

Aggression in Fantasy and Overt Behavior¹ARTHUR R. JENSEN²*Teachers College, Columbia University*

THIS PAPER is concerned with the relationship of Thematic Apperception Test responses to overt behavior. A review of the research on this subject (9, ch. 1) suggests the following generalizations:

a. The thematic content per se of TAT stories seems to be related very slightly, if at all, to general behavioral traits or dispositions. But thematic content does seem to be related to temporary, situationally induced behavior, affective states, and drives.

On the basis of correlations between the fantasy themes of 40 adolescent boys and girls, and teachers' ratings of behavioral characteristics, Symonds concluded that the relationships between these two sets of variables were "insignificant and negligible" (19, p. 322). Studies by Pittluck (15) and Gluck (7) found no relationship between fantasy aggression and general overt aggressiveness. On the other hand, Bellak (3) showed that the number of aggressive words in TAT stories increased when the storyteller was insultingly criticized for the low quality of his stories. Essentially the same finding was made by Feshbach (6), who also showed that Ss who had a fantasy outlet for their induced aggression (by writing TAT stories) expressed less ag-

gression in a sentence completion test designed to get at the Ss' hostility toward the insulting examiner. Clark (4) showed that male Ss who presumably had been sexually aroused by being shown photographs of nude women had fewer themes of sex in their TAT stories than did control Ss, while another group of Ss under the disinhibiting effects of alcohol produced more themes of sex in their TAT stories after having been shown pictures of nude women. Lindzey (11) demonstrated that extrapunitive behavior on the part of the hero in TAT protocols increased significantly following failure in a social situation. McClelland et al. (12) have reported substantial positive correlations between *n* Achievement in TAT fantasies and several measures of behavioral achievement when the Ss were tested in an achievement-oriented situation. Sanford (16, 17), and Atkinson and McClelland (1) have shown that Ss produce more food-related responses to the TAT when they are made hungry by food deprivation.

b. The expressive or behavior-sample aspects of the TAT responses seem to be correlated with overt behavioral traits and would therefore seem to be a more valid basis for predicting overt behavioral traits than are the thematic or fantasy aspects of the TAT.

An example of this is Balken and Masserman's study (2), showing language and stylistic differences between obsessives, hysterics, and anxiety states. On the basis of a study correlating various aspects of TAT responses with various personality variables, Hartman stated: "Attention in the past has been centered upon thematic analysis in TAT interpretation. Formal characteristics of TAT responses should be given increased emphasis inasmuch as they can be more objectively determined and may, particularly in application to group testing, be more revealing of certain aspects of personality" (8, p. 35).

Problem

The present study examines both the

¹ This article is based on a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, under the Joint Committee on Graduate Instruction, Columbia University. The author is indebted to Dr. Percival M. Symonds, under whose direction and encouragement this study was undertaken.

An abstract of this article was read at the annual meeting of the Eastern Psychological Association, Atlantic City, New Jersey, March, 1956.

² Now at the Institute of Psychiatry (Maudsley Hospital), University of London.

thematic and the behavior-sample aspects of the TAT and their relation to overt aggressive behavior as a general disposition or trait. Aggression was the variable chosen for study because it lends itself particularly well to this kind of investigation; it is more easily identified and can be more reliably rated in both the TAT stories and in the *S*'s behavior than can many of the other personality variables purportedly revealed by the TAT. A review of the existing research led to the formulation of the following questions, in terms of which the present study was planned:

1. Is there a *direct* relationship between aggression in TAT fantasy and in overt behavior? In other words, do *S*s who show much overt aggression have more themes of aggression in their TAT stories than do *S*s who show little aggressiveness?

2. Is there an *inverse* relationship between fantasy aggression and overt aggression? Both Symonds (19) and Sanford (18) have suggested that needs which are repressed in overt behavior are more likely to find expression in fantasy, and that needs which are worked out in behavior are less likely to be expressed in fantasy.

3. Does the degree to which *punishment* is associated with aggression in fantasy permit prediction of overt aggressiveness? Some clinicians believe that when in fantasy punishment is associated with aggression, the *S* is less apt to be overtly aggressive. A study by Mussen and Naylor (14) lends support to this hypothesis.

4. The same idea has been put forth with respect to the amount of *defense* against aggression anxiety in the TAT. Is an *S* who denies the aggressive implications of a TAT picture or who has to rationalize or tone down the aggressive implications of his own story less apt to be overtly aggressive than an *S* who does not defensively modify his aggressive fantasies? Pittluck's research (15) suggests an affirmative answer to this question.

5. Do TAT stories when viewed as a *behavior sample* show a relationship to the *S*'s overt behavior in a wide variety of other situations? For example, would aggressively delinquent boys reveal in their TAT productions the socially defiant, rebellious attitude which characterizes their behavior in other situations? Delinquent or antisocially aggressive behavior may be interpreted partly as a rejection and defiance of certain social standards (5). The TAT would thus

be expected to elicit from delinquent boys behavior which violates the taboos of the examiner or of the setting in which the TAT stories are produced. In other words, the TAT production may be viewed as a direct sample of the *S*'s behavior and not simply as a fantasy which indirectly reflects the *S*'s needs and conflicts. According to this hypothesis boys who exhibit socially unacceptable forms of aggressive behavior in school would give a sample of their "unacceptable" behavior in the TAT by using tabooed language, themes of sex, tabooed forms of sex, and unusually repulsive or tabooed forms of violence, such as mutilation of the victim. These forms of expression may be regarded as aggressive acting-out in the TAT situation and are therefore direct behavior samples.

On the basis of these questions there were formulated the specific hypotheses which could be tested by comparing the TAT productions of three groups of *S*s differing widely with respect to overt aggressive behavior. Each group was relatively homogeneous as regards aggressive behavior, and the *S*s in each group were selected as relatively extreme representatives of a particular type of behavior. It was believed that these conditions would allow a maximal opportunity for the relevant TAT variables to manifest significant differences. It was considered important that all the *S*s be of approximately the same age, be selected from the same setting, and be tested under the same conditions. These requirements were fulfilled. The three groups, composed of high school boys, were labeled *Aggressive-Bad* (socially unacceptable overt aggression); *Aggressive-Good* (socially acceptable overt aggressiveness); and *Passive* (extremely lacking in all overt aggressive qualities). The method of selecting the *S*s is described in the following section.

Hypotheses

1. The *Aggressive-Bad* group has the most TAT aggression; the *Passive* group has the least. (Direct relationship.)

2. The *Aggressive-Bad* group has the least

TAT aggression; the Passive group has the most. (Inverse relationship.)

3. The proportion of mild forms of TAT aggression (Scores 2-6) is smallest for the Aggressive-Bad group. (Qualitative relationship.)

4. The proportion of stories in which the hero is the victim of aggression to those in which the hero is the aggressor is smallest for the Aggressive-Bad group, largest for the Passive group.

5. The Aggressive-Bad Ss have fewer themes of suicide than either of the other groups.

This is based on the belief that suicide represents aggression turned against the self and that nonaggressive Ss tend to be more intropunitive and develop reaction formations against the overt expression of aggressive impulses.

6. The Aggressive-Bad group has the smallest proportion of punishment relative to aggression in their TAT stories; the Passive group has the largest proportion. (Dynamic relationship.)

7. The Aggressive-Bad group has the smallest proportion of defense relative to aggression; the Passive group has the largest proportion. (Dynamic relationship.)

"Defense" refers to an evasion used by the storyteller, presumably to avoid aggression anxiety. The aggressive fantasy is not expressed as "raw" aggression, but is rationalized, made socially acceptable, or accidental, or is qualified in such a way that its aggressive implications are lessened or hidden.

8. The Aggressive-Bad group has the largest proportion of aggressive stories containing "raw" aggression, i.e., aggression free from association with punishment (or guilt) or defense. This is a corollary of Hypotheses 6 and 7. (Dynamic relationship.)

9. The Aggressive-Good and Passive Ss have more themes of natural death than the Aggressive-Bad Ss. (Dynamic relationship.)

This is derived from the belief that natural death occurring in a TAT story represents a disguised expression of aggression and is thus psychologically similar to the above-mentioned defenses.

10. The Aggressive-Bad group has more themes of sex, tabooed sexual content, tabooed language, and tabooed or "shocking" forms of violence than either of the other groups. (Behavior-sample relationship.)

This is based on the assumption that the expression of sexual and tabooed themes in the TAT stories, especially when they are written in a school setting, represents a lack of inhibition about expressing socially disapproved thoughts and actions. Tabooed language and tabooed sex are also forms of verbal aggression—perhaps the only forms of verbal aggressive behavior that the test situation permitted. (A more open form of aggressive behavior would have resulted in

the S's dismissal from the testing room.) When these tabooed ideas can "break through" into written expression, it would seem to indicate both a certain preoccupation with the socially tabooed and a flaunting defiance of customary decency and propriety. The manifestation of these attitudes in the general school behavior of the Aggressive-Bad Ss was probably among the reasons many of them were selected by their teachers for this experiment.

PROCEDURE

Subjects

Three types of Ss were desired, each showing different behavioral characteristics with respect to overt aggressiveness. As a convenience, the three types were labeled *Aggressive-Bad*, *Aggressive-Good*, and *Passive*.

The *Aggressive-Bad* Ss were those whose aggressiveness got them into trouble at school. They were overtly aggressive in disruptive, socially unacceptable ways.

The *Aggressive-Good* Ss were those whose aggressiveness found socially acceptable expression in athletics, leadership, competition, and other nondisruptive activities.

The *Passive* Ss were those so lacking in aggressive qualities as to be shy, quiet, unobtrusive, unassertive, and diffident.

Ss of these three types were selected in an all-boy high school with over a thousand students, most of whom live in an industrial community. Every teacher in the school was provided with instructions for selecting these Ss. Each was asked to submit the names of five boys he knew from personal experience during the current school year (this was done in May) who most fully met the description of the specified types. Every teacher was asked to rank these Ss for degree of conformity to the behavioral traits described and also to fill out check lists of various descriptive criteria with respect to kinds of aggressive behavior, indicating those characteristics which best described his reasons for selecting each S.

Fifty-one teachers submitted a total of 756 names. This represents only 433 students, since some were submitted by as many as six teachers. There were disagreements in classifying 25 of the students. These were immediately eliminated as possible Ss for the present study.

From the remaining 408 students a smaller number was selected for testing. The Ss were selected first on the basis of the number of teachers submitting their names. The second basis for selection was the rank assigned to the

S by the teacher. The behavior check lists were used to ensure a high degree of homogeneity within each of the groups with respect to types of aggressive behavior. Items frequently checked by the teachers for Ss in each group were:

Aggressive-Bad. Disruptive, unruly, bad temper, defiant of authority, headstrong, boisterous, "tough," surly, destructive of property, aggressive bravado.

Aggressive-Good. Active, energetic, helpful, leader, likes competition, "carries the ball," self-assertive, acceptable verbal aggression (e.g., debate), seeks recognition, engages in competitive sports.

Passive. Quiet, retiring, meek, unassertive, withdrawing, diffident, timid, does not actively participate, submissive, a follower, "shrinking violet."

It is believed that relatively homogeneous groups of the most extreme and representative Ss of each type were obtained by this procedure. All the Ss were between 15 and 17 years of age. Fortuitous circumstances at the time of testing prevented the Ns in each group from being equal (Aggressive-Bad = 25, Aggressive-Good = 22, Passive = 27.)

Selection of TAT Pictures

A pilot study was conducted in a comparable all-boy high school in another city in order to determine the most effective and efficient method of administering the TAT and the most suitable pictures for the purpose of this study. The Ss in the pilot study were students in four different English classes (total $N = 90$). Four different methods of group administration of the TAT were tried. Analysis of these data led to the following conclusions: (a) the Ss were most productive when required to write stories to *five* of the TAT pictures during the class period of 50 minutes; (b) there were no systematic differences in the stories (as scored for this study) between 10th-, 11th-, and 12th-grade Ss; (c) all the stories were scored on the main variables of this study and from these data the TAT pictures were ranked according to their power to elicit these themes. The

theme of aggression was weighted most heavily in determining the rank order of the pictures. The ten most fruitful cards, in the order of their effectiveness, are listed below. These were used in the main study.

- 18BM ... Man—hands clutching him from behind.
- 13MF ... Woman lying on bed—man standing near.
- 17GF ... Woman standing on bridge over water.
- 18GF ... A woman has her hands squeezed around the throat of another woman.
- 3GF ... Woman standing in doorway with downcast head.
- 4 ... Young woman clutching shoulders of young man who is turning away.
- 3BM ... Boy huddled on floor against couch.
- 9GF ... From behind a tree a young woman watches another woman running along a beach.
- 20 ... Man standing under street light.
- 15 ... Gaunt man standing among grave-stones.

Administration of the TAT

The Ss were tested in groups of about 25 Ss of all types (Aggressive-Bad, Aggressive-Good, and Passive). Thus there were three test sessions. Ss sat in alternate seats and were well proctored. Each session lasted 90 minutes and all Ss wrote ten TAT stories within that time. A shortened and simplified version of the standard Murray instructions (13) was printed on the cover of the test booklets in which the Ss wrote their stories; these instructions were also read aloud by the examiner at the beginning of the session.

Three sets of TAT cards were used; the examiner exchanged each S's picture as each story was completed, or the Ss themselves exchanged pictures. Thus each S could write at his own speed, though to ensure that everyone would finish in one session, the examiner announced at 8-minute intervals that a certain number of stories should have been completed. An examination of the mean scores on the TAT variables for

each of the three test sessions (9, p. 96) showed that if there was any "leakage" of information about the TAT from Ss in the first session to the Ss in the second and third sessions it had no effect on the results of the experiment. There were no consistent or significant differences between the three sessions.

Scoring the TAT

A special scoring system was devised for the purpose of this study. The key variables are *Aggression*, *Punishment* for the aggression, and *Defense* against aggression-anxiety. A distinction was made between whether the hero (central character) of the story is the aggressor or the victim of aggression. Since a more refined means of classifying aggression and punishment was desired, these variables were subdivided and assigned "scores" according to their intensity.

All the other variables are indirectly related to aggression. They were scored simply on the basis of their presence in the story. *Suicide* is aggression against the self. The occurrence of *Natural Death* in a story may be a disguised expression of aggression. *Sex* and *Tabooed Language* may have aggressive connotations or may be an expression of aggression in the test situation. Also they may indicate weak inhibition of socially disapproved forms of expression. *Tabooed Violence* is a particularly primitive and sadistic expression of aggression. The scoring instructions, given below, were made as complete, explicit, and unequivocal as possible, so that by following them carefully even persons not trained in the TAT can achieve close agreement in scoring.

Instructions for Scoring the TAT

Score only what is explicitly stated in the story. Do not make any inferences about what might be implied.

Aggression Score

Hero Aggressor. The main character of the story is responsible for the aggression; he (or she) is the one who can be called the aggressor. For determining the main character, see Murray's criteria for distinguishing the hero (13, p. 6).

Hero Victim. When the main character of the story is aggressed against by another character in the story, the aggression is scored in the *Hero Victim* category, since the hero is not the one who commits the aggressive act but is the victim of the aggressive act.

Indeterminate. When there is aggression in the story and it is difficult or impossible to decide if the story has a main character, the aggression should be scored in the *Indeterminate* category.

- 0 Inert, no action, mere contemplation; neutral or nonaggressive action; no indication of aggression in any form.
- 2 A character in the story dominates or controls another, takes self-initiated action, seems to do things with a purpose of his own.
- 4 Character in the story is actively working, struggling, striving, willfully overcoming obstacles, resisting pleas of others, daring exploits, being actively brave, etc.
- 6 Verbal aggression; swearing at another, "telling off" another, threatening another; verbal coercion.
- 8 Physical aggression not resulting in death and which usually is not expected to cause death: fighting, struggling with another, hitting, causing injury, physically subduing, rape, robbery, and deliberate destruction of property.
- 9 Physical aggression not resulting in death but which usually results in death, such as shooting another person, choking someone, knifing, inflicting any kind of injury which seems severe enough to result in death. (This score differs from 10 in that killing or death, or the intent to kill or cause death, are not explicit.)
- 10 Physical aggression resulting in death: murder, killing. (Killing or intent to kill must be explicit.)

Punishment Score

There can be a Punishment score only if the Aggression score is 6 or greater. The punishment is always for aggression in the story. If a character receives what seems to be punishment and there is no indication of previous aggression on his part, then what seems like punishment should be scored under *Hero Victim*. For example, the story: "They caught this man and hanged him," may seem like punishment, since being hanged is usually a form of punishment,

but since we do not know explicitly from the story that this man is being punished for an aggressive act, and since it is explicit that he is being aggressed against, we should put a score of 10 in the *Hero Victim* category.

- 0 No punishment of any kind.
- 2 Feelings of guilt, sorrow, depression, regret, or bad conscience. (Score only if explicit, as, e.g., "He feels sorry he did it," "He feels bad," etc.)
- 4 Nonphysical punishment from the environment: deprivation, rejection by others, loss of loved persons or objects.
- 6 Physical punishment: bodily harm, misfortune, caught by police, imprisonment.
- 8 Physical punishment resulting in death: execution, Suicide when it is self-punishment for an act of aggression. (Also scored under Suicide.)

Defenses

Defense is scored only when the Aggression score is 6 or greater. It represents a defense against aggression-anxiety. Defense is never scored unless one of the following is true in connection with the scored aggression. (The Defense score applies to Suicide as well as to Aggression.)

- a. Storyteller rejects an act of a figure; voices disapproval of it.
- b. Storyteller denies something. ("That couldn't be a gun." "She doesn't want to hurt her.")
- c. The aggressive activity is excused or rationalized. Aggression is put in a socially acceptable form (accident, self-defense, sports activity, warranted punishment, fighting or killing in war, police defending others, killing in the line of duty, etc.).
- d. The aggressive activity is a dream, thought, wish, fantasy, or plan of the story character, but it is not completed through action.
- e. The action is described as past or future. (This refers to the distant past or future; that is, the action does not take place within the time-span of the particular story.)
- f. The activity is qualified; maybe, perhaps, might be, probably, as if, doubt about the nature of the activity, or a nonaggressive alternative to the activity is suggested. ("This woman is either choking the other one or she's helping her because she's sick.")
- g. Noncompletion of aggression planned by the fantasy character. ("He goes out to kill this man, but then he changes his mind.")
- h. Displacement of aggression on to nonhuman objects. ("Man beats his dog." "Man kicks a chair, smashes a vase.")
- i. Cause of death is unknown, but it is not clearly due to natural causes. When there is

death in a story and it is not explicitly the result of aggression or of natural or accidental causes—in short, when there is no evidence in the story for inferring the cause of death—score Aggression 10 and Defense i. ("The man enters the room and finds a dead body on the floor.")

Other Variables

The following are scored simply on the basis of their presence in a story.

Natural Death. A character dies, or has just died, from presumably natural causes.

Suicide. A character takes his own life, or is in the act of doing so.

Tabooed Violence. Scored in addition to an Aggression score of 8, 9, or 10 when the aggression is especially brutal, bloody, gory, repulsive, primitive, or sadistic. Also, mutilation of the victim.

Sex. Heterosexual petting or intercourse. Petting is scored as Sex only if it involves physical contact with the breasts or genitalia or explicitly arouses sexual impulses.

Score Sex only if it is actually part of the story and not merely suggestive. The language used is not important.

Tabooed Sex. Tabooed Sex refers to any explicit sexual activity which does not come under the heading of Sex, i.e., any sexual activity other than heterosexual petting or intercourse. Examples that occur in these stories: homosexuality, incest, masturbation, bestiality, necrophilia, fellatio, cunnilingus, and other perversions. In the stories these technical terms are not used. It is assumed that the scorer knows the slang terms.

Tabooed Language. Most of the tabooed language is in reference to sex. Do not score mere swearing as Tabooed Language. Only words that are generally considered "dirty" are classed as taboo. Usually these are various synonyms for sexual intercourse, masturbation, sexual anatomy, and the like.

Relationships between the various TAT variables were determined by dichotomizing all distributions of scores for each variable as close to the median as possible and computing the contingency coefficient as the measure of relationship (Table 1).

Reliability of Scoring

The Ss' names were removed from the stories, which were given code numbers,

TABLE 1
CONTINGENCY COEFFICIENTS BETWEEN VARIABLES

Variable	1	2	3	4	5	6	7	8	9	10
1. Aggression.....44†	.34*	.25	-.12	.14	.33*	.22	.14	.16
2. Punishment.....05	.17	.17	.32*	.19	.17	-.08	.38†
3. Defense.....	-.27	.22	.21	-.11	-.12	.00	.17
4. Sex.....	-.35*	.38†	.37†	-.46†	.66†	.19
5. Natural Death.....05	-.16	-.12	-.24	.03
6. Suicide.....15	.00	.06	.04
7. Tabooed Violence....38†	.37†	.16
8. Tabooed Sex.....51†	-.19
9. Tabooed Language....09
10. Number of Words....

* Significant at or below the .05 level.

† Significant at or below the .01 level.

so that the experimenter did not know while scoring the stories to which group the Ss belonged. Another person, working independently without any knowledge of the purpose of the study or the nature of the Ss, scored all the odd-numbered protocols. The percentage of agreement in scoring the various TAT categories ranged from 86% to 99%; agreement for all categories combined was 95%.

RESULTS

Aggressive Fantasy Content

The distribution of Total Aggression Scores for the combined groups was dichotomized at the median and the significance of differences between the three groups of Ss was tested by means of the chi-square statistic. Only when the differences between all three groups reached the .05 level of significance were differences between pairs of groups tested for significance. (To facilitate direct comparisons of the frequencies in the three groups, all Ns in Tables 2, 3, and 4 have

been made directly comparable. In order not to create the distorted impression of large differences that would be given if percentages were used, these have been multiplied by .25, so that all frequencies in Tables 2, 3, and 4 may be viewed as if there were 25 Ss in each group. The chi squares were, of course, computed from the original frequencies.)

From Table 2-A it may be seen that both *Hypotheses 1* and *2* were not substantiated. The Aggressive-Bad and Passive groups did not differ significantly in total TAT Aggression. The Aggressive-Good group had significantly (.05 level) less TAT aggression than the Aggressive-Bad group, but did not differ significantly from the Passive group.

The relationships between the groups are essentially the same when comparisons are made of Aggression scores derived only from stories in which the Hero is the aggressor (Table 2-B).

Hypothesis 3 was not substantiated. The groups did not differ significantly in the proportion of stories containing Mild Aggression (scores 2-6) to stories containing Strong Aggression (score 8-10). Dichotomizing at the proportion of .30 maximizes the differences between the groups and yields the largest chi square of all possible dichotomies. Yet the differences between the groups did not attain significance (Table 2-C).

TABLE 2
AGGRESSIVE FANTASY CONTENT

TAT Variable	Cutting Point	Number of Subjects ^b			Chi Square	Chi Square ^a		
		Agg.-Bad	Agg.-Good	Passive		Agg.-Bad vs. Agg.-Good	Agg.-Bad vs. Passive	Agg.-Good vs. Passive
(A) Total Aggression Score	Above Median	16	7	14	6.82 ^f	4.42 ^f	.31	1.65
	Below Median	9	18	11				
(B) Hero Aggressor Score	Above Median	17	9	11	5.18			
	Below Median	8	16	14				
(C) Proportion of	Mild Agg. ^c	< .30 ^e	6	2	5.29			
	Strong Agg. ^d	> .29	3	10		5		
(D) Proportion of	Hero Victim	> .40 ^e	8	9	.26			
	Hero Aggressor	< .50	7	6		7		
(E) Suicide	1 or more stories	15	16	8	5.71			
	none	10	9	17				

^a With Yates' correction.

^b Though the *N*s of the three groups were actually 25, 22, and 27 respectively, they have here been "equalized" to an *N* of 25 in each group to facilitate direct comparisons. The chi squares are based on the actual *N*s.

^c Aggression scores 2-6.

^d Aggression scores 8-10.

^e This cut gives the largest chi square of all possible cuts.

^f $p < .05$.

Hypothesis 4 was not substantiated. The groups did not differ significantly in the proportion of stories in which the Hero was the victim of aggression to stories in which the Hero was the aggressor. Dichotomizing at the proportion of .50 yields the largest chi square of all possible dichotomies, yet it falls far short of significance (Table 2-D).

Hypothesis 5 was not substantiated. The groups did not differ significantly in the number of stories containing the theme of Suicide. Dichotomizing simply on the basis of presence or absence of Suicide in the entire set of 10 stories comes closest to dividing the distribution of Suicide scores at the median; no other dichotomy yields a larger chi square for these data (Table 2-E).

Hypothesis 6 was not substantiated. The three groups did not differ significantly in the proportion of Punishment relative to Aggression in their TAT stories (Table 3-A). When the groups are compared for themes of Punishment, not on a proportional basis, but on the basis of absolute number of Punishment themes in their stories, the differences between the groups are even smaller.

Hypothesis 7 was not substantiated. The three groups did not differ significantly in the proportion of Defense relative to Aggression in their TAT stories (Table 3-B).

Hypothesis 8. Since the findings with regard to Hypotheses 6 and 7, while not statistically significant, were in the predicted direction, and

since both Punishment and Defense are psychologically similar in that they may be interpreted as indicative of the *S*'s disapproval of his aggressive fantasy, Punishment and Defense were regarded as equivalent in Hypothesis 8. It may be argued that if an *S* uses one means of "disapproving" his aggressive fantasy, he need not use another means in the same story. The groups were therefore compared on the basis of the proportion of *either* Punishment *or* Defense relative to aggression. Themes of aggression in which there is neither Punishment nor Defense may be called "raw" or unmodified aggressive fantasy. When the distribution of raw Aggression scores is dichotomized as near the median as possible, it is seen that the groups differ significantly (Table 3-C). The Aggressive-Bad group had more raw aggression in their stories than either the Aggressive-Good or Passive groups, which did not differ significantly from each other. Thus, *Hypothesis 8* was substantiated.

Hypothesis 9 was only partially substantiated. The Aggressive-Good group had significantly more themes of Natural Death than either the Aggressive-Bad or Passive groups, which did not differ significantly from each other (Table 3-D).

Behavior-Sample Aspects

Hypothesis 10 was amply substantiated. All the behavior-sample variables discriminated between the groups at the .01 to .001 level of significance (Table 4).

TABLE 3
MODIFIERS OF AGGRESSIVE FANTASY

TAT Variable	Modifier	Number of Subjects ^b			Chi Square	Chi Square ^a		
		Agg.-Bad	Agg.-Good	Passive		Agg.-Bad vs. Agg.-Good	Agg.-Bad vs. Passive	Agg.-Good vs. Passive
(A) Aggression ^c	With Punishment ^e	9	12	7	2.05			
	No Punishment	15	11	16				
(B) Aggression ^c	With Defense ^e	13	16	18	2.64			
	No Defense	11	8	6				
(C) Aggression ^d	With Punishment or Defense ^f	4	15	12	10.14 ^h	7.43 ^h	4.54 ^h	.22
	No Punishment or Defense	16	7	9				
(D) Natural Death	Present ^e	6	17	8	10.44 ^h	7.54 ^h	.72	4.58 ^h
	None	19	8	17				

^a With Yates' correction.

^b See footnote b in Table 2.

^c Based only on Ss having one or more stories containing Aggression, thus comparing the groups on the basis of the proportion of Punishment relative to Aggression.

^d Based only on Ss having two or more stories containing Aggression, thus comparing the groups on the basis of the proportion of Punishment or Defense relative to Aggression.

^e In one or more stories.

^f In two or more stories.

^g $p < .05$.

^h $p < .01$.

Because of the markedly skewed distribution of scores on each of these variables, the group comparisons were made on the basis of the number of Ss in each group having a given number of stories containing the particular TAT variable. In some cases a true picture of the differences between the groups is obtained only when the distribution of scores is dichotomized at more than one point. This was the case with Sex and Tabooed Sex.

On every variable in Table 4 the Aggressive-Bad group was significantly ahead of the Aggressive-Good and Passive groups, which did not differ significantly from each other. The one partial exception to this, shown in Table 4-A, is Sex in one or more stories. Here the Aggressive-Bad and Aggressive-Good groups did not differ significantly from each other, but both differed significantly (.01 to .001 level) from the Passive group, which had very few themes of Sex. However, when the groups are compared on the basis of the number of Ss having two or more stories containing Sex themes, the Aggressive-Bad group is far in the lead, while the Aggressive-Good and Passive groups do not differ significantly. The reason for this becomes obvious when the groups are compared on the individual TAT cards. The Passive Ss, apparently afraid of doing anything that they think might incur

disapproval, did not respond with sexual themes even to Card 13MF, which usually elicits sexual themes. Indeed, sexual themes may be regarded as appropriate for this picture of a man standing beside a half-nude woman lying on a bed. The majority of sexual themes in the Aggressive-Good group were given to this picture. The Aggressive-Bad group, on the other hand, not only produced more stories with Sex, but distributed the sexual themes through all ten stories. Therefore, the result shown in Table 4-A for two or more stories is in effect what would be obtained by removing Card 13MF from the series. From this it may be concluded that the presence of sexual themes in stories produced in response to pictures not directly suggestive of sexual themes is associated with socially unacceptable overt aggression. The absence of sexual themes in stories produced in response to sexually suggestive pictures is associated with the Passive type of overt behavior.

Table 4-B, C, D, E shows the marked differences between the groups on the tabooed themes, the Aggressive-Bad group always far in the lead, with the Aggressive-Good and Passive groups showing no significant differences between them. Tabooed material in TAT stories is clearly associated with socially unacceptable overt aggressive behavior.

DISCUSSION AND CONCLUSIONS

Responses to a projective test may be thought of as consisting essentially of

TABLE 4
BEHAVIOR-SAMPLE ASPECTS

TAT Variable	Number of Stories	Number of Subjects ^a			Chi Square	Chi Square ^d		
		Agg.-Bad	Agg.-Good	Passive		Agg.-Bad vs. Agg.-Good	Agg.-Bad vs. Passive	Agg.-Good vs. Passive
(A) Sex	1 or more	19	17	6	15.23 ^c	.07	11.09 ^c	7.13 ^b
	none	6	8	19				
	2 or more	14	6	4	11.21 ^b	4.09 ^a	7.99 ^a	.12
	1 or none	11	19	21				
(B) Tabooed Sex	1 or more	7	2	2	5.22			
	none	18	23	23				
	2 or more	7	0	0	14.92 ^c	10.38 ^b	6.50 ^a	.00
	1 or none	18	25	25				
(C) Tabooed Language	1 or more	9	1	3	9.18 ^b	5.16 ^a	3.24	.09
	none	16	24	22				
(D) Tabooed Violence	1 or more	10	0	0	22.41 ^c	8.92 ^b	10.92 ^c	.00
	none	15	25	25				
(E) Combined Taboo (B, C, D)	1 or more	13	3	3	13.81 ^c	6.06 ^a	8.36 ^b	.03
	none	12	22	22				

^a $p < .05$.

^b $p < .01$.

^c $p < .001$.

^d With Yates' correction.

^e See footnote b in Table 2.

two kinds of elements: those which are fantasy projections of inner tensions (drive states or conflicts), and those which are samples of the person's behavior. These two elements may be referred to respectively as the "projective" and the "behavior- (or trait-) sample" aspects of the test response. The thematic content of TAT stories carries the largest portion of the projective element, while the so-called formal aspects (*S*'s approach, language, style, perceptual and cognitive use of the stimulus, attitudes toward the task, etc.) represent the behavior- or trait-sampling element.

The results of this study do not support the projective hypothesis that *n* Aggression in TAT fantasy is related to overt aggressiveness as a general disposition or trait. There appeared to be neither a direct nor an inverse relationship between fantasy aggression and overt behavior. As pointed out previously, the direct-relationship hypothesis has found support only in studies dealing with temporary affective states or drive states (3, 6, 12, 16, 17). Thus the TAT, as re-

gards its fantasy element, seems to be more a test of the *S*'s current mood and situational attitude, and possibly also of certain persistent underlying conflicts or needs, rather than a test of overt personality.

The "dynamic hypothesis" is based on the idea that overt behavior is a resultant of a balance of inner forces and that inferences about overt behavior from fantasy content must take into account not only the various drives or "needs" and "presses" represented in fantasy, but also their interaction with each other. Thus the degree of overt aggressiveness may be viewed as a resultant of an aggressive impulse and the anxiety that opposes aggression. The balance of these forces should, according to the dynamic hypothesis, provide the best indicator of the degree of overt aggression.

This hypothesis found some support in the present study, as it has in others (14, 15). An absence of punishment or of defense against aggression anxiety seems to be associated with socially unacceptable overt aggression. The presence of natural death in the stories also seems to serve a defensive purpose and is positively correlated with socially acceptable overt aggressiveness.

The behavior-sample hypothesis requires that evidence of the *S*'s behavioral traits be sought in his test performance. The *S*'s response to the

test situation is regarded as a sample of his mode of responding to other tasks and interpersonal relationships. Examples of this in the clinical use of the TAT (and Rorschach) are the noting of signs of confusion, bizarre verbalizations, perceptual distortions, etc. as signs of schizophrenia; hesitancy, indecision, blocking, etc. as signs of anxiety or obsessiveness; and so on. These are samples of the S's behavior.

It was hypothesized in this study that the Aggressive-Bad Ss would include in their TAT stories defiant, antisocial, or "shocking" elements characteristic of their contempt for school-behavior propriety, and would manifest their lack of inhibition about expressing themselves in socially disapproved ways by giving freer expression to any socially tabooed themes that the pictures might suggest, however remotely. The evidence strongly supported this hypothesis. On each of the "tabooed" themes (Sex, Tabooed Sex, Tabooed Language, Tabooed Violence) the Aggressive-Bad group was far in the lead. This certainly cannot be interpreted as representing gross differences in the strength of the sex drive (*n* Sex) in the three groups. The differences between the groups were consistent in direction on all pictures for all the tabooed variables. This was not the case with any of the other variables in the study. Whereas certain pictures elicited a particular kind of thematic content more than others, the behavior-sample variables, such as Tabooed Language, were elicited about equally by all the pictures.

The obvious conclusion is that the behavior-sample elements of the TAT response, when elicited under the testing conditions described in this study, are much more highly related to overt behavior than the projective or thematic elements. The reason is simple: the formal and trait-sample elements *are* the overt behavior. An analysis of the TAT stories from the behavior-sample point of view reveals more about the S's overt personality than an analysis of the thematic content *per se*.

It is of course impossible to say with confidence what the results of this study would be if the Ss were girls, or were of a different age group, or were institutionalized delinquents, or mental patients. Also the method of administering the TAT was undoubtedly of significance in the results. The number of sex and tabooed themes would have been much fewer, if they would have been expressed at all, had the test been individually administered. When the Symonds Picture-Story Test (which originally included a picture of two nudes of opposite sex standing face-to-face) was administered individually to 20 high school boys, they gave no responses containing tabooed sex or tabooed language (19).

It should be pointed out that the three experimental groups were not conceived of as lying along a *single* continuum with respect to overt aggression. The main requirement was that the three groups differ markedly with respect to overt aggressive behavior. This was achieved. At least two dimensions would probably be required to account for the behavioral differences among the groups. In retrospect one might hypothesize as the two dimensions: "conformity-nonconformity" and "activity-passivity." The Aggressive-Bad Ss might be characterized as "actively nonconformist," the Aggressive-Good Ss as "actively conformist," the Passive Ss as "passively conformist."

Another point: the selection of the 10 TAT pictures could possibly affect the outcome of such an experiment. The fact that the various TAT cards have different stimulus values is well-known. Certain pictures elicit more of a particular theme than do others. A full presentation of the data of this study (9) clearly reveals that, in addition to this fact, the *proportions* in which certain themes are elicited by various pictures are not the same for different types of Ss. For example, Card 17GF elicited the most fantasy aggression from the Passive group and the least from the Aggressive-Bad group, while Card 20 was just the reverse. The implication would seem to be that the same variable may carry a different weight when elicited by one picture than by another. Aggression elicited by Card 17GF was *negatively* correlated with overt aggressiveness, while aggression elicited by Card 20 was *positively* correlated with overt aggressiveness. Future research might apply an "item analysis" technique to the TAT, treating the individual cards as items and correlating the themes elicited by each one with various personality characteristics. It is not improbable that such an approach to TAT analysis could have greater predictive value than the more global or additive approaches, in which the differential stimulus values of the various pictures are not so systematically taken into account.

Finally, an observation that is made too seldom in studies such as this, is the fact that, even though we were here dealing with groups differing in the extreme, the TAT variables discriminated very poorly for practical purposes. The statistically significant discriminations must be regarded as of only theoretical interest. Using any combination of these statistically significant variables for predictive purposes, even with extreme

groups, would obviously result in a very large percentage of errors, as may be seen from Tables 2, 3, and 4. That the TAT can be used for individual prediction of overt behavior is thus seriously questioned by these results, especially as regards the use of fantasy "needs" and "presses." Somewhat more confidence may be had in behavioral predictions from the TAT when the S's performance is interpreted as a behavior-sample.

SUMMARY

The relationship of Thematic Apperception Test responses to overt behavior was investigated with respect to aggression. The central question was: How is behavioral aggressiveness reflected in the TAT? The major hypotheses were: (a) There is a direct relationship between aggression in TAT fantasy and in overt behavior. (b) There is an inverse relationship between the amount of fantasied punishment, relative to fantasied aggression, and overt aggressive behavior. (c) There is an inverse relationship between the amount of defense against aggression anxiety in the fantasy and overt aggressive behavior. (d) There is a direct relationship between those aspects of the TAT response which may be viewed as behavior-samples and overt behavior in social situations. With respect to socially disapproved overt aggressiveness, the TAT responses would be expected to evince samples of socially disapproved, tabooed, or defiant behavior.

The method of the study was to permit whatever relationships that might exist between the TAT and the behavioral variables the maximum opportunity for manifesting themselves, by comparing relatively homogeneous groups of Ss differing widely in their overt behavior with respect to aggressiveness. From an

all-boy high school three groups of Ss were selected by means of teacher ratings: (a) 25 who were aggressive in socially unacceptable ways (Aggressive-Bad); (b) 22 who were aggressive in socially acceptable ways (Aggressive-Good); (c) 27 who showed no overt aggressiveness (Passive). The Ss wrote stories to 10 TAT cards selected for their tendency to elicit themes of aggression. The stories were scored on the following variables: Aggression (Hero Aggressor, Hero Victim, Indeterminate), Punishment, Defense (against aggression anxiety), Suicide, Natural Death, Sex, Tabooed Sex, Tabooed Violence, and Tabooed Language. Interrater agreement was determined and found to be high (95%).

The "direct relationship" hypothesis was not substantiated. The Aggressive-Bad and Passive Ss had about the same amount of aggression in their TAT fantasies. The Aggressive-Good group had even less fantasy aggression than the Passive group. The groups did not differ in the proportion of aggressive stories in which the Hero was the aggressor or the victim of the aggression. Nor did the groups differ in the amount of mild or socially acceptable forms of aggression in their stories.

The three groups differed at the .01 level of significance in the proportion of aggressive stories which contained neither Punishment nor Defense. The Aggressive-Bad group had a greater proportion of such unmodified or "raw" aggression.

The theme Natural Death was hypothesized as being a defense against aggression anxiety, representing an aggressive wish in disguise. The Aggressive-Good group had significantly more Natural Death in their stories than the other groups.

The groups did not differ significantly in the number of Suicide themes.

The behavior-sample aspects of the TAT stories showed highly significant differences between the groups. All the differences on the following variables were significant at the .01 to .001 level of confidence, with the Aggressive-Bad group far in the lead and the Aggressive-Good and Passive differing from each other hardly at all: Sex, Tabooed Sex, Tabooed Language, and Tabooed Violence. This relationship held up for these variables on all ten TAT pictures; this was not the case with any of the other variables in the study.

The following general conclusions

were drawn: (a) There was very little, if any, relationship between aggression in fantasy and in overt behavior. (a) The absence of themes of punishment and of defenses against aggression anxiety in the TAT was associated with socially unacceptable forms of overt aggression. (c) Aspects of the TAT responses which were regarded as behavior samples were related to overt aggressive behavior at a high level of significance. Ss who habitually acted-out aggressively in ways regarded as taboo in the school setting responded also to the TAT with socially tabooed content and language.

REFERENCES

1. ATKINSON, J. W., & MCCLELLAND, D. C. The projective expression of needs: II. The effect of different intensities of the hunger drive on thematic apperception. *J. exp. Psychol.*, 1948, **38**, 643-658.
2. BALKEN, E. R., & MASSERMAN, J. H. The language of fantasy: III. The language of the fantasies of patients with conversion hysteria, anxiety state, and obsessive-compulsive neurosis. *J. Psychol.*, 1940, **10**, 75-86.
3. BELLAK, L. The concept of projection: an experimental investigation and study of the concept. *Psychiatry*, 1944, **7**, 353-370.
4. CLARK, R. A. The projective measurement of experimentally induced levels of sexual motivation. *J. exp. Psychol.*, 1952, **44**, 391-399.
5. COHEN, A. K. *Delinquent boys: The culture of the gang*. Glencoe, Ill.: The Free Press, 1955.
6. FESHBACH, S. The drive-reducing function of fantasy behavior. *J. abnorm. soc. Psychol.*, 1953, **50**, 3-11.
7. GLUCK, M. R. The relationship between hostility in the TAT and behavioral hostility. *J. proj. Tech.*, 1955, **19**, 21-26.
8. HARTMAN, A. A. An experimental examination of the thematic apperception technique in clinical diagnosis. *Psychol. Monogr.*, 1949, **63**, No. 8 (Whole No. 303).
9. JENSEN, A. R. Aggression in fantasy and overt behavior. Unpublished doctoral dissertation, Teachers College, Columbia Univer., 1956.
10. KORNER, ANNELESE F. Theoretical considerations concerning the scope and limitations of projective techniques. *J. abnorm. soc. Psychol.*, 1950, **45**, 619-627.
11. LINDZEY, G. An experimental examination of the scapegoat theory of prejudice. *J. abnorm. soc. Psychol.*, 1950, **45**, 296-309.
12. MCCLELLAND, D. C., ATKINSON, J. W., CLARK, R. A., & LOWELL, E. L. *The achievement motive*. New York: Appleton-Century-Crofts, 1953.
13. MURRAY, H. A. *Thematic Apperception Test manual*. Cambridge: Harvard Univer. Press, 1943.
14. MUSSEN, P. H., & NAYLOR, H. K. The relationship between overt and fantasy aggression. *J. abnorm. soc. Psychol.*, 1954, **49**, 235-240.
15. PITTLUCK, PATRICIA. The relation between aggressive fantasy and overt behavior. Unpublished doctoral dissertation, Yale Univer., 1950.
16. SANFORD, R. N. The effects of abstinence from food upon imaginal processes: a preliminary experiment. *J. Psychol.*, 1936, **2**, 129-136.
17. SANFORD, R. N. The effects of abstinence from food upon imaginal processes: a further experiment. *J. Psychol.*, 1937, **3**, 145-159.
18. SANFORD, R. N., ADKINS, M. M., MILLER, R. B., COBB, E. A., & others. Physique, personality and scholarship: a cooperative study of school children. *Monogr. Soc. Res. Child Developm.*, 1943, **8**, No. 1 (Serial No. 34).
19. SYMONDS, P. M. *Adolescent fantasy: an investigation of the picture story method of personality study*. New York: Columbia Univer. Press, 1949.

(Accepted for publication March 11, 1957)