasies about the stimulus, the individual reveals characteristics of his/her own personality. In order to distinguish between personality characteristics and characteristics that are direct responses to the stimulus, it is essential to know as much as possible about the effects of the stimulus on the individual. Zubin (1949) states, "It is clear that...the stimulus itself needs much more clarification before we can differentiate that which inheres in the stimulus from that which inheres in the responder himself" (p. 18). Although Zubin's statement was about the Rorschach Inkblot Test, it is applicable to projective techniques in general.

Thematic Apperception Test

The Thematic Apperception Test (TAT) is a projective instrument that was introduced by Morgan and Murray in 1935. It was described as a series of

ambiguous pictures about which the subject would generate stories, or fantasies, that contained various aspects of the subject's personality (Morgan & Murray, 1935). Not long after the TAT was published by Murray in 1943, questions about the "ambiguous" nature of the stimulus cards began to surface. Researchers were beginning to notice that the stimulus pictures of the TAT tended to elicit sad stories from subjects. Eron, Terry, and Callahan (1950) used a rating scale for emotional tone to evaluate TAT stories. They found that most stories produced were sad in emotional tone. In related studies, it was learned that stories are more often negative than positive (Eron, 1950) and additional evidence was gained that further supported the predominance of sad stories elicited by the TAT stimulus cards (Eron, 1953).

Guided by the findings of previous research, Lebo (1955) hypothesized that, since the TAT evoked mostly sad or negative stories, people would immediately dislike the stimulus pictures. His findings did not support his hypothesis. He found that only 10 of the 31 TAT pictures were immediately disliked by his subjects. Like or dislike of the stimulus was not responsible for the predominance of sad/negative stories elicited by the TAT pictures. Some other factor or factors were obviously responsible for the tone of the stories.

Murstein (1958) examined the stimulus characteristics of the individual TAT cards with an interest in the emotional tone (pleasantness-unpleasantness) and the amount of structure (ambiguous-unambiguous) each contained. His findings indicated that both factors, emotional tone and the amount of structure, contributed to the sad quality of stories produced. The more ambiguous and the more unpleasant pictures both produced stories that were more negative and sad than did the pictures that were less ambiguous or more pleasant.

Most of the research up to this point had dealt with the stimulus material and its effect on the stories produced. What effect the stimulus had on the affect of the subject was not investigated until Newmark, Hetzel, and Frerking (1974) examined the effects of TAT administration on state and trait anxiety. Their findings indicate that state anxiety increased following the administration of the TAT and suggested that the TAT tends to increase state anxiety in subjects. The design for this research was a pretest-posttest with no control group. The testing for this research was conducted over a two day period and there were no controls for circumstances in the subjects' lives that may have effected state anxiety. Due to the inadequacies in this research design, the findings are questionable.

While the literature is somewhat lacking on the specific topics questioned by this research project, there is an abundance of literature on the TAT to assist researchers interested in using the instrument. It is known that the TAT can be administered in a group setting and not significantly effect the stories produced or the content variables of the stories as compared to the individually administered form of the test (Eron & Ritter, 1951; Lindzey & Heinemann, 1955). It is also known that the method of presentation, whether projected or providing individual sets of cards, does not significantly effect test results. Previous research also shows that presentation of the stimulus card for 20 seconds followed by 5 minutes for subjects to write responses is superior to longer exposure of the stimulus and longer writing periods (Lindzey & Silverman, 1959). For the would-be researcher it is also helpful to know that abbreviated forms of the TAT have long been advocated (Dana, 1956; Henry, 1956) and that abbreviated sets of TAT cards fulfill the main purpose of the complete set (Dana, 1956; Henry, 1956). In an attempt to contribute to a more standardized use of the TAT, Hartman (1970) surveyed over 200 psychologists and used the survey results to establish a basic set of TAT cards to be used. This set includes the eight TAT cards most

often used by those surveyed (#1, 2, 3BM, 4, 6BM, 7BM, 13MF, and 8BM). Since shortened forms of the TAT are widely used, following Harman's basic set for an abbreviated form of the TAT will hopefully lead to more standardized use of the instrument and allow easier comparison of research findings. The use of an abbreviated set reduced the amount of time needed for testing and decreased the effect time, as a variable, has on testing.

Multiple Affect Adjective Check List

The dependent measure selected for this experiment is the Multiple Affect Adjective Check List (MAACL) (Zuckerman & Lubin, 1965). The MAACL is a combination of an earlier check list developed by Zuckerman and a depression scale developed by Lubin. The MAACL is available in two forms, the "In General" and the "Today," which measure enduring characteristics and situational characteristics respectively. The test has scales for anxiety, depression, and hostility.

Zuckerman and Lubin (1965) state that:

The MMPI scales which are most consistently correlated significantly with the Today Anxiety scale are the Depression and Psychasthenic scales which are the classical anxiety scales of the original MMPI scales. The Depression scale of the MAACL is also correlated with those two scales and the Schizophrenia scale as well. The Hostility scale of the MAACL is mainly associated with the MMPI Psychasthenic and Schizophrenic scales although in female patients it is also

significantly correlated with the MMPI Depression and paranoia scales. (p. 15)

The test has good discriminant validity for the separate scales and high test-retest reliability on the anxiety, depression, and hostility scales (Zuckerman, Lubin, Vogel, & Valerius, 1964). The "Today" form of the MAACL has proven to be a sensitive measure of changes in affect associated with testing situations (Knapp, Zimmerman, Roscoe, & Michael, 1967) and is sensitive to changes in affect as experienced by feelings of anxiety, depression, and hostility (Zuckerman & Lubin, 1965).

Hypotheses

This research examined the stimulus effects of Hartman's Basic TAT Set on three types of affect: anxiety, depression, and hostility. It is hoped that by learning more about the affective effects of the TAT administration, clinicians can make more informed judgments about the use of this instrument and the interpretation of data gathered from its use. It is also hoped that this research will help clinicians discern more of "that which inheres in the stimulus from that which inheres in the responder himself" (Zubin, 1949, p. 18).

The primary hypothesis of this research is that the administration of the TAT will significantly

increase anxiety, depression, and hostility in subjects. It is also hypothesized that subjects responding to color pictures, from about the same era, that are less ambiguous and more pleasant, such as Norman Rockwell prints, will not experience significant increases in these affects. A control group, not exposed to either of these conditions is also expected not to experience significant increases in the repeated measures of the affects over the same time period.

METHOD

Subjects

Subjects were 60 (38 female, 22 male) undergraduate psychology students at Appalachian State University who received extra credit for participating in this experiment. The mean age of the participants was 19.1 years and the age range was from 18 to 24 years.

Instruments

The following TAT cards #1, 2, 3BM, 4, 6BM, 7BM, 13MF, and 8BM (Murray, 1943) comprising Hartman's Basic Set (Hartman, 1970) were used. Eight prints from The Norman Rockwell Poster Book (Schau, 1976); "After the Prom" (1957), "At the Doctor's Office" (1958), "Freedom from Want" (1943), "Discovering Santa" (1956), "Mighty Proud" (1946), "Doctor and Doll" (1929), "The Tattooist" (1944), and "Going Fishing (Summer)" (1948), were also used. (The TAT cards and Rockwell pictures were presented in the order listed.) Slides were made of the TAT cards and the Rockwell prints were presented using slide projectors and screens. The TAT cards were presented in

black and white and the Rockwell prints were presented in color.

Scores derived from the Multiple Affect Adjective Check List-Today form (Zuckerman & Lubin, 1965) were used as the dependent measures of anxiety, depression, and hostility.

Procedure

Subjects drew numbers and, using a random number list, were assigned to one of three groups; TAT, Rockwell, or Control. The TAT and Control group had 13 females and 7 males each and the Rockwell group had 12 females and 8 males. After assignment to groups and prior to pretesting, subjects were sent to rooms set up for their respective tasks. Subjects were then pretested with the MAACL-Today form following instructions provided on the test. Instructions were read to the subjects by an experimenter and questions, if asked, were answered.

The TAT and Rockwell groups received instructions similar to those suggested by Semeonoff (1976, p. 109) except no example using TAT card #1 was given because card #1 is part of Hartman's Basic Set. (See Appendix A for complete instructions.) Subjects in the TAT and Rockwell groups were then shown their respective stimulus slides for 20 seconds per slide and were allowed 5 minutes after each exposure to write their responses.

Subjects in the Control group were asked to sit quietly until the other groups had completed their tasks, at which time all three groups were posttested with the MAACL-Today form. After posttesting, all subjects were brought together in one room and debriefed.

It was necessary to have four testing sessions in order to get the desired number of subjects. For each of the four testings, male and female experimenters alternated groups to reduce the effects sex and demeanor might have on the subjects. Each testing session lasted approximately one and one-half hours.

Statistical Analysis

Each of the dependent variables, anxiety, depression, and hostility, were analyzed using a 3 x 2 analysis of variance for repeated measures. Significant main effects of grouping were analyzed using pairwise analysis of variance for repeated measures. Comparison of pretest and posttest scores was made using pooled t test adjusted for the multiple comparison of all pairs of means.

RESULTS

The means, ranges, differences, and standard deviations for the dependent variables of anxiety, depression, and hostility by groups are presented in Table 1. The data gathered met the underlying assumptions for parametric analysis. The dependent variables of anxiety, depression, and hostility were examined separately.

Anxiety

An analysis of variance for repeated measures for pretest and posttest scores by groups (see Table 2) revealed a significant main effect of group, $F(2, 57) = 3.60, p < .034$. An analysis of variance comparing TAT and Rockwell groups, TAT and Control groups, and Rockwell and Control groups revealed a significant main effect of group between the TAT group and Rockwell group, $F(1, 38) = 8.47, p < .006$. The TAT group was significantly lower on the anxiety measure than was the Rockwell group. The trend was TAT < Control < Rockwell.

An analysis of variance of pretest scores by group revealed a significant main effect of group,

Table 1

Pretest/Posttest Means and Differences

Dependent	<u>N</u>	Prerange	Premeans	Std. Dev.	Postrange	Postmeans	Std. Dev.	Difference*
ANXIETY								
TAT	20	0-17	5.75	4.76	1-14	7.95	3.61	+2.20
Rockwell	20	2-21	10.10	4.60	3-17	9.45	3.12	-0.65
Control	20	2-16	8.70	4.39	1-16	8.40	4.24	-0.30
	60	Means (N = 60)	8.8	4.86		8.60	3.67	
DEPRESSION								
TAT	20	2-33	10.00	7.36	2-24	13.25	5.98	+3.25
Rockwell	20	4-34	18.75	8.23	3-31	19.10	7.04	+0.35
Control	20	3-30	14.45	7.81	3-32	17.05	7.35	+2.60
	60	Means (N = 60)	14.40	8.48		16.47	7.13	
HOSTILITY								
TAT	20	0-20	6.80	4.95	0-19	9.50	4.59	+2.70
Rockwell	20	1-27	11.05	5.23	4-23	11.65	4.04	+0.60
Control	20	1-14	8.15	4.30	1-22	10.95	5.68	+2.80
	60	Means (N = 60)	8.67	5.08		10.70	4.82	

*Differences were nonsignificant

Table 2

Analysis of Variance for Pretest and Posttest Anxiety by Groups

Source	Sum of Squares	Degrees of Freedom	Mean Square	<u>F</u>	Tail Prob.
Mean	8450.40833	1	8450.40833	352.49	0.0000
Group	172.61667	2	86.30833	3.60	0.0337*
Error	1366.47500	57	23.97325		
Anxiety	5.20833	1	5.20833	0.49	0.4861
Anxiety X Group	48.31667	1	24.15833	2.28	0.1115
Error	603.97500	57	10.59605		

*Denotes significant F

$F(2, 57) = 4.69, p < .013$. The difference between pretest scores was between the TAT group and the Rockwell group, $t(57) = -3.00, p = .0088$ which, after adjustment for the multiple comparison of all pairs of means, was significant at the .05 level.

There were no significant posttest differences.

Depression

An analysis of variance for repeated measures for pretest and posttest scores by groups (see Table 3) revealed a significant main effect of group, $F(2, 57) = 6.63, p < .0026$ and a significant main effect of pretest-posttest, $F(1, 57) = 4.83, p < .032$. An analysis of variance for pretest and posttest scores comparing two groups at a time revealed that the TAT group was lower than the Control group, $F(1, 38) = 4.62, p < .038$ and lower than the Rockwell group, $F(1, 38) = 14.43, p < .0005$. The trend was TAT < Control < Rockwell.

An analysis of variance for pretest scores by groups revealed a significant main effect of grouping, $F(2, 57) = 6.28, p < .0034$, with TAT pretest scores being significantly lower than the Rockwell pretest scores, $t(57) = -3.54, p = .0008$ which, after adjustment for the multiple comparison of all pairs of means, is significant at the .01 level. A significant

Table 3

Analysis of Variance for Pretest and Posttest Depression by Groups

Source	Sum of Squares	Degrees of Freedom	Mean Square	<u>F</u>	Tail Prob.
Mean	28582.53333	1	28582.53333	353.36	0.0000
Group	1071.81667	2	535.90833	6.63	0.0026*
Error	4610.65000	57	80.88860		
Depression Pre/Post	128.13333	1	128.13333	4.83	0.0321*
Depression X Group	46.31667	2	23.15833	0.87	0.4233
Error	1512.55000	57	26.53596		

*Denotes significant F

difference also existed between posttest scores for the two groups, $t(57) = -2.75$, $p = .0088$ which, after adjustment for the multiple comparison of all pairs of means, is significant at the .05 level.

Hostility

An analysis of variance for repeated measures for pretest and posttest scores by groups (see Table 4) revealed a significant main effect for pretest and posttest condition, $F(1, 57) = 11.06$, $p < .0015$, with posttest scores being higher than pretest scores. Although the main effect of grouping was not significant, $p < .063$, it approaches significance and suggests that the trend, TAT < Control < Rockwell, is present although nonsignificant. A pairwise analysis of variance for pretest-posttest scores by groups, TAT and Rockwell, TAT and Control, and Rockwell and Control, revealed a significant main effect of grouping between the TAT group and Rockwell group, $F(1, 38) = 6.48$, $p < .015$ with the TAT group being lower than the Rockwell group.

An analysis of variance for pretest scores by groups revealed a significant main effect of grouping, $F(2, 57) = 4.03$, $p < .023$. Pairwise comparison of group means revealed that the TAT group scores were significantly lower on the hostility measure than were the scores of Rockwell group, $t(57) = -2.78$, $p = .0074$

Table 4

Analysis of Variance for Pretest and Posttest Hostility by Groups

Source	Sum of Squares	Degrees of Freedom	Mean Square	<u>F</u>	Tail Prob.
Mean	11252.03333	1	11252.03333	317.49	0.0000
Group	205.86667	2	102.93333	2.90	0.0629
Error	2020.10000	57	35.44035		
Hostility Pre/Post	124.03333	1	124.03333	11.06	0.0015*
Hostility X Group	30.86667	2	15.43333	1.38	0.2607
Error	639.10000	57	11.21228		

*Denotes significant F

which, after adjustment for the multiple comparison of all pairs of means, is significant at the .05 level.

There were no significant differences in posttest group scores.

DISCUSSION

No support was found for the primary hypothesis. The administration of Hartman's Basic TAT Set did not significantly increase measured anxiety, depression, or hostility in the subjects. Comparison of groups, to support the other hypothesis of this research, is inappropriate due to the failure of the randomization process.

A primary assumption underlying random assignment of subjects, drawn from a common pool, such as undergraduate psychology students who volunteer to participate in an experiment to experimental groups, is that those groups will be approximately the same. Therefore, randomly assigning 60 subjects, drawn from a common pool, to one of three experimental conditions consisting of 20 subjects per condition, should result in three groups that are approximately the same on the pretreatment measures.

In this research, the random assignment of 60 subjects, into three experimental groups, produced experimental groups that differed significantly on the pretest measures. For all three of the dependent

measures, anxiety, depression, and hostility, the TAT group and the Rockwell group differed significantly on the pretests, with the TAT group always scoring significantly lower than the Rockwell group.

Comparison of the overall mean scores ($N = 60$) on the pretests with the published norms for college students on the MAACL (Zuckerman & Lubin, 1965) reveals no significant differences on any of the scales nor do the individual groups, TAT, Rockwell, or Control differ significantly from the norms. However, they do differ significantly from each other in this experiment and these differences make it impossible to make conclusions based on group comparisons across the experimental conditions. The groups, TAT, Rockwell, and Control, must be examined individually.

Examination of the main effect in the analysis of variance for the dependent variables suggested that the groups started out differently and stayed different across the pretest-posttest condition, with the main effect of grouping significant for anxiety and depression, and approaching significance for hostility. The main effect of pretest-posttest was significant for depression and hostility, indicating that regardless of grouping, all subjects increased in measured depression and hostility. The main effect of

interaction was not significant in any of the dependent measures.

The TAT group did not change significantly on any of the dependent measures between the pretest and posttest. Previous research, using the complete set of TAT cards, has shown that state anxiety increased significantly following the administration of the TAT. The findings of this research indicate that measured anxiety did not increase significantly following administration of an abbreviated TAT set. Although data is lacking on the administration effects of the complete TAT on levels of depression and hostility, the findings of this research show that the administration of Hartman's Basic Set (Hartman, 1970) of TAT cards does not significantly increase measured anxiety, depression, or hostility in subjects. This finding suggests that, at least as far as negative card stimuli effects are concerned, Hartman's Basic TAT Set was not contributing to affective disturbance.

The Rockwell group showed almost no change between pretest and posttest. This series of Rockwell prints is by no means a standardized diagnostic instrument but, for those interested in developing such an instrument, it is encouraging to know that there are pictures that can be used for such purposes that have virtually no effect on the subjects' affective levels

of anxiety, depression, and hostility. Although none of the responses to the stimulus pictures and cards were scored, the stories produced by the Rockwell group were rich in personal projections.

The Control group had small but nonsignificant increases in measured depression and hostility. Although these changes were not statistically significant, they do suggest that something in the experimental process may have had a negative effect on the subjects. The time spent sitting quietly while the other groups completed their tasks may have been too structured or too unstructured. It is also possible that the subjects viewed this time as wasted and resented confinement during time that may have been spent in more self-satisfying ways.

The failure of the randomization process in this research has made it impossible to make generalizations based on group comparisons. This problem may not have existed had the subject population been larger or if subjects had been matched prior to assigning them to the experimental groups. Matching subjects on three variables would have involved either taking extensive baseline measures over a long period of time and possibly the disqualification of many subjects which would have necessitated a much larger subject pool than was used in this experiment.

Although comparison can be made between changes in anxiety following the administration of the complete TAT series and following the administration of Hartman's Basic TAT Set, comparison of changes in depression and hostility must wait until researchers examine the administration effects of the complete TAT set on these variables.

The method of administration used for both the TAT and Rockwell pictures was suggested for group TAT administration by Lindzey and Silverman (1959). Pictures were exposed for 20 seconds and then subjects were allowed 5 minutes to write their responses. This procedure worked very well. Subjects had an adequate amount of time to write their responses and appeared not to be rushed by a lack of time or bored by an excess of time.

In conclusion, two findings seem to stand out. First, the administration of Hartman's Basic Set (1970) does not significantly increase anxiety, depression, or hostility in subjects. Furthermore, since an abbreviated TAT set has long been advocated (Dana, 1956; Henry, 1956) and an abbreviated set fulfills the main purpose of a complete set (Dana, 1956; Henry, 1956), the Hartman Basic Set (1970) should be viewed as an acceptable alternative to a complete TAT set when use of an abbreviated form is warranted.

The second finding should provide some encouragement for researchers interested in developing a new projective technique similar to the TAT. The changes observed in the Rockwell group in this experiment suggest that it is possible to select a new series of pictures that subjects can respond to, like they respond to the TAT, that cause almost no change in the subject's level of anxiety, depression, or hostility.

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APPENDIX A

Group Instructions
for the Thematic Apperception Test

Group Instructions
for the Thematic Apperception Test

(Semeonoff, 1976, p. 109)

I am going to show you a series of pictures on the screen. In each case I want you to make up a story about the picture. Don't just describe what you see; pay some attention to the events that led up to the situation, what is happening now, and how it will turn out. In other words, I want you to write a story for which the picture might be an illustration. There are no "right answers." If you are in doubt about any details in the picture, don't ask; just treat it as what you think it is.

You will be notified 30 seconds before the end of your writing time so you can write an ending for your story.

VITA

Edwin E. Crenshaw, Jr. was born in Asheville, North Carolina, on December 22, 1947. He graduated from Lee H. Edwards High School in 1967 and entered The University of North Carolina at Asheville in August of the same year. In 1970 he withdrew from college to assume duties as manager of the Howard Johnson Motor Lodge where he had been employed for seven years. In 1971 Mr. Crenshaw began employment with Eckerd Drugs. In 1977, while still employed by Eckerd's, Mr. Crenshaw reenrolled at The University of North Carolina at Asheville and received a Bachelor of Arts degree in Psychology in May, 1980.

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