

relationship between Type A behavior pattern (TABP) and deadly force decision making. TABP consists of a collection of behaviors, including aggressiveness, hostility, a sense of time urgency, and a tendency toward heightened physiological arousal (Matthews, 1982). The relationship between TABP and deadly force decision making remains unexplored. The current proposal provides an overview of the research on deadly force decision making. The proposal then describes some pertinent research on TABP, particularly the aspects of TABP that presumably influence an individual's ability to make deadly force decisions. These include the aggressive component of TABP, the heightened arousal of Type A individuals under stress, the work performance of Type A individuals, the attentional aspect of TABP, and the time urgency component of TABP.

The present study hypothesized that Type A individuals would perform differently in deadly force situations than would Type B individuals. TABP includes many behaviors that can potentially affect an officer's ability to make a correct split-second decision. Several investigators have indicated that Type A individuals are more aroused and exhibit more physiological reactivity in certain challenging and stressful situations than Type B individuals (Edguer & Janisse, 1994; Pittner & Houston, 1979). Kirmeyer and Biggers (1988) found that Type A individuals created conditions in the work place that were likely to evoke a driven, time-urgent, and impatient behavioral style. TABP also has been partially defined by a heightened sense of time-urgency, or being preoccupied with deadlines and attempting to do more and more in less and less time (Gastorf, 1980; Landy et al., 1991). Bingham and Hailey (1989) hypothesized that the performance of Type A individuals would suffer under time-pressure, and Yarnold

and Grimm (1982) suggested that Type A individuals are more impatient than are Type B individuals. This literature implies that, in deadly force decision making situations, a Type A individual would be more likely to shoot, would shoot faster, and would not engage in as much cognitive processing compared to a Type B individual.

Aggression

This section on aggression will focus on two different types of aggression, hostile and instrumental (Feshbach, 1964), and how police officers might categorize their use of deadly force. Also discussed are the relationship between aggression and personality and the hostile attributional bias theory of aggression, which describes a tendency on the part of aggressive individuals to interpret others' intentions as hostile when the situation is ambiguous (Epps & Kendall, 1995). This theory relates to deadly force decision making because it suggests that aggressive police officers might perceive hostile intent when, in reality, the situation is benign. Finally, this section will review the literature on aggressive cues. The aggression cue literature is often conflicting. For example, researchers have found different results when studying the behavior of angered individuals in the presence of weapons. However, if the presence of a weapon increases the likelihood of aggression (Berkowitz & LePage, 1967; Fischer et al., 1969; Frodi, 1975), then an officer would be more likely to shoot when encountering a situation where weapons are involved.

Bartol (1991) stated that aggression is a part of human nature and the basic ingredient in violent crime. He believed that, through centuries of experience, humans

systems may be related to significant aspects of personality pathology, particularly proneness to aggressive behavior (Kernberg, 1995).

To date, little aggression research has focused on personality traits. In addition, although a great deal is known about certain situational variables that are likely to elicit aggression, very little is known about which personality variables are related to aggression (Bushman, 1996). Feshbach (1970) stated that aggression is difficult to relate to personality because no single cluster of traits describes the aggressive person. Finally, Bushman (1996) wrote that one possible reason for the lack of interest in personality variables in aggression research is the dearth of congruent theories of aggression within which personality constructs can be placed.

Some attempts to relate personality and aggression have been made. Johnson (1972) wrote that one way to apply personality to aggressive behavior is to label different character types. Zuckerman, Kuhlman, Joireman, Teta, and Kraft (1993) compared the major factors from three models of personality. They found that one of their factors, aggression-hostility, was a personality factor separate from anxiety, with which it previously had been grouped by Costa and McCrae (1992). The aggression-hostility factor contained items that described a readiness to express verbal aggression and items concerning rude, thoughtless, or antisocial behavior. Another study (Tomori, 1994) attempted to determine the personality characteristics of adolescents with alcoholic parents which distinguish them from adolescents from nonalcoholic families. The results suggested that adolescents from alcoholic families scored higher on the type of aggression that leads to conflicts. Emmerich (1965) investigated the stability of

had college students, who were classified by a self-report personality measure as being either high or low in trait aggressiveness, provide similarity ratings for word pairs. Some of the word pairs had clear aggressive connotations while others had ambiguous connotations. The results supported his hypothesis that aggressive people have more developed aggressive cognitive-associative networks than nonaggressive individuals. The associations among aggressive words and the associations between aggressive and ambiguous words were stronger for high-trait aggressive individuals than for low-trait aggressive individuals. Therefore, aggressive personality variables do seem to play a role in Berkowitz's cognitive neo-associationist aggression model.

In his second experiment, Bushman (1996) hypothesized that individuals who were afraid of becoming the victims of aggression consider aggressive and ambiguous constructs as being both aggressive and frightening, while likely perpetrators of aggression consider aggressive and ambiguous constructs aggressive but not frightening. In this study, college students completed individual difference measures of trait aggressiveness and aggression anxiety. These students rated the words used in the first experiment by deciding how aggressive and frightening the words were. The results indicated that individuals who were afraid of becoming the victims of aggression did judge the stimulus words to be both aggressive and frightening. Additionally, aggressiveness and frightfulness ratings were significantly higher for women than for men. The results also supported the notion that likely perpetrators of aggression would judge the stimulus words to be aggressive but not frightening.

Gustafson (1986) performed an experiment in order to test whether aggressive cues are necessary or sufficient causes of aggression. The results indicated that aggression is increased as a function of frustration if high levels of frustration are present, and the participant is exposed to aggressive cues. In the study, only the participants who were exposed to aggressive cues increased their aggression. The author argued that, at the levels of frustration used, aggressive cues are necessary, not merely sufficient causes of aggression.

Carlson, Marcus-Newhall, and Miller (1990) reviewed the literature in order to assess the reliability of any tendency of weapons and other cues to increase aggressiveness. The results of Carlson et al.'s meta-analysis indicated that the presence of negative or aggressive cues generally enhanced aggressiveness among individuals. Results also indicated that an individual whose name had previously been paired with an unpleasant outcome or with an aggressive encounter also had become a target of aggression for the participants. However, among the entire set of instances featuring only weapons as cues, a nonsignificant effect-size value was obtained. The authors explained that these results occurred because of the opposing effects of weapons among two different types of participants. For participants whose hypothesis awareness or evaluation apprehension was elevated by experimental manipulation or by natural occurrence, as determined by a post-session interview, the presence of weapons tended to inhibit aggression. On the other hand, with less suspicious or nonapprehensive participants, the presence of weapons enhanced the aggression.

“Vengeance” on it led to significantly more honking than the average of the other two levels of aggressive stimulation.

Tannenbaum (1971) used weapons pictures, which were inserted into a movie with erotic content. All participants were angered by a confederate and then allowed to shock their frustrator. They had previously viewed one out of four erotic movies, which had varying content: (1) aggressive commentary and portrayal of weapons in a film, (2) aggressive commentary only, (3) erotic commentary only, or (4) no commentary or weapons portrayal. The movie with the aggressive comments and the visual display of weapons led to the highest intensity of shocks delivered by participants to their partner.

Fischer, Kelm, and Rose (1969) performed a study in order to explore knives as aggressive cues. They used three kinds of knives: (1) a switchblade knife, considered to have a high aggressive cue value, (2) a carving knife, considered to have a high or low aggressive cue value, and (3) a table knife, considered to have a low aggressive cue value. The participants were then asked to evaluate an innocent peer. The authors expected that frustration in the presence of high aggressive cues, the switchblade and possibly the carving knife, would lead to more intense aggression than would frustration in the presence of neutral objects. The results showed that for frustrated males the table knife elicited the most negative evaluations of the peer, and for frustrated females none of the knife conditions elicited more negative evaluations than did the control condition. For frustrated male subjects in the presence of a switchblade knife there was an increase in hostility.

The literature on aggression cues seems to be conflicting. Berkowitz and LePage (1967) and Frodi (1975) found that angered participants delivered more electric shocks and shocks of longer duration to their frustrator in the presence of a gun than did angered subjects in the presence of neutral or no objects. On the other hand, Buss et al. (1972) and Ellis et al. (1971) found that the presence of weapons in the shock situation did not increase aggression. Fischer et al. (1969) found that, for frustrated male participants, the presence of a switchblade knife did increase aggression. Additionally, Turner et al. (1975) and Tannenbaum (1971) found that the presence of weapon's or pictures of weapons also increased aggression.

Turner, Simons, Berkowitz, and Frodi (1977) suggested one possible reason for some of these conflicting results. They stated that individual differences might influence the type of reaction to the weapon. The sight of weapons might stimulate in some people feelings of anxiety or danger, rather than aggression, which could lead them to inhibit their aggressive responses. Fraczek and Macauley (1971) stated that an individual's reaction to stimuli in their environment might depend on the emotional character of the stimuli derived from the individual's previous learning experiences. They believed that highly emotional individuals would be likely to inhibit aggressive reactions to weapons. They pretested males on a word association test and rated the word associations for their level of emotionality. The male participants were then classified as either high or low in emotionality. The males then participated in a weapons study in which all of them were angered and half of them were exposed to weapons. Results showed that only those males who had low emotionality responses to the aggressive words in the word

association test responded with increased aggressive tendencies. The authors hypothesized that the aggressive responses to weapons were marked in the highly emotional subjects by strong restraints produced by their anxiety.

Because of the conflicting results of these studies, the implications for deadly force decision-making scenarios are hard to pinpoint. If the presence of a weapon does increase aggression (Berkowitz & LePage, 1967; Fischer et al., 1969; Frodi, 1975; Turner et al., 1975; Tannenbaum, 1971), then an officer would be more ready to make the decision to shoot if assailants have a weapon in hand. Because the presence of a weapon held by the assailant means greater danger to the officer and others, one would assume that the potential for the officer to shoot would increase in order to protect the officer or others. This might be viewed as instrumental aggression. However, there is another way to view an officer's potential to shoot, in addition to the safety aspect of the situation. Related to some of the aggression cue study findings, officers might shoot because the weapon increases their level of aggression or anger at the assailant. This may be viewed as hostile aggression.

Deadly Force Decision Making

Alpert and Fridell (1992) defined deadly force as "such force readily capable of, or likely to cause, death or serious bodily harm " (p. 12). The use of deadly force is an act of aggression and needs to be monitored by administrators. Police administrators must make sure that if an officer uses a firearm, the officer uses it in a correct manner. A police officer's decision to shoot may be influenced by a number of factors (Brown, 1984). Some of these factors are situational characteristics, such as the type of crime

being committed, the race of the perpetrator, and the weapon, or lack thereof, held by the perpetrator. Other factors deal with internal characteristics of the officer, such as the officer's personality type, the officer's age and level of education, the environment in which the officer was raised, and the training received by the officer.

Brown (1984) described four steps which comprise the developmental process that may lead to the use of deadly force: (1) anticipation, which refers to the nature of the situation and the officer's reaction to it; (2) entry, which refers to the observations made by the officer when he or she first enters a situation; (3) information exchange, which consists of what occurs in the form of verbal, nonverbal, or symbolic communication between the officers and other parties involved; and (4) the final decision to resort to violence.

The use of deadly force has been conceptualized as including two fundamental issues: (1) the distinction between a reasonable and a correct decision, and (2) that the final decision of whether or not to shoot is the endpoint of a series of decisions (Binder & Scharf, 1982). Binder and Scharf stressed that the decision of whether or not to shoot is deemed correct or incorrect on the basis of the outcome. On the other hand, the decision is considered reasonable or unreasonable based on the information that is available to the officer at the time the decision is made. Obviously, officers do not have the knowledge of whether or not their decisions are correct as they decide if they should shoot. The officers can only have the knowledge of whether or not their decisions are reasonable at that time.

Brown (1984) administered a survey to police officers in order to test a hypothesis that shootings by officers are situationally motivated and justified according to the circumstances. He attempted to assess under what circumstances police officers consider the use of a firearm appropriate. A questionnaire was administered to the officers who were asked to rate the appropriateness of the hypothetical police officer's actions in each scenario. Brown found that a high degree of agreement among officers exists as to the appropriateness of a shooting situation. Brown stated that his findings suggest that shootings by police tend to be caused by the surrounding circumstances. He also found that the race of the shooting victim had no apparent impact on the rater's attitude as to the appropriateness of the shooting.

Dwyer et al. (1990) applied cognitive script theory to the deadly force decision making process. They distinguished between two different categories of scripts that are relevant to an officer's use of deadly force. The authors called one category the social situation script, which supplies the implied knowledge for interpreting the meaning of activities that may involve criminal activity. They stated that the content of each of these scripts has some relevance to an officer's use of deadly force; even though the participants and parameters differ from script to script. The other category of scripts relevant to deadly force was called the deadly force script. The authors stated that this script reflects the training and decision strategies that officers have about drawing their weapons, pointing them, and firing them.

Dwyer et. al (1990) presented officers with several scenarios; they were asked to read each and indicate the action they would take in the situation. The officers also were

adequate in the dangerous situations faced by police officers, and they must be allowed to use discretion in these situations (Holzworth & Pipping, 1985).

Public Perception of Use of Deadly Force

Geller (1982) stated that the use of deadly force by police affects public attitudes toward the police. Oftentimes, people learn inaccurate information about the deadly force encounter and form opinions based on that information. The public's reaction to the use of deadly force has focused on the rights of the shooting victims and has favored reform (Alpert & Fridell, 1992). Geller (1988) questioned whether the restriction of police use of deadly force would put the lives of the police officers and the public in even more danger. On the other hand, Geller also questioned whether the lives of the police and the public would be endangered if the rules governing the use of deadly force are too lax, and shootings that many perceive as discriminatory and excessive are permitted. This endangerment to both public and police might occur because community cooperation necessary for effective police work would be discouraged.

Geller (1988) also stated that American police shoot an estimated 3,600 people each year. How one regards this number is relative, and the backdrop against which this figure is interpreted becomes very important. Geller suggested that one might compare this figure to the number of serious offenders encountered annually by America's police. The average American police officer will go through his or her 20-year career without even firing his or her gun except in target practice. When looking at this comparison, the 3,600 people shot at each year might not look like such a great number.

Witkin, Gest, and Friedman (1990) stated that today's police officers are under more scrutiny than were their predecessors. They reported that today, more than 75 percent of the major metropolitan police departments have some sort of civilian review agency. Part of this scrutiny is based on a departmental desire to head off lawsuits against the police. This relatively new level of scrutiny is in contrast to a public view of police deadly force as described in a statement by Sherman in 1978. He wrote:

For all the concern in this country about capital punishment, there has been a surprising lack of concern with what is the most frequent means by which the state takes a life. The concern for execution after trial has made us almost blind to execution before trial, even though for as far back as we have records on the subject, executions before trial have been far more common. (p. 9)

It seems as if in the 18 years that have passed since Sherman wrote the above quote, more attention has been paid to police use of deadly force by the public.

Dangers of Police Work

The dangers involved in police work can influence officers' decisions of whether or not to shoot. If officers believe they are in constant danger, they may be more apt to use deadly force. Police work involves substantial hazards, especially in America where the public use of firearms is so prevalent. Because of the hazards involved, police safety becomes very important. The rights of the citizens to be safe from police deadly force need to be balanced with the rights of officers to be safe while protecting these citizens. Geller (1988) described a study of British and American police officers from the years 1946 to 1966. Over 1000 American officers were killed, while only 10 of the British officers were killed. However, another point made by Geller is that, while the police must use deadly force to protect themselves from the public, many situations also arise

where officers have been shot by one of their own. The need to protect officers by using deadly force appears to have become its own danger to officers in the line of duty.

Although police officers often face a wide variety of dangerous situations, none of these situations is more potentially life threatening or fear evoking than facing a criminal armed with a gun (Little & Boylen, 1990). Assaultants who murder police officers are more likely to use a firearm than any other type of weapon (Little, 1984). Little and Boylen analyzed the number of handguns that were confiscated by a major southeastern city's police department during the years 1976-1986. They found that from a total of 4,254 firearms confiscated, the majority consisted of handguns, with shotguns and rifles following far behind. Witkin et al. (1990) stated that a recent New York City study showed that instances of officers being fired upon without returning fire rose from 33 in 1981 to 76 in 1989.

Cullen, Link, Travis III, and Lemming (1983) performed a study in order to explore whether police officers actually perceived their occupation to be dangerous. They found that certain paradoxes existed. Police officers saw their job as being both safe and unsafe. This paradox stemmed from an officer's perception of how much injury is actually sustained as opposed to the potential for harm which is inherent in an officer's work. While the officers in the study were aware that physical harm occurred only on occasion to those with whom they worked, they were also aware that the potential for injury was a reality that all officers must face and that they were employed in an occupation that caused them to enter situations in which harm could occur. The other paradox that these researchers discovered was that, while the officers needed to be

that these officer characteristics play a causal role in these deadly force situations (Geller and Scott, 1992).

Geller and Scott (1992) also stated that almost all of the studies that have examined the race of the civilians involved in deadly force situations have found that a disproportionate number of African-Americans are shot, even when correcting for their relative frequency in the population. This is obviously a concern for citizens and researchers alike. Therefore, certain researchers have focused on these statistics and have attempted to find explanations for their existence.

Race of officer. Results of research regarding an officer's race seem to be ambiguous. Sherman (1980) reviewed some of the literature on officer race. He discussed a study by Friedrich (1977) which reported that African-American officers in three large cities in 1966 patrolled more aggressively, initiated more citizen contacts, and reported crime reports more often than Caucasian officers. The African-American officers also made more arrests than the Caucasian officers. Both African-American officers and Caucasian officers were more likely to arrest an African-American suspect than a Caucasian suspect.

Cohen and Chaiken (1972) found that African-American officers hired in New York in 1957 received the same number of citizen complaints throughout their careers as did Caucasian officers. However, Reiss (1972) found that African-American officers in 1966 used unjustified force more often than Caucasian officers against both races, but especially against African-American citizens.

population figures. He stated that African-Americans have been found to be 3.8 times as likely as Caucasians to be shot by police in Chicago, 6 times as likely in New York City, and 7 times as likely nationally during several years in the 1950s.

Powell (1981) performed a study in order to assess the implementation of discretionary decision making among five adjacent police agencies where there had previously been no policy guidelines. He specifically attempted to look at the effects of race on the application of discretion. He found that officers took more punitive measures against African-American offenders than Caucasian offenders. For the offense of speeding, the police were one and a half times more punitive toward African-Americans than toward Caucasians. For public intoxication, officers were almost two and a half times more punitive toward African-Americans. The only area in which the police were more punitive against Caucasians was domestic violence. However, this difference in discretion was the smallest discovered. As with the studies on race of officer, the results of studies on race of shooting victim appear to be ambiguous. Again, the area on which the research is focused may serve as an explanation for the ambiguity.

Police use of deadly force affects the public's attitude toward the police (Geller, 1982) and puts officers in situations where they must make quick decisions. Officers face a wide variety of dangerous situations. However, none of these situations is more potentially life threatening or fear evoking than facing a criminal armed with a gun (Little & Boylen, 1990). Characteristics, such as race of both officers and victims involved in deadly force situations have been inspected. Questions have arisen as to whether officers with particular characteristics have a special inclination for violence.

TABP and Aggression

In most of the studies involving TABP and aggression, Type A individuals have been found to be more aggressive than Type B individuals, and aggressiveness is one of the defining characteristics of TABP. Edguer and Janisse (1994) attempted to determine whether or not Type A individuals would continue to behave aggressively under conditions of retaliatory conflict. Their study involved a subject and confederate playing the roles of a teacher and a learner. Subjects were randomly assigned to one of four conditions, involving combinations of provocation and conflict. The subject was allowed to administer feedback to the confederate in the form of noise. The results of this study did not provide any support for the hypothesized higher aggression of Type A individuals. However, the Type A participants did report more negative affect than the Type B participants did.

Edguer and Janisse's results (1994) also indicated that Type A individuals were more aroused in comparison to the Type B individuals. The authors offered several explanations for this increased arousal. One of these explanations is that Type A individuals may be more physiologically reactive than Type B individuals. Another explanation they offered was that Type A individuals tend to exhibit greater physiological reactivity in situations where there is a challenge or an ego threat.

Carver and Glass (1978) attempted to show that the aggressiveness component of TABP is elicited when the individual with TABP is challenged by certain environmental circumstances. They found that prior task frustration led individuals with TABP to administer higher levels of shock to confederates whom they were teaching. However,

prior task frustration had no reliable effect on the shock levels chosen by TBBP individuals. The TABP and TBBP individuals did not differ in chosen shock level when they were not frustrated prior to the teaching stage of the experiment. In a second study, Carver and Glass (1978) found that interpersonal harassment by the confederate did not elevate aggression above the level reached by the prior task frustration alone. Strube, Turner, Cerro, Stevens, and Hinchey (1984) pointed out that these results were important because they demonstrated that TABP individuals can be more aggressive than TBBP individuals. However, the results did not draw a clear picture of the nature of the aggression.

Two studies which did look at the nature of the aggression were performed by Strube et al. (1984) who investigated the theoretical distinction between hostile aggression and instrumental aggression and examined the practical implications of the distinction. As Feshbach (1964) described, hostile aggression occurs in response to anger-inducing conditions where the aggressor's goal is to make the victim suffer. An officer's use of deadly force may be viewed as hostile aggression if the officer is acting out of anger toward the victim. On the other hand, Feshbach described instrumental aggression as that which begins with competition or the desire for some object or status possessed by another person. Reber (1985) added that it could also be viewed as an act that is a means to another end. Officers may view the use of deadly force as an act of instrumental aggression because they believe they are using deadly force in order to prevent danger to themselves or others.

Strube et. al's (1984) first study was an attempt to clarify the hostile and instrumental components of Type A aggression. In this study, the authors used a modified version of the Buss (1961) procedure so that they could isolate hostile motivation from instrumental motivation in Type A aggression. Participants in the study were joined by a confederate and were told that they were partaking in a learning project. They were also instructed to reward the confederates, or learners, if they performed correctly and to fine them for incorrect performances. In certain feedback conditions, the learners could be fined, but the fines would not serve to help them master the concepts.

The results of Strube et. al's (1984) study suggested that the form of Type A aggression was essentially hostile versus instrumental, in the sense that fines were often given, even though the confederates did not benefit by learning from them. They also indicated that the Type A participants used greater fines, in the modified version of the Buss teacher-learner procedure, than did the Type B participants, but only in the condition in which fines could not help the confederate learn the concept. The authors hypothesized that greater aggression by Type A individuals appeared to be an emotional response to the disagreeable conditions evoked by control loss. They also stated that, in situations where an individual perceived an instrumental or controlling response not to exist, Type A individuals would be expected to exhibit more hostile, injurious behavior than Type B individuals. Therefore, in situations where Type A individuals did not feel that they were in control of the situation, they might be more likely to use deadly force in a hostile manner, acting out of anger toward the victim, than might Type B individuals.

The second study performed by Strube et al. (1984) examined intrafamily violence and the representation of Type A and Type B individuals among perpetrators. The authors hypothesized that if violence within the family is primarily hostile in nature, then individuals with TABP would engage in such acts more frequently than Type B individuals. The authors stated that both the frequency and magnitude of domestic abuse suggest that its intent is the harm or injury of the victim, a component of hostile aggression. The results of the study indicated that Type A individuals were more likely than Type B individuals to display severely violent behavior. Additionally, the Type A individuals were found less likely to be victims of intrafamily violence than Type B individuals. According to Strube et. al, these findings suggested that a lack of control may be an important characteristic of domestic violence for both perpetrators and victims. When faced with a lack of control, Type A individuals may exhibit more hostility than Type B individuals. However, the lack of control over the situation may make Type A individuals less tolerant than Type B individuals and therefore more likely to terminate the abusive relationship. The authors did warn that these studies were correlational in nature and therefore did not permit causal conclusions to be made.

In an experiment performed to determine whether Type A individuals were more interpersonally aggressive than Type B individuals and to see if interpersonal anger influenced this aggression, Holmes and Will (1985) administered a problem-solving task to participants, who were either angered or not angered by a confederate. The results showed that the anger manipulation by the confederate was effective in increasing the participant's arousal, as measured by blood pressure. In the anger condition, there was no

difference between the levels of punishment given by the Type A and Type B participants. However, in the no-anger condition, the Type A participants gave the confederate higher levels of punishment, in the form of aversive noise, than did the Type B participants. There was no significant difference between the Type A and Type B participants with regard to the levels of reward they gave the confederate.

Holmes and Will (1985) stated that the higher levels of punishment given by the participants with TABP reflected their higher levels of aggression rather than an attempt to get the confederate to learn the task well. The authors hypothesized that in the anger condition, the Type A participants may have become more self-critical, internalizing the blame for the poor performance, and therefore behaved less aggressively toward the confederate. Certain studies indicate that individuals with TABP may react more aggressively under stress than individuals with TBBP. Type A individuals may also have more difficulty dealing with stress than Type B individuals. Therefore, it is important to next look at TABP and stress.

TABP and Stress

When in a deadly force situation, officers are under much stress. Pittner and Houston (1980) intended to inspect two differing hypotheses regarding stress and TABP. The first of these hypotheses was suggested by a number of studies, including one done by Dembroski, MacDougall, Herd, and Shields (1979). This study found that greater psychological challenge or threat would cause greater differences in psychophysical arousal between individuals with TABP and those with TBBP. Manuck and Garland (1979) advanced the opposing hypothesis, which Pittner and Houston also wanted to

inspect. They argued that the differences in arousal between individuals with TABP and those with TBBP might actually be more pronounced under low stress conditions. Under these conditions, individuals with TBBP may respond with reduced effort, but individuals with TABP may keep on responding to the limit of their capacities.

The Pittner and Houston (1980) study investigated these possible differences in the Type A and Type B individuals' response to stress. Results of their study indicated that Type A individuals responded to tasks that had been presented as being important with greater physiological arousal than did Type B individuals. However, even though they may have tried harder, the individuals with TABP did not actually perform better on the tasks. Differences in measures of sympathetic nervous system arousal also were observed between the Type A and Type B individuals in response to a psychological threat but not in response to a physical threat. The differences in physiological arousal between Type A and Type B individuals were more pronounced under high stress than under low stress, contrary to Manuck and Garland's hypothesis (1979). Finally, the results from this study (Pittner & Houston, 1980) showed that Type A individuals cognitively coped differently with the stressful situations than did the Type B individuals. The Type A individuals seemed to have used more suppression in both the physical and psychological threat conditions and more denial in the threat to self-esteem condition.

Pittner, Houston, and Spiridigliozzi (1983) performed another study in order to examine the differences in physiological response of Type A and Type B individuals to conditions that varied in controllability over an aversive event. The results showed that in the consistent control condition, in which participants were told that they might or

might not receive a shock after every mistake they made but could avoid any shock by not making a mistake, Type A compared to Type B participants were significantly higher on diastolic blood pressure and pulse rate. The authors stated that this finding was compatible with Glass's (1977) theory of TABP. Type A individuals are more threatened by potential loss of control over stressful events than are individuals with TBBP.

One study (Lamude & Scudder, 1992) focused upon the relationship between control-related conflict strategies and TABP. These authors stated that Type A individuals encounter personal stress as a result of their unrealistic need for control. Their results suggested that a strategy of combative, less flexible, and aggressive management of conflict was strongly related to TABP. In addition, strategies such as accommodation and compromise were negatively associated with TABP.

Kirmeyer and Diamond (1985) did a study in which police officers, identified as TABP or TBBP, were interviewed and given questionnaires in order to assess their appraisal of everyday stressful events and their coping methods. The authors found that the Type A and Type B participants appraised and coped with role stress in different manners. The Type A participants' situational appraisal was more aggressive than that of the Type B participants. Similar differences were found in the coping strategies of these two groups.

All of the above studies seem to indicate that Type A individuals have a more difficult time coping with stressful situations than do Type B individuals. The ability to cope with stress is very important when it comes to a deadly force situation, which is a very stressful event. Not only do Type A individuals cope differently with stress, they

also perform certain tasks differently than do Type B individuals. It is therefore important to look at the relationship between TABP and performance.

TABP and Performance

Much research has been done with Type A individuals regarding their performance on certain tasks. In fact, most of the experimental studies of Type A and Type B individuals, as defined by the Jenkins Activity Survey, involve the performance outcomes of tasks completed by college undergraduates. In general, the outcomes of these studies point to a theory of superior performance by Type A individuals on tasks that require speed and persistence, which is consistent with the achievement-striving aspect of TABP. These studies also highlight a poorer performance of Type A individuals on tasks that require slow work, which is consistent with the time urgency and impatience of Type A individuals (Matthews, 1982).

TABP and work performance. Investigators have looked at the relationship between TABP and work performance, with much of the previous data suggesting that the effect of TABP depended on the task actually being performed. Barling and Boswell (1995) attempted to clarify the relationship between TABP and work performance. These authors conceptualized TABP as two separate components, achievement strivings (AS) and impatience-irritability (II). The AS component reflects the need for an individual to be the best at everything he or she does, and the II component reflects the need for an individual to accomplish more and more in as little time as possible. This attempt to do more is often done in an angry, hostile manner. Barling and Boswell administered a 14-item scale to 161 administrative members of the Canadian Armed

Forces. They found that the AS component of TABP was directly associated with performance through its positive effect on concentration, but that the II component was not.

Kirmeyer and Biggers (1988) examined whether Type A tendencies predicted employee differences in work demands and productivity. They hypothesized that the work activities of Type A individuals would be more likely to be initiated internally rather than externally and that Type A individuals would be more productive. They found that Type A individuals received more externally imposed demands from superiors and peers than Type B individuals, but in support of the hypothesis, the Type A individuals also initiated more work tasks for themselves and performed multiple tasks. Also in support of their hypothesis, the authors found that the individuals with TABP were more productive than Type B individuals. Additionally, they found that Type A individuals created conditions likely to evoke a driven, time-urgent, and impatient behavioral style.

TABP and attention. The aspect of attention also plays a role in a Type A individual's ability to perform. With respect to the relationship between TABP and attention, the data seem to indicate that Type A individuals filter out extraneous peripheral stimuli and distracting internal cues while remaining focused on the task at hand (Perry & Laurie, 1992). At first glance, the ability to filter out peripheral cues seems to indicate that Type A officers would be able to focus better on the potential perpetrator while making a deadly force decision. However, the ability of Type A officers to decide whether a threat to their well-being exists may be impaired if they

remain solely focused on one aspect of the situation. Depending on the situation, environmental cues which warn of danger, or which indicate that the situation is not threatening, may be missed by a Type A officer, who could have difficulty focusing on the peripheral environment of the situation.

Perry and Laurie (1992) attempted to examine the ability of individuals with TABP and with TBBP to sustain attention during a vigilance task. The results indicated that the Type A individuals' ability to sustain attention to a task for a prolonged period of time was superior to that of the Type B individuals. The authors stated that the results were consistent with a report by Price (1982) that individuals with TABP are hyperalert in relation to individuals with TBBP.

Matthews and Brunson (1979) conducted three studies to evaluate the attentional style of individuals with TABP. The results of the first study indicated that Type A individuals focused their attention on central tasks, paying less attention to peripheral tasks than did Type B individuals. In the second and third studies, the authors found that the individuals with TABP actually performed better in the presence of a distraction than when the distraction was absent.

In a study based on that of Matthews and Brunson (1979), Humphries, Carver, and Neumann (1983) investigated the hypothesis that Type A individuals should be more attentive to frequently occurring properties, because of their centrality in the developing category definition, and pay less attention to rarely occurring properties. The results indicated that under some circumstances, Type A individuals tended to differ from Type B individuals in the way they formed mental representations of categories. The Type A

individuals did tend to focus on more frequently occurring properties than on the properties that appeared less often. The results also suggested that the Type A behavior was elicited from those individuals only under conditions of moderate and high challenge. The differences between the individuals with TABP and those with TBBP were only evident when the TABP was confronted with suitably challenging circumstances.

Ben-Zur and Wardi (1994) explored the relationship between TABP and decision making strategies. The authors hypothesized that Type A individuals would use a unidimensional decision making strategy rather than the compensatory one. This would purport that Type A individuals would focus on the most important dimension in the problem, meaning an avoidance of errors that could arise from random processing. Their findings suggested that the Type A individuals had an ability to focus on the important dimensions of a problem, which helped them to perform more quickly than Type B individuals and also helped them to avoid errors which could result from hasty judgments. Their results also supported the notion that time urgency was a basic component of TABP.

Zelson and Simons (1986) used a psycho-physiological model to more directly assess the degree to which individuals with TABP actively inhibited their attention to peripheral, task-irrelevant stimuli. They manipulated the level of task difficulty in order to provide situational challenge to the subjects. The participants' eyeblinks were measured during task performance. Results indicated that Type A individuals did inhibit their attention to task-irrelevant, peripheral stimuli.

Bermudez, Terez-Garcia, and Sanchez-Elvira (1990) attempted to analyze the use made by individuals with TABP of their available attentional resources. The authors did not find that Type A individuals ignored the peripheral information and concentrated on the central information in all of the tasks, as has been found to occur in other studies (Humphries et al., 1983, Matthews & Brunson, 1979, Perry & Laurie, 1992). They hypothesized that the Type A individuals increased their attention on the central demands when they perceived some degree of personal challenge in the situation. However, their results did show that the Type A individuals performed better than the Type B individuals mainly when the level of task difficulty was high and the level of stress was low.

TABP and time pressure. When looking at TABP and attention, the notion of time pressure often arises. Officers in a deadly force situation are not only under much stress but also under great time pressure. They have only a very short time in which to make the decision of whether or not to shoot. Bingham and Hailey (1989) suggested that because Type A individuals exhibit impatient and hurried behavior, their sense of time urgency might be affected. TABP is partially defined by a heightened sense of time urgency (Gastorf, 1980; Landy, Rastegary, Thayer, & Colvin, 1991). In tasks in which slow responding was required (Glass, Snyder, & Hollis, 1974), Type A individuals' performances were inferior to those of Type B individuals. Bingham and Hailey hypothesized that the performance of Type A individuals would suffer under a time-pressured situation, specifically when performing anagram tasks. The authors found that the Type A individuals made more errors than the Type B individuals when under time

pressure, but these differences were not evident when they performed under no time pressure.

Burnam, Pennebaker, and Glass (1975) performed an experiment to investigate time urgency in Type A individuals. Their results indicated that Type A individuals became impatient with delay because they perceived time as passing slowly. They also reported a specific time interval as having elapsed sooner than did the Type B individuals. The authors reported that their data also supported the hypothesis that Type A individuals would become more impatient than Type B individuals when they were required to slow down while performing a task.

Yarnold and Grimm (1982) also investigated the differences between Type A and Type B individuals regarding their perception of time intervals and their levels of impatience. Their results supported the hypothesis that individuals with TABP were more impatient than were Type B individuals. Type A individuals attempted to achieve the most work possible in the shortest period of time. The authors believed that their findings were also consistent with the hypothesis that Type A individuals set higher standards for the production of quantity than did Type B individuals.

With regard to TABP and performance, it appears that Type A individuals tend to have superior performance on tasks that require speed and persistence and a poorer performance on tasks that require slow work than do Type B individuals. Type A individuals also appear to be more impatient than Type B individuals. However, individuals with TABP do exhibit the ability to filter out extraneous peripheral stimuli while focusing on the important dimensions of a problem.

TABP and deadly force decision making. Certain factors that are typical of a Type A individual may affect the individual's ability to make a correct deadly force decision. Carver and Glass (1978) found that prior task frustration led Type A individuals to administer higher levels of shock to confederates whom they were teaching than did Type B individuals. Strube et al. (1984) suggested that the form of Type A aggression is hostile, rather than instrumental, indicating that the Type A participants were punishing the confederates even when punishment could not help them learn the concept. Strube et al. also looked at intrafamily violence and suggested that Type A individuals were more likely than Type B individuals to display severely violent behavior. Therefore, this literature seems to suggest that the higher level of aggression in Type A individuals is hostile in nature.

A third type of TABP literature that seems to relate to a Type A individual's ability to make correct deadly force decisions has to do with the Type A individual's ability to focus on the central task, and not be distracted by peripheral items (Ben-Zur & Wardi, 1994; Humphries et al., 1983; Matthews & Brunson, 1979; Perry & Laurie, 1992; Zelson & Simons, 1986). At first glance, it would seem that this information would help Type A individuals to focus on the scenario better than the Type B individuals. However, depending on the environment of the scenario, danger may be located in areas other than the central figure. This literature suggests that the Type A individual may have difficulty focusing on the peripheral environment of the scenario, where danger may be lurking, or where cues exist that indicate the situation is not threatening. The literature also suggests that Type A individuals become aroused more quickly than the

Type B individuals and that a heightened sense of time urgency is one of the defining characteristics of TABP.

The Current Study

The proposed study was designed to determine the nature of the relationship between TABP and the frequency and speed of deadly force decisions. The current study hypothesized that TABP would correlate positively with both the speed and frequency of deadly force decisions. In other words, it hypothesized that Type A participants would be more prone to shoot the actor in the scenario than Type B participants and that Type A participants would tend to shoot more quickly than Type B participants.

As the individual makes that split-second decision of whether or not to shoot, he or she must be able to cognitively analyze many environmental cues. TABP includes many behavioral predispositions that can potentially affect an individual's ability to make a correct split-second decision. Research on the relationship between TABP and deadly force decision making is a new area. However, some research has been done with TABP that is pertinent to deadly force decision making, especially concerning TABP and arousal, TABP and a time-urgent, impatient behavioral style, TABP and aggression, and TABP and attention.

The literature regarding higher levels of aggression in Type A individuals than Type B individuals (Carver & Glass, 1978; Holmes & Will, 1985) and that the form of Type A aggression is hostile rather than instrumental (Strube et al., 1984) seems to support the first hypothesis, which suggested that Type A participants would be more prone to shoot the actor in the scenario than would Type B participants. Also supporting

this hypothesis is the literature regarding a Type A individual's ability to focus on the central task and not be distracted by peripheral items (Ben-Zur & Wardi, 1994; Humphries et al., 1983; Matthews & Brunson, 1979; Perry & Laurie, 1992; Zelson & Simons, 1986). The ability of Type A individuals to focus on cues indicating whether there is a threat to the officer's well-being may be impaired if the Type A individual remains solely focused upon one aspect of the scenario. The participants in the current study, who did not keep an eye on the whole scene, may have been surprised by the peripheral stimuli and reacted by shooting.

Certain areas of literature seem to support the second hypothesis, that Type A participants would tend to shoot more quickly than would Type B participants. The first area of literature pertains to the more aroused state of Type A individuals when under stress than Type B individuals (Edguer & Janisse, 1994; Pittner & Houston, 1979). The other two areas deal with Type A individuals' heightened sense of time-urgency (Bingham & Hailey, 1989; Burnam et al., 1975; Gastorf, 1980; Kirmeyer & Biggers, 1988; Landy et al., 1991) and their being more impatient than Type B individuals (Yarnold & Grimm, 1982). This literature suggests that in the deadly force decision-making task, a Type A participant would be more likely to shoot quickly, without thinking the situation through, than would a Type B participant.

CHAPTER II

METHOD

Participants

The participants included 36 male and 38 female undergraduate students who were fulfilling a research requirement in their introductory psychology class at the University of Dayton. All participants were treated in accordance with the ethical principles of the American Psychological Association (1992).

Measures

Jenkins Activity Survey – Student Version (SJAS)

The Jenkins Activity Survey (JAS) is a widely used self-report measure of TABP (Wright, 1988), affording adequate test-retest reliability (.66 based on a separation of one year; Krantz, Glass, & Snyder, 1974) and predictive and concurrent validity (Jenkins, et al., 1979). The original validation sample for the JAS was approximately 2800 men in the Western Collaborative Group Study (Rosenman, 1978).

The JAS has been adapted for use with a college population (SJAS). The SJAS is a 21-item instrument with three factors: hard-driving/competitive, rapid eating, and rapid speaking (see Appendix A). The SJAS has been thoroughly studied with a wide variety of college-age samples. Using a sample of 4072 undergraduates, the mean total SJAS was 7.77 (SD = 3.25), with whites scoring higher (more Type A) than nonwhites. The

SJAS is scored by assigning a 1 or a 0 to each answer and then adding the numbers together. The scores can range between 0 and 21, with individuals who score above 10 being classified as Type A. The SJAS has been reported to have only fair internal consistency, with alphas that range from .40 to .72, but it does have good stability, with test-retest reliabilities for three months from .74 to .86. (Yarnold, Mueser, Grav, & Grimm, 1986). The SJAS Cronbach's alpha for this study was .65, which is consistent with previously reported alphas.

Aggression Questionnaire (AQ)

The participant's tendency toward verbal and physical aggression, as well as his or her feelings of anger and hostility, was assessed using the Aggression Questionnaire (AQ; Buss & Perry, 1992). Anger and hostility are two constructs often distinguished by the intensity of the emotion and how long it lasts. Anger is a fairly strong emotional reaction but is momentary, while hostility is a long-lasting emotional state characterized by enmity toward others (Reber, 1985).

The AQ (Appendix B) is a 29-item instrument asking individuals to rate how closely each item describes them. Each item is answered on a 5-point scale ranging from 1 (extremely unlike me) to 5 (extremely like me). Replicated factor analyses yielded four aggression subscales: Physical Aggression (an index represented by the sum of items 1, 5, 9, 13, 17, 21, 24, 26, and 28, with a range from 9 to 45); Verbal Aggression (an index represented by the sum of items 2, 6, 10, 14, and 18, with a range from 5 to 25); Anger (an index represented by the sum of items 3, 7, 11, 15, 19, 22, and 29, with a range from 7 to 35); and Hostility (an index represented by the sum of items 4, 8, 12, 16, 20, 23, 25,

and 27, with a range from 8 to 40). Scores from each of the four subscales are then added to form a total aggression score. The total aggression scores can range from 29 to 145. The internal consistency of the four factors and the total score were evaluated by the alpha coefficient. The alphas were as follows: Physical Aggression, .85; Verbal Aggression, .72; Anger, .83; Hostility, .77; and Total Score, .89. The alpha for the total score indicated considerable internal consistency. The test-retest correlations were as follows: Physical Aggression, .80; Verbal Aggression, .76; Anger, .72; Hostility, .72, and Total Score, .80. For scales with a relatively small number of items, these coefficients suggest adequate stability over time (Buss & Perry, 1992). The AQ Total Score Cronbach's alpha for the current study was .83.

State-Trait Anxiety Inventory, Form Y

The State-Trait Anxiety Inventory, Form Y (Spielberger, 1983) was used to assess both the participant's state and trait anxiety. A psychological state is defined as temporal cross sections in a person's life that exist at a given moment in time and at a particular level of intensity (Thorne, 1966; Spielberger, 1983). Spielberger conceptualizes personality traits as relatively enduring differences between individuals in their manner of perceiving the world and in their dispositions to behave in a certain way with predictable regularity.

The state anxiety scale consists of 20 statements that assess how the individual feels at the current moment. Scores on this scale increase in response to physical danger and psychological stress; it has been found to be a sensitive indicator of changes in transitory anxiety experienced by individuals. This scale has also been used extensively

to evaluate the level of anxiety induced by stressful experimental procedures. The trait anxiety scale also consists of 20 statements but measures how individuals generally feel (Spielberger, 1983).

Each item of the State Scale is answered with a number between 1 (not at all) to 4 (very much so), depending on the intensity of the respondent's feelings. The Trait Scale items are answered with a number between 1 (almost never) and 4 (almost always), depending upon the frequency of the respondent's feelings of anxiety. The scoring weights for the anxiety-present items are the same as the numbers on the test form, while the scoring weights for the anxiety absent items are reversed. The scores are added and can range between 20 to 80. The State Scale alphas for a sample of 855 college students were .91 for males and .93 for females, while those for the Trait Scale were .90 for males and .91 for females (Spielberger, 1983). The State Scale- 1st administration Cronbach's alpha for the current study was .90, while the State Scale- 2nd administration Cronbach's alpha was .95. The Trait Scale Cronbach's alpha was .92.

Deadly Force Decision Making Scenario

Participants watched a 1.5 min video dramatization involving a police officer who has to decide whether or not to use deadly force (e.g., fire his gun) in a realistic confrontation with burglary suspects. The video depicted two officers dispatched to the scene of a possible burglary in progress. The scene was set at night on a loading dock behind a warehouse and was filmed in first person perspective, with the viewer placed in the role of one of the officers. As the officers approached the loading dock, a man appeared, backing a dolly of boxes through a door. The man had a handgun stuffed into

the back of his pants. The butt of the gun was clearly visible. The viewer's male partner ordered the man to stop, put his hands in the air, and back up slowly. As the partner removed the gun and handcuffed the first suspect, the camera (viewer) scanned the loading dock. Another man (the second suspect) suddenly leaped from behind a stack of boxes next to the door. The second suspect immediately said, "Don't shoot" and shined a flashlight in the direction of the camera as he was raising his hands in the air. The chrome flashlight was on and clearly identifiable. The second suspect did not move toward the officers, but simply emerged suddenly from behind the boxes.

The video was digitized using Intel's Smart Video Recorder Pro video capture card. It was saved and presented to participants on a multimedia PC with a 17" color monitor. The video clip was edited frame-by-frame using Adobe Premiere v4.0. The video clip was presented using software developed specifically for this study. The software allowed users to start the video clip, but did not allow the clip to be stopped once it began. The mouse cursor took the form of a crosshair and was used by the participants as though they were aiming a weapon.

Procedure

Upon arrival, individual participants were escorted into an experimental room and seated at a computer. Participants were randomly assigned to either the SJAS first or the SJAS second condition. The video player software was started on the participant's machine prior to the participant's arrival. After obtaining informed consent (see Appendix C) half of the participants completed the SJAS and the State-Trait Anxiety Scale (SW), while the other half just completed the SW. The two questionnaires were

presented in random order. The participants then received instructions on how to start the video clip. Participants were asked to play the role of the police officer at the scene.

The following protocol was used:

Everyday, police officers across the country face situations where they must decide whether or not to shoot another person. Although many officers go their entire career without firing their gun, all police officers must be prepared to use their guns to defend themselves, their partners, and others who are in danger from a person who is an immediate and serious threat and who cannot be disabled by other means. Under these circumstances, if the officer fails to shoot the individual, it could result in the injury or death of the officers on the scene or of innocent bystanders. On the other hand, police officers must be extremely careful when discharging their weapons. If they make a mistake and shoot an individual who is not an immediate and serious threat, they may seriously hurt or kill an innocent person.

Thus, whether or not to use deadly force is an important decision that must often be made in a split second. In this study, we would like you to watch a video clip in which you are placed in the position of a police officer. As you will see, the clip is filmed in a “first person” perspective. You and your partner are investigating a possible robbery in progress. Your guns are drawn as you walk around a building and search a loading dock. You must decide whether or not to fire your weapon. Imagine that the mouse pointer is the gun sight and the left mouse button is the trigger. To fire the weapon, simply press the left mouse button.

Please keep in mind that this is not a video game. Although there is no way to simulate in the lab the experience of actually making deadly force decisions, we want you to try to behave the way you normally would if faced with such a situation. The stakes are very high. If you make a mistake, it could result in your own death or in the death of an innocent person.

During the clip, I will leave the room and close the door. I will not be able to determine whether or not you shoot. There is no sound if you click the mouse. All of the data from your session is stored in the computer without your name attached. Thus, we will never be able to connect your name with your decision. Are you ready to begin?

Again, use the mouse pointer as the gun sight. Position it on the image as if you were actually pointing a gun. Wait until I leave the room. When you are ready to

start the clip, click the Play button on the screen. Please do not adjust the volume of the film clip as it is playing. Do you understand?

After introducing the task and instructing participants on the use of the video player software, experimenters left the room and the participants were free to start the video at their own discretion. Participants were instructed to aim with the mouse cursor (crosshairs) and shoot (if necessary) by clicking the left mouse button. The video player software recorded the onset time of the video. If the participant clicked the left mouse button, the program recorded the time of the shot.

After the video clip ended, an experimenter reentered the participant's room. Half of the participants then completed the State Scale, while the other half completed both the SJAS and the State Scale in random order. All participants were then debriefed and dismissed.

CHAPTER III

RESULTS

Overview

The purpose of this study was to investigate the relation between TABP and the decision to use deadly force. TABP was measured by the Student Jenkins Activity Survey (SJAS) which yields scores ranging from 0 (Type B) to 21 (Type A).

Means, standard deviations, and reliability coefficients were computed for all variables, for the total sample, as well as separately for males and females. These results are presented in Tables 1 and 2. All variables appeared normally distributed unless otherwise noted.

SJAS scores in this study ranged from 1 to 15, with a mean score of 7.46 and a standard deviation of 3.31 (see Table 1). The median SJAS score was 7. For females, the mean SJAS score was 6.82, with a standard deviation of 3.30 (see Table 2), and for males, the mean score was 8.14 with a standard deviation of 3.23 (see Table 2). Data collection for this study resulted in only 13 individuals (17.6 %) whose scores fell into the Type A range. However, there is no difference between the mean SJAS score for this study and that reported by Yarnold, Mueser, Grav, & Grimm (1968), $t(4144) = .81, p > .05$. They report a mean of 7.77 compared to this study's mean of 7.46.

Out of the 74 participants, 22 made the decision to shoot. Of these 22, 7 of them (31.8%) fell into the Type A classification (scoring above 10 on the SJAS), while 15 of

Table 1

Means and Standard Deviations of all Participants on the SJAS, TS, SS1, SS2, and AQ

<u>Variable</u>	<u>Mean</u>	<u>SD</u>
Student Jenkins Activity Survey (SJAS)	7.46	3.31
Spielberger State-Trait Anxiety Inventory		
Trait Scale (TS)	37.17	9.36
State Scale: 1st administration (SS1)	32.85	8.26
State Scale: 2nd administration (SS2)	37.70	11.95
Aggression Questionnaire (AQ)	73.04	14.57

N ranged from 68 to 74 for all variables. Possible ranges of scores for each variable are as follows: SJAS = 0 to 21; TS = 20 to 80; SS1 = 20 to 80; SS2 = 20 to 80; AQ = 29 to 145.

Table 2

Means and Standard Deviations of Female and Male Participants

<u>Variable</u>	<u>Females</u>		<u>Males</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Student Jenkins Activity Survey (SJAS)	6.82	3.30	8.14	3.23
Spielberger State-Trait Anxiety Inventory				
Trait Scale (TS)	39.53	10.11	34.61	7.83
State Scale: 1st administration (SS1)	34.03	8.57	31.56	7.84
State Scale: 2nd administration (SS2)	40.76	12.74	34.37	10.19
Aggression Questionnaire (AQ)	73.04	14.80	75.25	14.20

N ranged from 35 to 38 for all variables. Possible ranges of scores for each variable are as follows: SJAS = 0 to 21; TS = 20 to 80; SS1 = 20 to 80; SS2 = 20 to 80; AQ = 29 to 145.

them (68.2%) scored less than 10 on the SJAS. Therefore, 53.8% of the Type A individuals shot, compared to only 24.6% of those not categorized as Type A.

Correlations between shooting decision (SD), or whether or not the participant pulled the trigger, SJAS Score, gender, Aggression Questionnaire scores (AQ), Spielberger Trait Scale (ST), the first administration of the Spielberger State Scale (SS1), and the second administration of the Spielberger State Scale (SS2) were computed. Several significant positive correlations were found. These are presented in Table 3.

A significant positive correlation was found between shooting decision and gender, with males tending to shoot more often than females. Another was found between SJAS scores and Aggression Questionnaire scores, with the more Type A endorsement, the higher the aggression scores. A third significant positive correlation existed between the Spielberger Trait Scale scores and gender, with females having higher trait anxiety scores. A fourth one was found between Spielberger Trait Scale scores and Aggression Questionnaire scores, with the higher the trait anxiety, the higher the aggression scores.

Another significant positive correlation was found between Spielberger State Scale- 1st administration scores and Aggression Questionnaire scores, with the higher the pre-test anxiety levels, the higher the aggression scores. The final one was found between the Spielberger State Scale- 2nd Administration scores and gender, indicating that the females experienced higher anxiety as measured post-test. Other significant correlations pertaining to specific hypotheses will be reported later.

Table 3

Correlations between Shooting Decision (SD) and Various Measures

<u>Variable</u>	<u>SD</u>	<u>SJAS Score</u>	<u>Gender</u>	<u>AQ</u>	<u>TS</u>	<u>SS1</u>	<u>SS2</u>
<u>SD</u>	--	--	--	--	--	--	--
<u>SJAS Score</u>	.21*	--	--	--	--	--	--
<u>Gender</u>	.25*	-.20	--	--	--	--	--
<u>AQ</u>	.09	.25*	-.15	--	--	--	--
<u>Trait Scale</u>	-.13	-.08	.27*	.44**	--	--	--
<u>State Scale1</u>	-.10	.02	.15	.22*	.63**	--	--
<u>State Scale2</u>	.12	-.13	.27*	.18	.53**	.62**	--

* $p < .05$ ** $p < .01$

A significant difference in means was found between the first administration of the Spielberger State Scale and the second administration. A paired-samples t-test indicated that the mean of the second administration of the Spielberger State Scale was significantly higher than the mean of the first administration, $t(69) = 4.31, p < .01$. An analysis of males and females separately found that for each group, the mean of the second administration of the Spielberger State Scale was also significantly higher than the mean of the first administration, with males, $t(32) = 2.06, p < .05$, and females, $t(36) = 3.91, p < .01$.

A step-wise regression analysis, with four predictor variables (SJAS score, AQ score, Gender, and the difference between pre/post State Scale scores) was performed, with the response variable being whether or not the participant shot. Aggression was not a significant predictor of shooting, with gender and the State Scale difference variable being the only significant predictors. A straight regression was performed between the decision to shoot and SJAS score, AQ score, Gender, and the State Scale difference variable, $R = .47$. A step-wise regression was also done with the 22 people who shot, using shottime as the response variable and the same 4 predictor variables. Aggression did not predict shottime by itself or in combination with any other variable. A straight regression with all 4 variables and shottime as response variable yielded a multiple R that was not significant, $p = .91$.

Hypothesis 1

The first hypothesis proposed that TABP would correlate positively with the frequency of deadly force decisions. Specifically, it suggested that individuals who

scored higher on the SJAS would be more likely to shoot in the video scenario than individuals who scored lower. A significant positive correlation was found between SJAS score and shooting decision, $r(73) = .21, p < .05$ (see Table 5). Means of individuals who did not shoot and those who did shoot are represented in Table 4.

Hypothesis 2

The second hypothesis proposed that individuals who scored higher on the SJAS would tend to shoot more quickly than those who scored lower on the SJAS. The computer program recorded the time in seconds that the participant started the video clip and the time the participant pressed the mouse button, if he or she decided to shoot. Shooting time was measured by subtracting the video starting time from the time the mouse button was pressed. Means and correlations of shooting times are reported in Tables 5 and 6, respectively. No significant correlation was found between shooting time and SJAS score, $r(21) = -.04, p > .05$. Six out of the twenty-two participants who shot did so well before the appropriate time in the video. Correlations were calculated with these times removed, but no significant correlation between shooting time and SJAS score was found in this case, $r(15) = .17, p > .05$.

Table 4

Means and Standard Deviations of Participants who did not Shoot and who did Shoot

<u>Variable</u>	<u>Did Not Shoot</u>		<u>Did Shoot</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Student Jenkins Activity Survey (SJAS)	7.02	3.20	8.50	3.41
Spielberger State-Trait Anxiety Inventory				
Trait Scale (TS)	37.90	9.55	35.26	8.79
State Scale: 1st administration (SS1)	33.36	7.86	31.62	9.23
State Scale: 2nd administration (SS2)	36.75	11.00	39.91	13.92
Aggression Questionnaire (AQ)	72.21	14.78	75.00	14.21

N ranged from 22 to 52 for all variables. Possible ranges of scores for each variable are as follows: SJAS = 0 to 21; TS = 20 to 80; SS1 = 20 to 80; SS2 = 20 to 80; AQ = 29 to 145.

Table 5

Means and Standard Deviations of Shot Time*

<u>Group</u>	<u>N</u>	<u>Mean</u>	<u>SD</u>
All Participants	22	146.59	75.56
Males	15	145.20	79.15
Females	7	149.57	73.13

* Shot Time in seconds.

Table 6

Correlations of Shooting Time including all Participants (ST- ALL) & Shooting Time with Times below 180 seconds removed (ST - Part) with Various Measures

<u>Variable</u>	<u>ST - ALL</u>	<u>ST - PART</u>
<u>SJAS Score</u>	-04	.17
<u>Gender</u>	.03	-.11
<u>Trait Scale</u>	-.32	-.44
<u>State Scale1</u>	-.14	-.06
<u>State Scale2</u>	.08	-.03
<u>AQ</u>	-.08	-.28

CHAPTER IV

DISCUSSION

Overview

The present study was conducted in an attempt to test two hypotheses: (1) individuals who score higher on the SJAS (more Type A) will shoot more often in the scenarios than those who score lower on the SJAS (more Type B); and (2) individuals who score higher on the SJAS will tend to shoot more quickly than those who score lower on the SJAS. A discussion of the findings of this study follows.

Decision to Shoot

As proposed by the researcher in the first hypothesis of this study, which dealt with participants' decisions of whether or not to shoot, a small, but significant, positive correlation was found between SJAS score and decision to shoot. In other words, individuals who scored higher on the SJAS, indicating more Type A characteristic endorsement, tended to shoot more often than those who scored lower on the SJAS.

This result extends the research dealing with Type A and aggression. In most of the studies involving TABP and aggression, Type A individuals have been found to be more aggressive than Type B individuals, and aggressiveness is one of the defining characteristics of TABP. Carver and Glass (1978) attempted to show that the aggressiveness component of TABP is elicited when the Type A individual is challenged by certain environmental circumstances. They used prior task frustration in order to test

their hypothesis. In this study, participants were challenged by being told that they were police officers arriving at a possible crime scene and would have to make a split-second decision of whether or not to shoot their weapon. In Carver and Glass's study, the Type A individuals administered higher levels of shock to confederates after being challenged than did Type B individuals. Similarly to those results, in the present study, a higher percentage of the Type A individuals shot after being challenged (53.8%) than the percentage of Type B participants who shot (24.6%), after they were challenged.

Results of the current study indicated that the anxiety levels of both male and female participants were significantly higher after seeing the video scenario. Therefore, the video task can be viewed as a stressful one. Kirmeyer and Diamond's (1985) study with police officers, which found that Type A individuals appraised and coped with stress in a different manner than the Type B participants, indicated that the Type A participants' situational appraisal was more aggressive than that of the Type B participants. As the participants in the current study became more anxious after watching the video, the Type A participants may have coped differently than the Type B individuals, similar to the Kirmeyer and Diamond study, and acted more aggressively by shooting.

The results of the current study also extend the research dealing with Type A individuals' ability to focus on the central task, but not paying attention to peripheral items (Ben-Zur & Wardi, 1994; Humphries et al., 1983; Matthews & Brunson, 1979; Perry & Laurie, 1992; Zelson & Simons, 1986). The ability of Type A individuals to focus on cues indicating whether there is a threat to their well-being may be impaired if the Type A individual remains solely focused upon one aspect of the scenario. In the

video scenario, the central action was occurring with the first suspect who was arrested and being handcuffed. The second suspect jumped out from behind boxes, which were in the peripheral view. The Type A participants in the study may have been focusing on the central action, and not have been as aware of what was going on in the periphery as the Type B participants were. Therefore, the Type A participants may not have been as prepared for the second suspect as were the Type B individuals, causing them to fire out of surprise.

This relationship between Type A and decision to shoot could have an impact on deadly force training for police officers. Deadly force trainers need to be aware that certain personality and behavioral characteristics of an officer may affect the way the officer handles a deadly force situation. Appropriate measures may then be taken to individualize the training programs and focus on specific strengths or weaknesses for each individual.

In this study, the Type A was analyzed as a continuous variable instead of a categorical variable. With such a small sample (13) of individuals who scored above the critical point of 10 on the SJAS, no cut-off point was used. The percentage of Type A's in this study (17.6%) is representative of numbers reported in the literature (Yarnold, Mueser, Grav, & Grimm, 1986). However, larger sample of Type A individuals may give us a more accurate representation of the relationship between TABP and deadly force decision making.

Shooting Time

This hypothesis, which dealt with the amount of time elapsed from when the video clip was started until the participant first shot, was unsupported. This finding may suggest that once an individual makes the decision to shoot, the reaction is instantaneous and any variation between Type A and Type B individuals may be so small as to be negligible. Also, as relatively few participants actually shot (22), the average shooting time for individuals was based on a very small sample size. Therefore, the mean obtained may not be a very good estimate of the true population mean. However, several factors may also have influenced the outcome of this study. These include the number of Type A participants, the actual video scenario, and the time elapsed before the decision to shoot was made.

Number of Type A participants. The current sample included relatively few participants who fit the Type A cut-off criteria (Yarnold et al., 1986). Only 13 out of 74 participants had SJAS scores above 10. Therefore, the participation of more Type A individuals would most likely have increased the distribution of shooting times, possibly allowing for more variability in those times.

Actual video scenario. In deadly force situations, a decision is judged correct or incorrect on the basis of its outcome and reasonable or unreasonable on the basis of the information available to the officer at the time the decision is made (Binder & Scharf, 1982). The reasonableness of the decision is relative, while the correctness is absolute. In our video scenario, one suspect had a gun visibly tucked into his jeans. The other suspect jumped up from behind some boxes, holding a flashlight in his hand. While a

decision not to shoot was the correct one in this scenario, it may be deemed reasonable that one did shoot because of the information available to the participant at the time the decision had to be made.

The results of the response time analyses may have turned out differently had the video scenario been changed. If the correct decision had been to shoot in this video situation, more participants may have shot. Therefore, the range of response time may have been more varied, with more individuals of both behavior types shooting.

Time elapsed before the decision to shoot. Of the 22 participants who decided to shoot, six shot very early into the video, before any suspects were even visible to the viewer. This might indicate that the use of the mouse as a gun was not realistic enough for those individuals. These participants might have been more inclined to shoot, using a mouse button than if they held a real gun.

These early decisions to shoot may also indicate that these participants accidentally pressed the mouse button, not really intending to shoot at that time. Therefore, if this is the case, these times do not actually reflect the participant's true decision time. Finally, although the suspects were not visible at these early times, the participants' partner did show up on screen. These early shooters may have mistaken the partner for a suspect and shot as soon as they saw someone on the screen.

Anxiety Levels of Participants

We did find that there was a significant difference in means between the two administrations of the Spielberger State Scale, overall, and for both males and females. The scores on the second administration tended to be significantly higher than the scores

on the first for both sexes. This indicates that, overall, participants were made relatively anxious by watching the video scenario, as would be the case in a real-life deadly force decision making situation.

This result differs from those of other studies that were related to the current one. Certain studies (Edguer & Janisse, 1994; Pittner & Houston, 1979) have found that Type A individuals respond to tasks with greater physiological arousal than Type B individuals. Arousal was not seen as anxiety in this study because there was no correlation between SJAS scores and Spielberger scale scores. The Type A participants in the current study may have been more aroused (not anxious), influencing their decision to shoot, but arousal had no apparent effect on the speed with which they shot.

Another area of literature deals with Type A individuals' heightened sense of time-urgency (Burnam et al., 1975; Gastorf, 1980; Kirmeyer & Biggers, 1988; Landy et al., 1991) and their impatience as compared to Type B individuals (Yarnold & Grimm, 1982). It has been suggested that Type A individuals exhibit impatient and hurried behavior (Bingham & Hailey, 1989). This may be the case, but in the current study, a sense of time urgency did not seem to come into play in regards to the speed with which the Type A participants who shot compared to the Type B participants who shot.

Future Research

This study raises several points that may be answered in future studies. First, different types of video scenarios should be used in order to assess responses in varying situations. We used a scenario in which the decision to shoot was reasonable but incorrect. Scenarios in which the decision to shoot is correct should also be tested.

Additionally, other variables in the video scenario should be manipulated. For example, in our scenario, a gun was visible in one suspect's pants. This may be taken out of the video in order to assess for a weapon effect. Other video variables able to be manipulated include the race of the suspects and the presence of an item in the suspect's hand.

Another point for future study includes the perception of reality involved in this study. We performed the study using college students sitting at a desk in an office setting. Although the results of the Spielberg measure indicated that participants were made anxious by the video, a more reality-based situation should be used, if possible. Using actual police officers would make this study more realistic, especially, if they were able to view the video on a larger screen in a setting such as an indoor shooting range. There, the officers could use a gun that is more realistic than the mouse pointer used in this study, and they would be able to experience a more life-like setting.

Finally, the computer program used in this study measured each participant's response time in seconds. This time measurement may not be sensitive enough to capture any variability between response time for Type A and Type B individuals, especially if a large sample is used. A measurement in milliseconds may be a more accurate analysis of response time.

While a significant correlation was found between SJAS score and decision to shoot, the hypothesized relation between SJAS score and shooting time was unsupported. Several factors have been mentioned which may have influenced the outcome of the study. Additionally, this study raises certain points that may be answered in future

studies, including the use of different types of video scenarios, a manipulation of variables in the video scenario, and the use of actual police officers to view the scenario and make a deadly force decision.

APPENDIX A

SJAS

Instructions: In the questions which follow there are no “correct” or “incorrect” answers; the important thing is to answer each question AS IT IS TRUE FOR YOU. Your answers are considered strictly confidential – for research purposes only. In addition, your responses are valuable only if you complete each and every question, so be sure to complete every question. Please place a check in the blank preceding your answer.

1. Is your everyday life filled mostly by:
 - a. Problems needing solutions
 - b. Challenges needing to be met
 - c. A rather predictable routine of events
 - d. Not enough things to keep me interested or busy

2. When you are under pressure or stress, do you usually:
 - a. Do something about it immediately
 - b. Plan carefully before taking any action

3. Ordinarily, how rapidly do you eat?
 - a. I'm usually the first one finished
 - b. I eat a little faster than average
 - c. I eat at about the same speed as most people
 - d. I eat more slowly than most people

4. Has your spouse or some friend ever told you that you eat too fast?
 - a. Yes, often
 - b. Yes, once or twice
 - c. No, no one has told me this

5. When you listen to someone talking, and this person takes too long to come to the point, do you feel like hurrying him or her along?
 - a. Frequently
 - b. Occasionally
 - c. Almost never

6. How often do you actually “put words in his mouth” in order to speed things up?
- a. Frequently
 - b. Occasionally
 - c. Almost never
7. If you tell your spouse or a friend that you will meet with them somewhere at a definite time, how often do you arrive late?
- a. Once in a while
 - b. Rarely
 - c. I am never late
8. Do most people consider you to be:
- a. Definitely hard driving and competitive
 - b. Probably hard-driving and competitive
 - c. Probably more relaxed and easy going
 - d. Definitely more relaxed and easy going
9. Nowadays, do you consider yourself to be:
- a. Definitely hard driving and competitive
 - b. Probably hard-driving and competitive
 - c. Probably more relaxed and easy going
 - d. Definitely more relaxed and easy going
10. How would your spouse (or closest friend) rate you?
- a. Definitely hard driving and competitive
 - b. Probably hard-driving and competitive
 - c. Probably more relaxed and easy going
 - d. Definitely more relaxed and easy going
11. How would your spouse (or best friend) rate your general level of activity?
- a. Too slow. Should be more active
 - b. About average. Is busy most of the time
 - c. Too active. Needs to slow down
12. Would most people who know you well agree that you have less energy than most people?
- a. Definitely yes
 - b. Probably yes
 - c. Probably no
 - d. Definitely no
13. How was your temper when you were younger?
- a. Fiery and hard to control
 - b. Strong, but controllable
 - c. I almost never get angry

14. How often are there deadlines in your courses?
- a. Daily or more often
 - b. Weekly
 - c. Monthly
 - d. Never
15. Do you ever set deadlines or quotas for yourself in courses or other things?
- a. No
 - b. Yes, but only occasionally
 - c. Yes, regularly
16. In school, do you ever keep two projects moving forward at the same time by shifting back and forth rapidly from one to another?
- a. No, never
 - b. Yes, but only in emergencies
 - c. Yes, regularly
17. Do you maintain a regular schedule during vacations such as Thanksgiving, Christmas, and Easter?
- a. Yes
 - b. No
 - c. Sometimes
18. How often do you bring your work home with you at night or study materials related to your courses?
- a. Rarely or never
 - b. Once a week or less often
 - c. More than once a week
19. When you are in a group, do the other people tend to look to you to provide leadership?
- a. Rarely
 - b. About as often as they look to others
 - c. More often than they look to others
- In the two questions immediately following, please compare yourself with the average student at your university.**
20. In sense of responsibility, I am:
- a. Much more responsible
 - b. A little more responsible
 - c. A little less responsible
 - d. Much less responsible

21. I approach life in general

- a. Much more serious
- b. A little more serious
- c. A little serious
- d. Much less serious

APPENDIX B

AGGRESSION QUESTIONNAIRE

Instructions: For the following items, please rate how each describes you. Using the following rating scale, record your answer by placing a number in the space next to each statement.

- 1 = Extremely unlike me.
- 2 = Somewhat unlike me.
- 3 = Only slightly like me.
- 4 = Somewhat like me.
- 5 = Extremely like me.

- ___ 1. Once in a while, I can't control the urge to strike another person.
- ___ 2. I tell my friends openly when I disagree with them.
- ___ 3. I flare up quickly but get over it quickly.
- ___ 4. I am sometimes eaten up with jealousy.
- ___ 5. Given enough provocation, I may hit another person.
- ___ 6. I often find myself disagreeing with people.
- ___ 7. When frustrated, I let my irritation show.
- ___ 8. At times, I feel I have gotten a raw deal out of life.
- ___ 9. If somebody hits me, I hit back.
- ___ 10. When people annoy me, I may tell them what I think of them.
- ___ 11. I sometimes feel like a powder keg ready to explode.
- ___ 12. Other people always seem to get the breaks.
- ___ 13. I get into fights a little bit more than the average person.
- ___ 14. I can't help getting into arguments when people disagree with me.
- ___ 15. Some of my friends think I am a hothead.
- ___ 16. I wonder why sometimes I feel so bitter about things.

- ___ 17. If I have to resort to violence to protect my rights I will.
- ___ 18. My friends say that I am somewhat argumentative.
- ___ 19. Sometimes I fly off the handle for no good reason.
- ___ 20. I know that “friends” talk about me behind my back.
- ___ 21. There are people who pushed me so far that we came to blows.
- ___ 22. I have trouble controlling my temper.
- ___ 23. I am suspicious of overly friendly strangers.
- ___ 24. I can think of no good reason for ever hitting a person. *
- ___ 25. I sometimes feel that people are laughing at me behind my back.
- ___ 26. I have threatened people I know.
- ___ 27. When people are especially nice, I wonder what they want.
- ___ 28. I have become so mad that I have broken things.
- ___ 29. I am an even-tempered person. *

* The scoring of these items is reversed.

APPENDIX C

Participant Consent Form

Study Overview

Welcome to the study **Deadly Force**. The following is a general description of the study and a reminder of your rights as a potential participant. As in any study, your participation is completely voluntary. If now, or at any point during the study, you decide that you do not want to continue participating, please let an experimenter know and you will be dismissed without penalty. Also, please remember that your name will not be associated with any of the information that you provide during the study. All of the information you provide is absolutely anonymous and confidential.

In this study you will play the role of a police officer faced with a “shoot/don’t shoot” decision. You will view a video clip during which you will have to decide whether or not to fire your gun. You will also be asked to complete a brief questionnaire. If you have any questions or concerns at this time, please inform the experimenter.

For Further Information

The faculty member responsible for conducting this research is Dr. Ken Graetz. Dr. Graetz would be happy to address any of your questions or concerns regarding this study, and he can be reached at 229-2168 or in his office at SJ 317. If you feel there is an ethical problem with this study or in any study that you have participated in, please contact:

Dr. Greg Elvers, Chair
Research Review and Ethics committee
SJ 312
229-2171

If you would like to participate in this study, please sign in the space provided. Your signature indicates that you are aware of each of the following: 1) the general procedure to be used in this study, 2) your right to discontinue participation at any time, and 3) the steps taken to insure confidentiality of the data you will provide during the study.

Signature: _____

Date: _____

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