

THE THEMATIC APPERCEPTION TEST: THE RELATIONSHIP BETWEEN
SCORED FANTASY AGGRESSION AND AGGRESSIVE BEHAVIOR

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Thesis Prepared for the Degree of

MASTER OF ARTS

UNIVERSITY OF NORTH TEXAS

December 2000

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Fabrick, Joanne Madeline, The Thematic Apperception Test: The relationship between scored fantasy aggression and aggressive behavior. Master of Arts (Counseling Psychology), December 2000. 61 pp., 10 tables, 31 references.

This study attempted to determine the relationship between fantasy aggression and behavioral aggression, and whether fantasy aggression measured by the Thematic Apperception Test is related to behavioral aggression. Participant TAT protocols from psychology clinic files were scored for fantasy aggression, and these scores were correlated with self-reported presence or absence of behavioral aggression. The scoring system used was a blend of popular aggression scales used in the 1960s and newer theory. Other variables that were examined were story length and gender in relation to the measured amount of fantasy and behavioral aggression.

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ACKNOWLEDGMENTS

I would like to acknowledge the work of the clinic research team in collecting and preparing the archival data used in this study. Joe Davis, Kitty Roberts, Amy Butterfield, Shaneka Morris, Amanda Phillips, Lisa Black, and Veronica Navarette-Vivero put forth time and energy to make this information accessible for research.

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CHAPTER 1

THE THEMATIC APPERCEPTION TEST: THE RELATIONSHIP BETWEEN SCORED FANTASY AGGRESSION AND AGGRESSIVE BEHAVIOR

After a surge of interest in using the Thematic Apperception Test (TAT) to measure hostility during the late fifties to early seventies, research on the TAT and aggression and hostility was abandoned in favor of studies of object relations. Previous results using the TAT to measure hostility are inconsistent. Some studies found significant correlations between scored aggression in the TAT and behavioral aggression, and some did not. Furthermore, the significant correlations in different studies differ in the direction of their correlations. This study will evaluate an aggression scale for the TAT and how it differentiates between aggressive and non-aggressive subjects, as well as examine the relationship between fantasy aggression and behavioral aggression.

The Thematic Apperception Test

The Thematic Apperception Test is a narrative method; the subject tells a story when given a series of picture stimuli. Thus, the test protocol becomes the narrative of the storyteller, or the participant. It expresses their construction of reality, and the examiner interprets this meaning (Cramer, 1996). The use of a standardized scoring system for the TAT provides scientifically objective and reliable quantitative data. The purpose of this study is to use a scoring system for aggression to gather such data in order to further understanding of the relationship between fantasy and behavior, specifically

involving aggression.

Aggression

Historically, different theorists and researchers have focused on different aspects of the construct of aggression, some narrow, some broad. Psychologists often focus on the motivations behind aggression, as well as the consequences of aggressive acts. Projective instruments such as the TAT are often used to look at obvious versus subtle levels of aggression; to look beyond what the person is willing, or able, to reveal. This study will focus on the relationship between the aggression found in the TAT and behavioral aggression, and the role the TAT can play in assessing aggression.

The TAT is a means of gathering data that have multiple uses; scores are obtained from the measurement system used to quantify the data. The specific categories chosen for the present scoring system were selected because of their prior success in identifying aggression and their varied content. The array of categories is hopefully broad enough to accurately identify the ambiguous construct of aggression.

Siann (1985) described behavioral aggression as the intention to hurt or emerge superior to others, but stated that it does not necessarily involve physical injury and may or may not be regarded as being underpinned by different kinds of motives. Aggression may be a state or trait, depending on the theory and the individual. As such, aggression is not always negatively socially sanctioned, but it is more likely to be so when one of the participants does not enter willingly into the interaction. Applying the label “aggressive” in a pejorative manner to a person or persons is a matter of subjective judgment on the part of the labeler. Violence involves the use of great physical force or intensity and may

be impelled by aggression (Siann, 1985). For the purposes of this study, aggression was defined behaviorally as forceful, negative verbal or physical behavior. Although important, the issues of trait versus state, levels of aggression as overt and covert, and personality will not be specifically controlled or defined in this study, although they are discussed.

When someone is unwilling or unable to control his or her aggression towards others it may become a way of life and cause difficulties for that person. This reflects both aggression and difficulties in control. It is likely that aggression has many different aspects, and control may be one of them. Although not all aggression is negative, such as protecting oneself from an assailant, people who are generally and overly aggressive may have difficulty interacting satisfactorily with society. The way these people relate to others and interact should differ from non-aggression prone persons. The way they solve problems and view difficulties may be impaired, depending on the severity of their aggression. These differences may be apparent when a projective measure such as the Thematic Apperception Test is given.

Many attempts to measure aggression have been made, with varying success. It is likely that behavioral aggression is an outcome of the combination of many personality factors, such as control, impulsivity, frustration tolerance, problem solving, and self-esteem. The level or amount of fantasy aggression may or may not be indicative of the cumulative effects of these variables whose product may be behavioral aggression. The conflicting results of previous studies (Dhapola, 1971) may be a result of tapping into different aspects of aggression unevenly and not recognizing the measurement of control

and frustration tolerance as aspects of aggressive behavior.

Conflicting results from multiple studies suggest that the nature of the relationship between fantasy aggression and behavioral aggression is not well understood. The measurement of fantasy aggression as a predictor of behavioral aggression may be the clearest, most visible, information clinicians can attain beyond background information. The evaluation of the quality and setting of fantasy aggression may further increase understanding of its relationship with behavior.

Aggression in Fantasy

One school of thought is that more aggressive or violent people will have more aggression and violence in their fantasies (Hafner & Kaplan, 1960; Stone, 1956).

Another opposed theory is that the presence of fantasy aggression is a healthy outlet for aggression that precludes behavioral aggression (Meloy & Gacono, 1982). The hostility scoring systems by Stone (1956) and by Hafner and Kaplan (1960) assume that fantasy aggression should be positively correlated with behavioral aggression or violence.

McAdams (1982) provided objective evidence that the motivational themes seen in TAT stories are reflected in the life of the person telling the story, that their fantasy as seen in the TAT was a mirror of their behavior. However, this data was correlational and did not encompass themes of aggression and violence (Cramer, 1996). It has also been theorized that fantasizing about possible future events can lead to emotions such as anxiety, anger, and rage and this can lead to behavioral expressions of those emotions, such as aggression (Dubin, 1989).

More recent work has suggested that fantasy aggression, as seen in operant

measures such as the TAT or Rorschach, allows for the healthy expression of aggression. A person who can fantasize effectively about aggression need not act it out and will not be seen as aggressive (Meloy & Gacono 1993). Goldwater (1994) theorized that aggressive behavior is linked to impulsivity and an inability to fantasize effectively in order to control impulses. This theory suggests that fantasy is a necessary component of control and far from being indicative of aggression, it prevents or controls it.

There is clearly a conflict in the field concerning the role of aggression in fantasy. The value of the TAT in assessing aggression, both overt and covert, may depend on the clear presence or absence of violent fantasy, or the evaluation of the amount of aggression on a continuum, if a criterion-keyed strategy is not developed. What is not clear is whether violent subjects will produce violent fantasy on a consistent, and therefore predictive, basis. What does the expression of aggression in fantasy signify, and how consistent is it across different populations?

Expression of Aggression in Fantasy

Teglasi (1993) suggested that if behavior is multiply determined, then thematic content as a sample of behavior is also multiply determined. Aggression is not fueled by only one source, so, logically, it has more than one outcome or expression. Because aggressive activity is generally not socially sanctioned, its direct expression in the TAT is likely to be inhibited. People taking the TAT, whether under research conditions, court-ordered, or through their own treatment, understand that they are being examined and what they say will be analyzed.

When aggressive expression is inconsistent with the self-concept, inhibition

during storytelling can occur in fantasy in many ways. First, avoidance of hostile content, even in cards with a high stimulus pull for aggression, is a blatant avoidance of the subject of aggression. Second, putting the hostile or aggressive act into a socially acceptable context, such as acting under the influence of guilt or inflicting a deserved punishment is a way of inhibiting aggression in the fantasy. It is giving the aggression an excuse or reason. Third, the storyteller can distance the action from the character by using a special circumstance or by describing people as removed from time and place. This distances the characters, and perhaps the storyteller, from the aggression. It may feel like a “safer” form of aggression because it is not immediate or close. Finally, the storytellers distance the story from themselves by describing the characters as unacceptable or unsavory. This is another excuse for the aggression, because the characters are “supposed” to act in that way, it is their nature (Teglasi, 1993).

However, the mitigating circumstances of aggression should also be noted. An explanation for violence, such as drunkenness or extreme provocation, suggests that the violence is not socially sanctioned under ordinary circumstances, and that the storyteller is aware of that fact. Creating a remote atmosphere for the violence suggests that the behavior does not occur under everyday circumstances. Further, aspects in stories that suggest satisfaction in work, relationships, and goals reflect barriers to aggressive acts that are used for short-term gain (Teglasi, 1993).

The likelihood of aggression and hostility expressed in fantasy in response to the stimulus of the TAT may be influenced by how congruent the aggression is with the subject’s self-concept. When the storyteller reports behavioral aggression, the aggression

is congruent enough with the person's self-concept that the level of fantasy aggression is less likely to be inhibited. When behavioral aggression is denied, it is more likely to be incongruous and thus be suppressed (Teglasi, 1993).

O'Gorman and Stair (1977) used perception of hostility in the TAT to measure defensive style and anxiety. In their discussion, they propose that failures to respond to aggressive content in cards with aggressive pull may be a sign of anxiety about the stimulus, about aggression or an attempt to deny aggression, as opposed to a generalized behavior, such as anxiety about the testing or life in general. They postulate that "stimulus pull" interacts with personality type and cannot be considered constant over individuals. It does seem likely that stimuli interact with personality. It is always important when assessing differences between individuals to note when the individual differs from a large group. What is true for one individual may not be true for another. This is both the difficulty and delight of using the TAT. At this time, it is not clear what it means when someone does not respond in fantasy to aggressive stimuli, such as a rifle. It may be anxiety about testing and lack of careful reflection on the part of the participant. However, it also may be indicative of a conflict about aggression. What that conflict means is determined by examining the individual. A question that needs to be answered is whether denial of aggression in fantasy is indicative of likely behavioral aggression or whether it is indicative of the lack of behavioral aggression.

Assessment accuracy is highest when there is a relationship between the predictor, in this case the TAT scores, and the behavioral criterion, which in this case is aggression. Hostility, or aggression, can be expressed in both covert and overt levels of fantasy and

behavior, and these levels may be inversely related to thematic expression. It is possible that only the overt level is being expressed in fantasy or behaviorally, which leaves covert levels of aggression unaccounted for. This may explain the difficulty in assessing aggression in general.

Further, subject groups that are defined by varying characteristics may represent different aspects of hostility and aggression. An accurate assessment tool must be matched to the subject group whose aggression is being predicted (Teglasi, 1993). For example, studies using violent prison inmates often have a higher correlation than the studies that used juvenile offenders (Hafner & Kaplan, 1960; Stone, 1956). It may be that the measure must address the facet of aggression or hostility exhibited by the particular group, and that a generalized definition of aggression will not yield satisfactory results. While it is possible that aggression is too complex for a single scoring system to address all of its dimensions, the measurement of fantasy aggression is a clear starting point.

Quality of Fantasy Aggression

The actual quality of the fantasy aggression is important to consider. Some research has indicated that men fantasize about sexual aggression whether they act out that behavior or not. However, qualitative differences in the fantasies, such as empathy and sensitivity, are found between the fantasies of sexual aggressors and non-aggressors (Dean & Malamuth, 1997). The intensity and type of aggression are important aspects of the aggression construct. Aggressive themes that are gruesome or sadistic may be more likely to be predictive than those that refer to less extreme examples of interpersonal violence.

Stories with severely violent and sadistic content can suggest two things. First, that the storyteller is not attempting to control, or is unable to control, the content of the story. They are aware that they are being evaluated and the content is still not filtered. Second, that they are capable of imagining, and relating in a meaningful way, severe acts of violence and aggression. On the opposite end of the aggression continuum is the story with low aggression or violence. This is indicative of control over the aggressive thoughts, or an inability, or unwillingness, to engage in and/or verbalize those thoughts.

Predicting Aggression with the Rorschach

Meloy and Gacono (1992) have theorized that variables scored from Rorschach protocols can be used to accurately assess aggression. Their theory involves subtle understanding of the relationship between fantasy and behavioral aggression and the sensitivity of an operant measure (McClelland, 1980), such as the Rorschach, to pick up that relationship. An earlier study had shown difficulty with correlating Rorschach aggression scales with behavioral aggression (Davids, 1966). A later study showed low correlation between Rorschach aggression variables and behavioral aggression (Kalliopuska, 1992). However, these studies looked at different variables in the Rorschach than did Meloy and Gacono.

Exner (1986) defined aggression in the Rorschach Comprehensive System as any movement response in which the action is clearly aggressive and is occurring in the present. This would include people or animals actively destroying another being or object. The aggression must be currently taking place in order to be scored as aggressive on the Rorschach Structural Summary. Meloy and Gacono expanded that definition,

stating that other indications of aggression may be more useful in identifying someone as aggressive. Their categories include Aggressive Content, Aggressive Potential, Aggressive Past, and Sado-masochism. Aggressive content is any content that is commonly perceived as predatory, dangerous, malevolent, or harmful. For example, a black widow spider is dangerous and would be scored as Aggressive Content. Aggressive Potential identifies an aggression that is about to occur. Aggressive past identifies an aggressive act that has already occurred. Sado-masochism identifies pleasurable affect expressed by the respondent accompanied by a morbid or aggressive response.

Meloy and Gacono proposed that looking at the amount of aggression shown in the protocol wasn't sufficient, that the quality of the aggression and its temporal value must be taken into account. They have shown that the ability to express present aggression, aggression that is currently occurring, can be negatively correlated with behavioral aggression. Descriptions of past or future aggression and hostile or threatening themes or objects along with variables such as narcissism and quality of information synthesis, may be more likely to be positively correlated with behavioral aggression.

Correlations between Rorschach and TAT. Several studies have compared Rorschach aggression scales and variables with TAT aggression scales (Davids, 1973; Hafner & Kaplan, 1960; Kalliopuska, 1992). These studies found little correlation between the results of the Rorschach and TAT aggression scales. It was generally agreed that the two operant measures were tapping into different aspects of aggression and different levels of overt and covert aggression. While this might suggest that Meloy and

Gacono's work may have no bearing on the TAT, it is important to consider that none of the Rorschach or TAT scales used in these studies took potential or past aggression into account. Just as Meloy and Gacono's theory has more assessment accuracy for aggression using the Rorschach, applying that theory to the TAT may increase its assessment accuracy and that possibility should be tested.

Nature of measurement. Projective, or operant (McClelland, 1980), measures consist of the scoring system used to quantify their responses, and the TAT is no exception. While an objective, or respondent, measure provides structure in the testing process, which ensures structured information for the tester, it also limits the amount and quality of information that a person can relate. The subsequent ease of interpretation limits the ultimate usefulness of the test because the person being tested is not free to respond to the full range of their ability or inclinations. An operant measure opens up that opportunity and allows them to organize their responses in a way more representative of their usual behavior.

The consequence for obtaining this clear snapshot of unique behavior is obtaining less standardized information that is more complex to interpret. In respondent measures, it is up to the test developers to structure the information in advance so that the test-giver does not have to. With operant measures, the test-giver must struggle to make sense of the information given and impose structure on these responses using a standardized scoring system. Thus, the means of evaluating responses and assigning scores is extremely important. The quality of the measure must be considered, as well as how it applies to the unique individual. The amount of clinical judgment involved is sometimes

higher with an operant measure, and while that may permit more variance between clinicians, even with standardized scoring systems, it provides the person being tested with a more “custom” fit. Unlike respondent measures, operant measures are reflect a continuum of behavior because responses are structured by the test-taker, not by the test developer. The structure of respondent measures limits the amount and quality of information the person can give, in essence choosing the points along the continuum that the person can be placed (Holt, 1992; McClelland, 1980).

Aggression/ Hostility Scoring Systems

Two popular aggression and hostility scoring systems for the TAT were those developed by Stone (1956) and by Hafner and Kaplan (1960). Lindzey and Tejessy (1956) also published a scoring system that showed relatively strong correlations with self-report aggression as well as behavioral aggression, although their scoring system does not appear to have been widely used. Stone (1956) introduced the TAT Aggressive Content Scale. Its purpose is to objectively score hostile-aggressive responses on the TAT. Each aggressive response is categorized as having content in one of three areas: death, physical aggression, and verbal aggression. These are given 3, 2, and 1 point respectively for each occurrence. In addition to these points, each aggressive response was rated as active or “potential,” occurring in the future. If the response is rated as potential, the point score it would be given is halved.

Hafner and Kaplan (1960) published their scoring system for the TAT and Rorschach, the Hostility Content Analysis for the Rorschach and TAT. In determining a scoring system for hostility for the TAT, they reported that previous studies had been

criticized for the seemingly “arbitrary” weight assignments of various types of hostile content. Hafner and Kaplan designed their scale to reflect a continuum. Themes involving overt aggression between people or towards the self were given 4 points. Themes involving hate or thoughts of aggression towards people or animals were given 3 points. Themes involving verbal aggression, negative emotions, rejections, predatory animals, or destructive forces of nature were given 2 points. Themes involving emotional deprivation, guilt, escape, misfortune, death symbols, broken objects, or the military were given 1 point. Themes without aggressive or hostile content were given no point value.

Lindzey and Tejessy (1956) selected 9 categories for scoring on their aggression scoring system. These included avoidance of gun, aggressive turns, death as a result of external forces, violence, death or failure in non-heroes, misrecognition, strong aggressive fantasies, forceful language, constructive outcome, and constructive character. Of these items, avoidance of gun, aggressive turns, death or failure in non-heroes, and strong aggressive fantasies had the highest positive correlations with both self-report ratings of aggression and observed ratings of behavioral aggression.

Both the Stone and Hafner and Kaplan scoring systems were tested and found to have positive correlations with aggressive behavior, although the correlations were not high. These systems have been used in multiple other studies (Davids, 1973; Kalliopuska, 1992; Matranga, 1976; Megargee & Cook, 1967) with conflicting results. Some studies found positive correlations between the TAT aggression/hostility score and behavioral aggression (Davids, 1973) and one (Matranga, 1976) reported a negative correlation between the TAT aggression scores and behavioral aggression. Megargee and

Cook (1967) reported a negative correlation between the aggression scoring system and observed aggression, but a positive correlation between the system and self-report aggression.

There may be some fundamental flaws with both of these scoring systems. The Stone system may be overly simplistic, with range of point between 1 and 3 given, and no credit given for hostile or negative environments or factors, such as weapons or hostile animals. The attention given to potential versus current aggression is a positive factor of the scale, but the weight may go the wrong way. In regards to the theory of Meloy and Gacono (1992), it may be necessary to increase the point value of potential acts, instead of decreasing them. While somewhat counter-intuitive, describing a potential aggressive act in fantasy may be more indicative of an inability to suppress aggression behaviorally and may make the person more likely to act out. This would create a higher correlation between potential fantasy aggression and behavioral aggression. This challenges the longer-held view of a positive correlation between present fantasy aggression and behavioral aggression. Both theories need to be tested.

The Hafner and Kaplan system, in contrast to Stone's, may be overly complex. Aggression is likely a construct with many domains, such as frustration, impulsivity, anger, and self-esteem. When looking at the relationship between fantasy aggression and behavioral aggression, it may be important not to mix the issue and score various aspects from other domains. Scoring for grief or emotional deprivation, as on the Hafner and Kaplan scale, may not be conducive to a clear distinction between aggressive and non-aggressive groups.

The present study used a blend of these two systems that takes Meloy and Gacono's (1992) theories and some of Lindzey and Tejessy's categories into account and may provide a better distinction between aggressive and non-aggressive groups as well as a higher correlation between fantasy and behavioral aggression. The first nine categories scored are: verbal aggression, negative emotions, predatory animals, destructive forces of nature, death symbol, broken object, weapon, physical aggression, and self aggression. These categories are scored within three subcategories, in the present, past, and future tenses. This is in accordance with Stone's and Maloy and Gacono's beliefs that aggressive fantasy that does not take place in the present may differentiate aggressive from non-aggressive persons. Further categories include: want, sadomasochistic thought, graphic violence, avoidance, failure or death of non-hero, turns, aggressive conflict, and resolved. Each category is scored for presence or absence: one point for presence in story, and each category can only be scored once within the story in order to control for literacy of the subjects and verbosity.

Although Hafner and Kaplan (1960) and Stone (1956) assigned point values to the categories, the Blended Scoring System utilizes a presence/absence score for the reasons cited above. Assigning a point value for death, as in the Stone scoring system, was not included because death is not always a result of aggression. In order for death to be coded, it must be a result of aggression, either human, animal, or force of nature, etc. In keeping with Meloy and Gacono's research, an additional point for sadomasochism was added in order to take the quality of aggression into account. The effect of potential/past aggression versus current aggression on the correlation between fantasy and behavioral

aggression was calculated. In addition, when applying a scoring system to someone who does not wish to be thought of as aggressive, it is important to score items that do not have face validity for aggression. Scoring for items such as broken objects, or destructive forces of nature may increase external validity of the scale beyond subjects who have self-reported aggression, as will scoring for death or failure of non-heroes.

Comparing TAT Aggression and Behavioral Aggression

Dhapola (1971) reviewed the effectiveness of the TAT as a measure of aggression. He considered three questions. First, how suitable is the TAT for assessing the aggression that was reflected in behavior? Second, what variables account for inconsistency between aggression in fantasy and aggression in behavior? And third, what problems emerge for further investigation into this area? Because of the social disapproval of manifest aggression and aggressive acts, face valid methods of inquiry may not be accurate assessments of how aggressive a person may become. People have the motivation to cover up socially inappropriate urges and acts. Operant tests, because they are ambiguous to a certain extent, are useful at gaining information that the subject is unwilling or unable to articulate.

In looking at the TAT and aggression, Dhapola reviewed 10 studies and their outcomes. The populations and specific cards used varied, as did their results. Overall, there was a positive correlation between fantasy aggression and behavioral aggression but it was not high. Dhapola suggests that the reason for this is that “contrary to the notion that operant techniques reveal underlying deep aggressive trends, they reveal only those trends which the subject, if willing, can verbalize.” In addition, he stated that subjects

know they are being tested psychologically and will be guarded against giving disturbed answers or too much information about themselves. The more the subject knows about testing, the less useful information may be obtained.

Dhapola discounts the idea that projective testing is ambiguous enough to get through those barriers, and that people can express aggression without being aware of it. However, it has been the opinion of many other researchers (Stone, 1956; Hafner & Kaplan, 1960; McClelland, 1980; Meloy & Gacono, 1982) that operant testing can be ambiguous enough to breach those barriers, because there are many ways of expressing aggression other than literal content. In addition, the significant differences in aggression scores between aggressive and non-aggressive groups, even if low, indicate a difference in how those groups respond. The key to increasing the significance of those differences may lie in the aggression scoring system used and what variables are controlled.

Many studies have tried to establish a correlation between behavioral aggression and aggression scoring systems of the TAT with varying results. Many studies reported a positive correlation between observed behavioral aggression and aggression scored in the TAT (Davids, 1973; Evans, 1981; Hafner & Kaplan, 1960; James & Mosher, 1966; Skolnick, 1966; Stone, 1956). Other studies resulted in a negative correlation between observed behavioral aggression and aggression scores on TAT scales (Keltikangas-Jarvinen, 1982; Matranga, 1976). Two studies, Lindzey and Tejessy (1956) and Magargee and Cook (1966), found positive correlations with self-reported behavioral aggression and the TAT scored aggression, but no correlation between the behavioral aggression scales used and observed aggression. None of the above groups used similar

samples or aggression scoring systems within the group, so it is not clear why positive results were found in some cases and not for others.

In comparing studies of aggression and the TAT and trying to reconcile their findings, it is important to look at populations, methods and scoring criteria. Differences in these categories between studies make results less comparable. Four of the ten studies used schoolboys, 3 used college students, one study used army men, one used army prisoners, and one study used neurotic patients. The demographic and behavioral differences in some of these populations are extreme, although the only group that showed a negative correlation between aggressive fantasy and behavior was the group of neurotic patients.

Another difference between studies was the TAT cards used in each. Although several cards (3BM, 6, 8, and 11) were used in the majority of the studies, each study had its own unique combination of cards. One study made up its own cards. Evidence indicates that the cards that have the most pull for aggression are the less ambiguous cards with more aggression pictured in the card. The cards that are considered better indicators of aggression by most investigators are 1, 3BM, 4, 6BM 12M, 13MF, 18BM, and 18GF.

Finally, the scoring system used is very important. It has been suggested that Murray's interpretation scheme is overly simplistic and unable to differentiate the more subtle forms of aggression. Measures of anxiety, fear of punishment, and guilt feelings applied in addition to scores of aggression have led to more precise predictions of overt aggression (Dhapola 1971).

The strongest positive correlations between TAT aggression scores and behavioral aggression were found in highly aggressive groups, such as anti-social personalities in Army prisons. Lower aggression (or less extreme expressions of aggression) groups, such as schoolboys, had lower correlations between TAT aggression scores and behavioral aggression. This finding may suggest a floor effect or that the TAT is a good indicator of antisocial aggression, but not of milder or more social forms of aggression. There may be two different reasons for this. First, people with antisocial personalities may be unable or unwilling to shield their aggressive thoughts, due to the pathology of their aggression. It would be more blatant. Second, it is possible that for average people, an expression of fantasy aggression may be indicative that they are able to deal with their aggression in a healthy way. People who are unable to fantasize about aggression may need another outlet for it, and thus commit aggressive acts. If this is true, then a more subtle and detailed look at the TAT may be required to detect risk of aggression accurately. Instead of overtly hostile acts, it may be that interpersonal conflicts or incomplete resolution of problems in the TAT stories may be more indicative of behavioral aggression than fantasy aggression would. Instead of the simple presence of fantasy aggression, behavioral aggression may be more strongly linked to more subtle differences in fantasy behavior, or patterns of fantasy.

It appears that self-reported aggression has the highest positive correlation with the TAT aggression scores compared to clinically diagnosed behavioral aggression, in non-prison populations. Although some results indicate that antisocial or highly violent populations will score significantly higher on TAT aggression scoring systems (Hafner &

Kaplan, 1960; Stone, 1956), other studies indicate significantly less fantasy aggression, and lower scores on aggression scoring systems with violent or antisocial populations (Keltikangas-Jarvinen, 1982; Meloy & Gacono, 1992). The question that remains is what fantasy aggression signifies. Is it a healthy and normal release whenever present, does it differ between aggressive and non-aggressive groups, or is it indicative of aggressive behavior? It is important to analyze the systems that have yielded a significant positive correlation between behavioral and fantasy aggression and determine what aspects they are successfully measuring and which are not meaningful. It is the author's opinion that gender differences and story length are both significant aspects of assessing aggression with the TAT.

Controls for TAT Study

In order to empirically evaluate the content of the TAT responses, certain factors should be examined and subsequently controlled, if they are shown to affect the TAT scores. Gender and story length have been shown to affect research results (McClelland, 1980; Pollack & Gilligan, 1982). The effects of gender and story length should be examined and controlled. Additionally, certain MMPI-2 scales can be used for convergent validity of aggression in order to support placement of subjects in aggressive or non-aggressive groups.

Gender differences. There are established differences between male and female reports of aggression. Men report more aggression and score higher on aggressive scales than women (Benton et al., 1982; Kalliopuska, 1992; Pollack & Gilligan, 1982). It has been postulated that men and women perceive danger, and therefore aggression,

differently. Pollack and Gilligan (1982) theorized that men perceive danger in affiliation while women perceive danger in achievement. They further theorized that TAT protocols would reflect these differences and hypothesized that men would report more aggression involving affiliation and women would report more aggression involving achievement. Benton et al. disputed their results (1982) in a replication study with key differences in implementation, such as cards used and instructions given. The differences between the studies make conclusions difficult to draw. Other studies have found evidence that differences in sex-role orientation have more to do with differences in behavior, motivations and social structure (Stewart, 1982). While gender is often the basis for sex-role orientation, it is not universally so, and the difference between sex-role orientation and gender may account for discrepancies found between studies looking at gender and aggression. The one clear result of these studies is the fact that men report more behavioral aggression than women, and score higher on fantasy aggression with TAT aggression scoring systems (Benton et al., 1982; Pollack & Gilligan, 1982). Contrary to the above findings, Eagly and Steffen (1986) report that in a meta-analytic review, sex differences were inconsistent across studies and are likely to be a function of the situation, the nature of the aggressive behavior, and the behaviors' social consequence related to gender roles. Further analyses are necessary in order to further evaluate sex differences in aggression.

Story length. The longer the story given to a stimulus, the more information is gathered, and the story can be seen as a sample of behavior. In comparing aggression scores, it is important to be aware of how much behavior, how long a story, has been

sampled. In the study by Keltikangas-Jarvinen (1982), the negative correlation between behavioral aggression and scored fantasy aggression was accompanied by the fact that the aggressive group, inmates in prison, told stories that were noticeably shorter and “scantier” than the control group. Controlling for story length would even out the playing field and establish more equal amounts of sampled behavior, and should always be done (McClelland, 1980).

MMPI-2 scales. Certain scales of the Minnesota Multiphasic Personality Inventory indicate aggressive characteristics. High scores on scale 4, Psychopathic Deviate, may indicate aggressive acting out and a tendency towards being hostile, aggressive, and antagonistic. High scores on scale 9, Hypomania, may indicate a low frustration tolerance, difficulty in inhibiting impulses, and periodic episodes of irritability, hostility, and aggressive outbursts. High scores on the Anger scale are indicative of persons who may lose control and may be physically abusive (Graham, 1993). Elevations of these three scales may be seen in people judged as aggressive. An elevation on the F validity scale in addition to scales 4, 9, and Anger was found to have a significant, positive correlation with aggressive acting out (Costello et al., 1996; O’Laughlin & Schill, 1994). Therefore, comparing these scales to levels of aggressive behavior may provide convergent validity for those groups.

Hypotheses

There has been much interest in the ability to assess “aggression”; however, aggression is multifaceted and perhaps for that reason has historically been very difficult to evaluate and assess, with many inconsistent and population-specific results. It has

been theorized that the TAT may be able to identify “aggression”; however, attempts to do so have met with conflicting results. Three key issues in the assessment of aggression are how “aggression” is defined (the content domain of the construct), the role that fantasy aggression plays in regards to behavioral aggression, and whether the TAT can be objectively scored to assess aggression, differentiating between aggressive and non-aggressive people.

Hypothesis 1: TAT aggression scores are positively correlated with the following MMPI-2 scales- a) F b) 4 c) 9 d) Anger.

Hypothesis 2: A group of aggressive psychology clinic clients will have higher aggression scores on the TAT than the non-aggressive group.

Hypothesis 3: Male participants will have higher TAT aggression scores than female participants.

CHAPTER 2

METHOD

Participants

Participant information and TAT protocols were gathered from an archival data set from the University of North Texas Psychology Clinic. All information came from closed files. Criteria for participation included participants being at least 18 years old, and having completed a TAT, the Wechsler Adult Intelligence Scale, the Minnesota Multiphasic Personality Inventory, either first or second edition, and the Rorschach. As shown in Table A1, the ages of participants range from 18- 48 years old, mean= 30.9. No ethnic groups were purposefully excluded; groups represented include Caucasian (n=36), Hispanic (n=4), and African American (n=3). Three participants did not have recorded ethnicity. Both male (n= 31) and female (n=15) genders are represented. Single people (n= 25) comprised 54.3 % of the participants, people in committed relationships (n=1) 2.2%, married people (n= 12) 26.1%, divorced people (n= 6) 13%, and separated people (n= 1) 2.2%. One participant did not have marital information on file. The mean education level was 13.12 years.

A sample of 89 clinic files was initially selected using the criteria of having completed a TAT, the Wechsler Adult Intelligence Scale, the Minnesota Multiphasic Personality Inventory, either first or second edition, and the Rorschach. Two graduate psychology students who examined the intake form, intake report, testing, and client

notes read these files. The final sample (n= 46) was selected based on clearly meeting aggressive or non-aggressive grouping criteria and having completed a Rorschach and TAT. There were higher numbers of non-aggressive versus aggressive participants available in the larger sample of files, so the non-aggressive participants were matched roughly two to one to the aggressive participants on the basis of gender, race, and age. Every aggressive participant was matched to at least one non-aggressive participant, and in most cases was matched to two non-aggressive participants. A full two to one match of non-aggressives to aggressives was not possible due to the lack of appropriate files to choose from.

The final sample contained 46 participants, 31 men and 15 women. Of the aggressive group, 13 were men and 5 women. The non-aggressive group consisted of 18 men and 10 women. However, 12 participants did not have MMPI-2 information, so the sample size for analyses with the MMPI-2 was 34.

Aggressive group. Participants were classified as aggressive based on self-report descriptions of past behavior found in their clinic files. Eighteen participants met the requirements of this category. Sources of self-report behavior are the intake form and intake report. Aggressive participants reported on the intake form having two of the following: ‘uncontrollable anger’, ‘problem with temper’, or ‘urges to hurt someone’, in addition to answering affirmatively on the intake form to having committed interpersonal violence and describing the violence to the clinician. Typical examples of reported violence included spousal abuse and fighting with weapons.

Matched non-aggressive group. Participants who did not report aggressive

behavior on the intake form or report aggressive behavior directly to the clinician writing the intake report were classified as non-aggressive. These participants were chosen on the basis of not reporting any aggressive or violent behavior and denying interpersonal violence on the intake form.

Instruments

A coding sheet to record pertinent data from the intake forms was developed and used for the organization of data. This information included age, gender, race, incidents of past aggressive behavior, mood problems, and family information, as well as the reason for going to the psychology clinic.

TAT cards used. The cards that were used in this study are 1, 2, 3BM, and 4. Research regarding the TAT has found that different cards elicit or “pull” for different story elements and some studies have shown that some cards pull for a wider array of themes than others do. Cards 1, 2, 3BM, and 4 are among the top cards in terms of number of themes elicited. Cards 1 and 2 are noted for the pull for parent-child or family relations. Card 3BM is noted for its pull for depressive ideation and aggression and has been found to be the most discriminating between aggressive and non-aggressive groups (Stone, 1956). Card 4 is noted for its pull for heterosexual relationships and aggression. This selection should elicit a wide array of responses, both aggressive and non-aggressive (Cramer 1996).

Aggression Scale. A scoring system was developed by blending two popular scales, the Stone (1956) and Hafner and Kaplan (1960), with the theories of Meloy and Gacono (1992) and factors used by Lindzey and Tejessy (1956) This scoring system was

used to score for TAT aggression. Each story was scored separately and recorded and then a cumulative score for each participant was found by combining the scores of all his or her stories. The first nine categories scored were: *verbal aggression, negative emotions, predatory animals, destructive forces of nature, death symbol, broken object, weapon, physical aggression, and self aggression*. These categories were scored with three subcategories, in the present, past, and future tenses, following Meloy and Gacono's theory for the Rorschach. All of the past variables were combined to form a variable called Total Past, and all of the potential variables were combined to create a variable called Total Potential. Total Past and Total Potential were then combined to create an All Meloy and Gacono variable.

Further categories of the scoring system include: *want, sadomasochistic act or thought, graphic violence, avoidance, failure or death of non-hero, turns, aggressive conflict, and resolved*. See Appendix B for definition of each category. Each category was scored for presence or absence in each story, giving one point for presence in story. Each category was scored present only once in each story in order to control for literacy of the subjects and verbosity.

MMPI-2 scales. The T-scores for scales F, 4, 9, and Anger were recorded from each participant's file that included the MMPI-2 ($n=34$). The scores were then combined and the cumulative scores were then correlated with the TAT aggression scores and the aggressive grouping. Earlier studies showed a positive correlation between behavioral aggression and a cumulative MMPI-2 score which combined the T-scores of the scales F, 4, 9 and Anger (O'Laughlin & Schill 1994, Costello et al. 1996).

Design

The study utilized a between-subjects correlational design. The scores of certain MMPI-2 scales were correlated with the TAT aggression scores and the aggressive grouping in order to establish convergent validity for the designation of each participant in a group. The aggression scales, story length, and gender were analyzed for significant differences between the aggressive and non-aggressive groups. The categories on the aggression scale were analyzed for predictive weight, to assess which factors have the highest correlation with aggression.

Procedures

Data collection. The TAT responses to cards 1, 2, 3BM, and 4 were typed and proofread for accuracy. These responses were arranged so that each card's responses are together (all card 1 responses together, all card 2 responses together, etc.), and then a research team member who was not involved with the scoring randomized the order of each response within that framework.

Scoring. Two students in the graduate psychology program independently scored the responses using the aggression scoring system. When scoring the participants' responses, the code number of each response was removed, to avoid any prejudice due to familiarity with participant numbers and other responses. When scoring the stories, the occurrence (1) or non-occurrence (0) of each separate category was recorded. The total score for each story was then calculated by adding together the total number of categories scored per story. The cumulative score for each protocol was obtained by adding together the scores of each participants' four stories.

Inter-rater reliability. Additional clinic files not used in this sample due to not meeting criteria that would clearly place them in the aggressive or non-aggressive groups, or due to missing data, contained TAT stories. These were obtained to compile a practice response set to train the judges and show understanding of the scoring system before scoring the participants' responses. Eighty-percent inter-rater reliability on all categories was established on the practice protocols before judges scored the data set. Inter-rater reliability for the sample used in the study was calculated with a formula put forth by Smith, Feld, and Franz (1992). To calculate category agreement between two scorers, the total number of agreements between the scorers of that category are multiplied by two and then divided by the total number of agreements plus the total number of disagreements between the two scorers of that category, or $(2xA)/(A+D)$. Because category agreement presented by this formula can be misleading when the category is scored infrequently, frequency information is provided with the inter-rater reliability in Table A2. Inter-rater reliability of .80 or higher was achieved for all categories except *sadomasochistic act, thought, or graphic violence*. In the actual data, this category was only scored once, with one additional disagreement, lowering the inter-rater reliability to .66, below acceptable limits. *Predatory animals, destructive forces of nature, and death symbol* did not occur in the data and received no scores.

In the event of disagreement between the judges, the judges consulted and reconciled the difficulty. Both judges agreed upon the scores used for data analysis. The use of a third judge did not prove necessary.

Length of story. Using the Microsoft Word program, the number of words in each

TAT response was counted and recorded. This information was examined for the possible significance of story length in relation to amount of fantasy aggression expressed. Story length was highly related to TAT aggression scores, $r = .38$, $p = .01$, so story length was statistically controlled by removing two outliers whose word count was more than two standard deviations above the mean (Smith, Feld, & Franz, 1992).

Analytic considerations. Due to the nature of the archival data set, there were considerations to take into account when performing data analysis. First, the small size of the total sample ($n=46$) and the MMPI-2 sample ($n=34$) made finding significant correlations more difficult. Power and effect sizes needed to be examined in relation to the correlations. In addition, previous research with the TAT has shown that word count is often correlated with story length (Keltikangas- Jarvinen, 1982; McClelland, 1980). Controlling for word count is an important part of analyzing data using a TAT scoring system. Two TAT outliers were located in this sample, participants whose word count and TAT scores were more than two standard deviations higher than the mean. These outliers were both in the non-aggressive group and appeared to change the results and were removed from certain analyses, further reducing the sample size ($n=44$). Removing the outliers lowered the sample correlation between word count and uncorrected TAT score to $r = -.15$, $p = .32$.

CHAPTER 3

RESULTS

Preliminary Analyses

The word count was correlated with aggressive grouping and group differences between Total Word Count and aggressive grouping approached significance, $r = .24$, $p = .11$. The Total TAT Aggression Score was correlated with the Total Word Count and was highly significant, $r = .38$, $p = .01$. This suggested that story length had an influence on the scores, and may be obscuring the effectiveness of the scoring variables. Word count was controlled for by locating two outliers, participants whose Total Word Count exceeded the mean by more than two standard deviations. These participants were removed from certain analyses in which it was important for TAT scores not to correlate with word count. In addition, the effects of word count on the TAT scores were partialled out using multiple regression. The adjusted TAT scores were then correlated with aggressive grouping and the results were not significant, $r = .11$, $p = .47$.

Check on Aggressive and Non-aggressive Grouping

In order to provide convergent validity for the placement of the participants in the subgroups of aggressive and non-aggressive, the combined MMPI-2 scale T-scores were compared by aggressive grouping. The group mean differences and correlations of the MMPI-2 scores with aggressive grouping are shown in Table A3. All of the scales were shown to be significantly related to this study's definition of behavioral aggression.

Descriptive Statistics

The aggressive versus non-aggressive groups were further compared on selected intake variables, listed in Table A4. Of these, only parental drug use showed a significant difference between the groups, $t(36) = 2.03$, $p < .05$; point biserial $r = .39$, $p = .02$. A chi-square of parental drug use and aggression showed that of the aggressive group, 68.8% reported parental drug use and only 31.3% did not, compared to 30% of the non-aggressive group reporting parental drug use and 70% not reporting parental drug use, chi-square = 5.36, $p < .02$.

The descriptive statistics for the MMPI-2 and TAT scores are shown in Table A5. The T-scores of the MMPI-2 are scaled with 50 being the mean and 10 being the standard deviation. The reported MMPI-2 scores of the aggressive group differed from the normative population sample, with higher means on the F Scale, Scales 4, 9, and Anger. This is congruent with previous research showing aggression to correlate with higher T-scores on those scales (Costello et al., 1996; O'Laughlin & Schill, 1994).

Hypothesis Results

Hypothesis 1 stated that the MMPI-2 scores of F, 4, 9, and Anger would correlate positively with the TAT aggression scores. When overall uncorrected TAT scores were used, the analyses did not support this hypothesis. Although in the predicted direction, the MMPI-2 scores did not correlate significantly with the Total TAT scores. The correlations of the MMPI-2 scales with the TAT scores are listed in Table A6. Although the correlation between Card 3BM aggression scores and Scale 4 approached significance, there is not a consistent correlation between TAT aggression scores and the

MMPI-2. When TAT scores were corrected for story length by the removal of the outliers and by partialing out the effects of word count, the results were the same.

Hypothesis 1 was not supported.

Hypothesis 2 stated that the Aggressive group would have higher TAT aggression scores than the Non-aggressive group. Group differences in the Total TAT score and the individual card scores of Cards 1, 2, 3BM, and 4 were analyzed using t-tests and correlations, as seen in Table A7. Of these, only Card 1 scores differed significantly between aggressive grouping and the difference was in the opposite direction of the hypothesis. To evaluate the reasons for the negative findings on Card 1 and the lack of significant correlations for the rest, further analyses were conducted, including controlling for word count and gender.

As the only card whose TAT aggression score differed significantly with aggressive grouping, it was important to find out how much of the association was accounted for by high word count. The correlation of the Total TAT Score with Aggressive grouping and without the outliers was not significant (see Table A8). The effect of taking out the outliers, and thus controlling for the high correlation between Card 1 Aggression Score and Word Count, dropped the Card 1 Aggression Score to just below significance when it was correlated with aggressive grouping, $r = -.25$, $p < .11$.

To further explore differences between the aggressive grouping and TAT scores, the past categories, potential categories, and the summation of past and potential categories were all correlated with aggressive grouping without the outliers. These can be seen in Table A9. None of the mean differences or correlations between the past or

potential variables and aggressive grouping were significant. All of the individually scored categories were then individually correlated with aggressive grouping. The only correlation that approached significance with aggression grouping, with or without the outliers, was *physical aggression past*. This correlation was negative both with the outliers, $r = -.31$, $p < .04$, and without the outliers, $r = -.26$, $p < .08$. Thus, Hypothesis 2 was not supported. The differences between the aggressive participants and non-aggressive participants in TAT aggression scoring showed that the non-aggressive participants received higher scores, which is the opposite of Hypothesis 2.

Hypothesis 3 stated that male participants would have higher TAT aggression scores than the female participants. This hypothesis rested upon the theories that males show more aggression than females and that the aggressive participants would have higher scores, the latter of which was not supported. In order to evaluate the effect of gender on the TAT aggression scores, a 2 X 2 factorial ANOVA (gender X aggressive grouping) was run on the Total TAT Score. None of the results were significant ($F(3,42) = .14$, $p < .71$). The ANOVA was then run without the outliers. The results were again not significant ($F(3,40) = .25$, $p < .62$).

Although not significant, it was interesting to note that an examination of the cell means showed female participants had both the highest and lowest aggression scores, seen in Table A10. This created more disparity among the female participants than the males, although the differences did not approach clinical significance. Hypothesis 3 was disconfirmed.

Exploratory Analyses

In order to find a stronger relationship between the TAT scores and aggressive grouping, the category of *physical aggression past* was added to the TAT Score on Card 1 and the combined score was then correlated with aggressive grouping. The result was significant, $r = -.34$, $p < .03$, more significant than either variable alone. It is not clear whether this significant correlation is due to reliable differences between aggressive and non-aggressive groups, or is a chance finding for this study.

CHAPTER 4

DISCUSSION

This empirical study compared the theory that behaviorally aggressive people will demonstrate aggressive fantasy (Stone, 1956; Hafner & Kaplan, 1960) with the theory that behaviorally aggressive people are less likely to engage in fantasy aggression than non-behaviorally aggressive people (Meloy & Gacono, 1982). Hypothesis 1 was not supported when the MMPI-2 scores did not correlate with the TAT aggression scores. Hypothesis 2 was not supported when TAT aggression scores did not correlate positively with aggressive grouping. Hypothesis 3 was not supported when there was no significant difference between male and female participants in their TAT aggression scores. Further analyses were necessary in order to differentiate behaviorally aggressive people from the non-behaviorally aggressive.

The MMPI-2 scores did correlate strongly with the variable of aggressive grouping. This is not surprising, in general, because the information that the participants were behaviorally aggressive was gained through self-report information that they disclosed. Thus, a self-report measure such as the MMPI-2 should agree with other self-report information. The point biserial correlation between the Total MMPI-2 Scores and aggressive grouping was high enough to reflect that the participants were, overall, properly assigned in groups. Due to the self-report nature of the aggression information, false-negatives were more likely than false positives, and the MMPI-2 correlation with

aggressive grouping supported the assignment of those groups. The MMPI-2 is a robust measure and is an appropriate measure for this population. The sample size is fairly small, which can affect significance of results, but the correlation between the MMPI-2 and aggressive grouping is significant enough that it appears to reflect a substantial effect size.

In order to differentiate between the Aggressive groups, the TAT scores had to be examined on a card by card basis, and a variable by variable basis. Through the course of the analyses, two outliers were found that slightly changed the results because their TAT aggression scores were highly correlated with their word count: their stories were longer and also had higher scores than other participants. Historically, TAT scores yielded by other scoring systems are correlated with word count, and a low word count may affect the validity of the scores (McClelland, 1980). The Blended Scoring System produced non-zero scores even with protocols having low word count, but the relative validity of those scores remains uncertain. The usual way of correcting scores for word count by partialling word count from Total TAT Scores was also used (Smith, Feld & Franz, 1992). However, neither way of controlling for the effects of story length significantly changed the overall results.

When the outliers were removed, TAT Card 1 score showed a negative correlation with aggressive grouping that approached significance. In addition, the single variable *physical aggression past* showed a correlation with aggressive grouping that also approached significance. *Physical aggression past* was not scored on Card 1, so there is no overlap between Card 1 aggression score and *physical aggression past*. In a post hoc

analysis, the TAT Score for Card 1 was combined with the score for *physical aggression past* by adding the two together, and the correlation was significant, more significant than either variable alone. This may be a chance artifact of this sample, or a legitimate difference between aggressive and non-aggressive groups.

The negative correlation between behavioral aggression and scored fantasy aggression that occurs in the past is in direct contrast to the work of Meloy and Gacono, who state that behaviorally aggressive people are more likely to express fantasy aggression in the past or future. What is very different about Meloy and Gacono's study and the present study is the population used. Meloy and Gacono studied people with much higher levels of behavioral aggression than the present study. In addition, they used an upper cutoff of 80 for IQ. This study made no effort to control for IQ, and the mean IQ for the present sample is average, much higher than the Meloy and Gacono cutoff. It may be that behaviorally aggressive people with more intelligence may be able to better inhibit their fantasy aggression, while non-behaviorally aggressive people feel free to engage more frequently in fantasy aggression.

One explanation of how Card 1 aggression scores differentiated between the aggressive and non-aggressive groups may be about suppression of aggressive imagery as a reaction to the first card of a projective test (Cramer, 1996; Skolnick, 1966). This suppression may not occur after the first administered card, Card 1. More fantasy aggression is then expressed, thus removing the differentiation between the groups, except for the presence of past physical aggression. Due to the archival nature of the data used, card order for each participant was not available. The order that each participant

was given the TAT cards is not known. However, Card 1 is very often the first card given, which would help explain the difference between its aggression scores and that of the other cards.

It is not clear whether imagery suppression is in reaction to the testing itself, or specifically about aggressive stimuli (Teglasi 1993, O’Gorman & Stair 1977). Before the outliers were removed, the correlation between word count and aggressive grouping approached significance, indicating that the aggressive group, in general, had lower scores. However, this effect was not seen when the outliers were removed. Instead of a global suppression of the testing, as indicated by story length, a suppression of aggressive imagery may be the difference between the two groups. It would be important to study the effects of changing card order on the scoring system, to establish whether the difference in Card 1's significance was due to being the first card, whether it is a difference in that card's content as opposed to other cards, or whether this was a chance finding singular to this study.

Hypothesis 3 was not supported, and, furthermore, the female participants' scores showed a wider range than the male participants, indicating a less homogeneous group. The male participants had a more homogenous set of scores overall, while the female participants' scores were more variable. This is opposite to previous findings when female participants usually show lower fantasy aggressive scores than males (Pollack & Gilligan, 1982; Benton et al., 1983). Because there was no significant mean difference between the male and female participants in their scores related to aggressive grouping, this trend may simply be an artifact of the small sample size, and the small number of

female participants. However, Eagly and Steffen (1986) found no evidence that females consistently exhibit less aggression than males, which was supported by the present research. The wider range of female TAT aggression scores may indicate the need for a separate measure for males and females, but this need is not statistically supported as yet. No conclusive evidence has been found.

An unexpected finding was that the aggressive group reported a significantly higher amount of parental drug use than the non-aggressive group. This indicates that parental drug use information should be gathered in studies of aggression and that in a sample of low risk psychology clinic outpatients it may be used to aid in differentiating behaviorally aggressive people from non-behaviorally aggressive people.

Overall, the results were surprising; the hypotheses were not supported. The biggest weakness in the study is likely its small sample size and the newness of the measure used, the TAT Blended Scoring System for Aggression, as well as the method employed for assessing aggression. Due to the self-report nature of the data, false-negatives were likely, and there was no clear data to indicate that the aggressive group was at a similar level of aggression. Most of the scoring categories used to create the Blended Scoring System were not effective in differentiating the aggressive groups. This may be due to population differences between the samples used in the development of these categories and the sample used in the present study. Reconciling sample differences is historically difficult with the TAT. The studies that developed the categories had varied samples, from prison inmates to college students, and populations with higher behavioral aggression appear to show different results from those with lower levels of

behavioral aggression. The relationship between fantasy aggression and behavioral aggression may not be consistent when the levels of behavioral aggression increase.

Although the results were not in the predicted direction of Hypothesis 2, the ability to detect behavioral aggression appears to be present with the use of Card 1 and *physical aggression past*. This study would have to be replicated in order for these results to be verified as a genuine difference between aggressive and non-aggressive groups, and not as a chance finding. If the results are genuine differences, they indicate that aggressive persons are more likely to suppress aggressive imagery on the first card of the TAT, despite self-reports of aggressive behavior. This may be due to discomfort with the aggressive imagery despite behavioral aggression, and this discomfort subsides with continuation of the TAT cards. Alternatively, it may be due to a complete suppression of imagery to the first card given in the TAT, a need to control fantasy despite the ability to express behavioral aggression on the intake form and on the MMPI-2. These explanations are not mutually exclusive, and they may, in fact, interact. The question that needs to be answered is, if these results are accurate, then why would someone self-report aggressive behavior and then inhibit aggressive imagery on the TAT?

Using aggressive participants who are not in a controlled setting which would inhibit or structure their behavior, and finding a way to verify the presence of new aggressive behavior, perhaps with the use of clinical polygraphs, would further validate the ability to detect behavioral aggression and test the ability to predict future behavioral aggression. These research methods are complex and expensive, and would be a challenging research project. The present study was used in lieu of access to these more

challenging and expensive methods.

Historically, it has been very difficult to detect potential behavioral aggression accurately. At present, the most accurate predictor for future behavioral aggression is past behavioral aggression. Detecting potential behavioral aggression was beyond the scope of this study, but the first step involves testing that can detect past behavioral aggression. A replication study with a larger sample that includes more female participants and varied card presentation and had a method for verifying behavioral aggression is necessary. Further refinement of the TAT Blended Scale scoring system with Card 1 and with *physical aggression past* on Card 2, 3BM, and 4 may further the process needed to provide clinicians with a tool to aid in difficult decision making involving the potential of behavioral aggression. The ability to accurately detect behavioral aggression through its relationship with fantasy aggression is the first step to being able to accurately assess potentially aggressive people.

APPENDIX A

TABLES

Table A1

Demographic Descriptive Statistics

Variables	N	Range	Mean	SD
Age	46	18-48	30.94	8.29
		% of sample		
Gender-male	31	67.4		
-female	15	32.6		
Ethnicity- African-American	4	8.7		
- Caucasian	37	80.4		
- Hispanic	4	8.7		
-missing	1	2.2		
Education- less than high school	3	6.5		
- high school grad	15	32.6		
- some college	21	36.9		
- college grad	3	6.5		
- missing	4	8.7		

Table A2

TAT Inter-Rater Reliability and Category Frequency

Categories	Reliability	Total Scored Frequency
<i>verbal aggression*</i>	.80	6
<i>past</i>	---	5
<i>potential</i>	---	2
<i>negative emotions</i>	.97	15
<i>past</i>	---	1
<i>potential</i>	---	2
<i>broken object</i>	.88	0
<i>past</i>	---	3
<i>potential</i>	---	1
<i>weapon</i>	.94	8
<i>past</i>	---	1
<i>potential</i>	---	0
<i>physical aggression</i>	.80	9
<i>past</i>	---	6
<i>potential</i>	---	4
<i>self aggression</i>	1.00	0

(Table A2 cont.)

Categories	Reliability	Total Scored Frequency
<i>past</i>	---	2
<i>potential</i>	---	1
<i>want</i>	.89	13
<i>failure/death of non-hero**</i>	.95	2
<i>turns</i>	---	1
<i>aggressive conflict</i>	---	5
<i>resolved</i>	---	2
<i>avoid</i>	.95	30

* categories of present, past, and potential were combined to calculate inter-rater reliability

** the categories of *failure/death of non-hero*, *turns*, *aggressive conflict*, and *resolved* were combined to calculate inter-rater reliability due to low occurrence.

Table A3

T-tests and Correlations Between MMPI-2 Scales and Aggressive Grouping

MMPI-2 Scales	Mean (SD) Aggressive <u>n</u> = 16	Mean (SD) Non-Aggressive <u>n</u> = 25 ^a	<u>t</u>	point biserial <u>r</u>
F Scale	75.94 (23.19)	57.6 (14.36)	3.14**	.45**
Scale 4	71.06 (14.87)	61.88 (13.97)	2.00	.31*
Scale 9	63.94 (18.3)	52.2 (9.12)	2.73**	.40**
Anger Scale	<u>n</u> = 15 66.47 (8.08)	<u>n</u> = 19 ^b 48.63 (9.14)	5.94**	.72**

** $p < .01$

* $p < .05$

^a number of participants who had these scores in their files

^b fewer participants because data not available

Table A4

Intake Variables Compared to Aggressive Grouping with Number of Participants

	<u>n</u>	<u>n</u>	<u>t</u>
	<u>Aggressive</u>	<u>Non-Aggressive</u>	
years married	13	24	-.28
number of children	16	24	.64
prescription meds	16	25	.37
now in treatment	17	26	1.35
previous treatment	12	19	.88
hospitalization	18	24	-.20
suicide attempts	14	22	.20
alcohol abuse	18	28	.59
parental divorce	18	23	.33
father education level	10	13	-1.81
mother education level	13	13	-.18
parental drug use	16	22	2.03*

*p<.05

Table A5

Aggression Related MMPI-2 and TAT Scores- Descriptive Statistics

<u>MMPI-2 T-Scores</u>	<u>N</u>	<u>Range</u>	<u>Mean</u>	<u>SD</u>
F Scale	41	36-119	64.8	20.2
Scale 4	41	38-98	65.5	14.8
Scale 9	41	36-108	56.8	14.5
Anger Scale	34	31-99	56.5	12.4
Total MMPI-2 Score*	41	146-354	233.9	50.8
TAT Aggression Scores				
Agg Card 1	46	0-2	.20	.54
Agg Card 2	46	0-4	.20	.78
Agg Card 3BM	46	0-4	1.4	1.1
Agg Card 4	46	0-7	1.1	1.4
Total TAT Agg	46	0-12	2.9	2.3
TAT Word Count				
Card 1	46	21-253	82.7	53.6
Card 2	46	13-288	97.5	60.6
Card 3BM	46	0-285	68.1	49.1
Card 4	46	21-349	88.0	66.0
Total Words	46	88-1010	336.3	192.8

*sum of F-Scale, Scale 4, Scale 9, and Anger T-Scores

Table A6

Correlations of MMPI-2 Scores with TAT Scores

	F Scale	Scale 4	<u>MMPI-2 Scores</u>		Total MMPI-2
			Scale 9	Anger	
<u>TAT Scores</u>					
Agg Card 1	r=.08	r=.12	r=.01	r= -.09	r=.03
Agg Card 2	r= .17	r= -.01	r=.07	r=.12	r=.16
AggCard 3BM	r=.17	r=.26+	r=.17	r=.02	r=.21
Agg Card 4	r=.15	r=.09	r=.02	r=.15	r=.11
Total TAT Agg	r=.24	r=.21	r=.12	r=.13	r=.23

+p<.10 -two-tailed tests

Table A7

T-Tests and Correlations Between Aggressive Grouping and TAT Scores

<u>TAT Scores</u>	<u>Mean (SD)</u> <u>Aggressive</u> <u>n= 18</u>	<u>Mean (SD)</u> <u>Non-Aggressive</u> <u>n= 28</u>	<u>t</u>	<u>point-biserial r</u>
Agg Card 1	.00 (.00)	.32 (.67)	-2.03*	-.29*
Agg Card 2	.17 (.71)	.21 (.83)	-.20	-.03
Agg Card 3BM	1.50 (1.04)	1.39 (1.17)	.32	.05
Agg Card 4	1.06 (1.06)	1.11 (1.55)	-.12	-.02
Total TAT	2.72 (1.53)	3.04 (2.67)	-.45	-.07

*p<.05

Table A8

Correlations Between Word Count, TAT Scores, and Aggressive Grouping With

Outliers Omitted

	<u>Total TAT</u> <u>Word Count</u>	<u>Aggressive Grouping</u>		
			<u>Aggressive</u> <u>Mean (SD)</u>	<u>Non-Agg.</u> <u>Mean (SD)</u>
Aggressive Grpg	r= -.20	r=1.00	---	---
Agg Card 1	r= .06	r= -.25+	.00 (0.0)	.19 (.49)
Agg Card 2	r= -.18	r= .01	.17 (.71)	.15 (.78)
Agg Card 3BM	r= -.03	r= .11	1.50 (1.00)	1.27 (1.12)
Agg Card 4	r= -.11	r= .06	1.06 (1.06)	.92 (1.1)
Total TAT Agg	r= -.15	r=.05	2.72 (1.53)	2.54 (1.90)

+p<.10 -two-tailed tests

Table A9

Past and Potential Variables Correlated with Aggressive Grouping

		<u>Aggressive Grouping</u>	
		Aggressive Mean (SD)	Non-Aggressive Mean (SD)
Total Past	r= -.15	.22 (.55)	.42 (.70)
Total Potential	r= -.13	.11 (.32)	.23 (.51)
All Meloy and Gacono	r= -.16	.33 (.84)	.65 (1.06)

Table A10

TAT Aggression Scores by Gender and Grouping

	Male	Female
Aggressive	n=13 Mean=2.77	n=5 Mean=2.60
Non-Aggressive	n=18 Mean=2.89	n=10 Mean=3.30

APPENDIX B

MANUAL FOR BLENDED AGGRESSION SCORING SYSTEM

All columns are either scored 1 for presence of category or left blank. If a story says this will happen or that will happen, score for both eventualities.

Column 1-4: subject number and card (e.g. 102.3)

Column 5- Verbal- Verbal aggression: arguments, insults, yelling, threatening, etc.

Demanding something of so can be coded if there are implied or stated negative consequences for refusal.

Column 6- Verbal past: verbal aggression that is stated in the past tense, happened in the past.

Column 7- Verbal pot- verbal potential: verbal aggression that is stated in the future tense, happens in the future.

Column 8- Neg- Active negative emotions associated with anger and hostility, not emotions associated with fear. For example, hate, disgust, loathing, bitterness, agitated, angry, hostile, outraged, seething. Do not score frustration or resentment. If it is not clear whether word should be scored for active, negative emotion, look at the context and how the word is used in the story.

Column 9- Neg past: negative emotions that are stated in the past tense.

Column 10- Neg pot: negative emotions that are stated in the future tense.

Column 11- PhysAgg: overt physical aggression between people or towards an object. A person physically hurting someone else or breaking an object.

Column 12- PhysAgg past

Column 13- PhysAgg pot

Column 14- Self: physical aggression towards the self, hurting self or killing self.

Column 15- Self past

Column 16- Self pot

Column 17- Want: wanting to commit an aggression (hurt someone, break something), or trying to decide whether to do an aggression (thinking about killing self). If the character *wants* to do something and then *does* it, score for both categories.

Column 18- SM Act: character that commits an aggressive act and expresses pleasurable affect in the aggression itself or the pain of another character.

Column 19- SM Thought: the subject or story character expressing pleasurable affect in the thought of violence or another's pain.

Column 20- Graphic: graphic or extreme violence that is related in the story, such as gutting, beheading, etc. or violence that is graphically illustrated and/or detailed, as in FQ +.

Column 21- Pred- Predatory animals: powerful hunting animals such as tiger, wolf, or lion.

Column 22- Pred past: predatory animals that are stated in the past tense. "The wolf *was* in the house."

Column 23- Pred pot: pred. animals that are stated in the future tense. "The wolf *will* come in."

Column 24- DFN- Destructive force of nature: dangerous natural occurrence such as hurricane, tornado, lightning, or earthquake.

Column 25- DFN past: force of nature that is stated in the past. "the tornado *swept* through and the lady was sad."

Column 26- DFN pot: force of nature that is stated in the future. "An earthquake *will come*."

Column 27- DSym- death symbol: a symbol representing death such as a shroud, gravestone, the grim reaper, or a scythe.

Column 28- DSym past: a death symbol referred to in the past tense. "She *had seen* the gravestone yesterday."

Column 29- DSym pot: A death symbol referred to in the future tense. "Tomorrow he *would go* to buy a shroud."

Column 30- BrokObj- broken object: an object that is broken or damaged.

Column 31- BrokObj past: a broken object referred to in the past tense. "She saw that the windows *had been* broken."

Column 32- BrokObj pot: a broken object that is referred to in the future. "The car *will be* broken."

Column 33- Wpn- Weapon or military: military characters or objects, such as a general or army fatigues. A weapon is anything used to physically harm or intimidate someone because of the potential for harm, such as a gun, knife, broken glass, club, etc.

Column 34- Wpn past: weapon or military referred to in the past tense.

Column 35- Wpn pot: weapon or military referred to in the future tense.

Column 36- Avoid: nothing in the story clearly explains or mentions the object on the floor in card 3BM or the tension between the couple in card 4.

Column 37- Fail: death or failure in a non-hero character. To be a character in the story, the person must take an action in the story, not just be heard about. If heard about, as in news that the hero gets, that news can be scored for other categories.

Column 38- Turns: intensity or unexpectedness of an aggressive act depicted in the story.

Column 39- Resolved: if aggressive conflict in the story is coded for either verbal or physical agg, this column is marked if the conflict is resolved in a meaningful way. It is not scored for magical thinking.

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