



The MMRMA Deadly Force Project

A Critical Analysis of Police Shootings Under Ambiguous Circumstances[©]

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Structured to pursue quantification of the *Graham v. Connor*, “reasonable officer” standard, this study examined micro-behavioral components of the deadly force decision-making process. In doing so it also encompassed consideration of specific officer and suspect traits in an effort to determine their degree of correlation in the decision-making process. The study concludes that the age, assignment, experience and gender of the officer had little significance in the apparent propensity to use deadly force under the circumstances observed. The age, ethnicity, gender and attire of suspects shot by officers did suggest significant correlation, but in ways that might radically alter the manner in which the police use of deadly force is examined in the future.

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ABSTRACT

Prior research on the police decision to use deadly force has tended to focus on macro-situational variables, such as race, while largely forsaking critical micro-behavioral issues that seem to have a significant cumulative effect on an officer's decision to employ deadly force. This study focused on multivariate situational and behavioral variables and their relationship to the frequency with which participating officers utilized deadly force. This paper employs data gathered from 307 officers from six Michigan law enforcement agencies, and employs multivariate analyses to identify situational and behavioral predictors of police shootings involving felony-in-progress suspects, under circumstances that were purposely designed to appear ambiguous. Findings from the analyses are then used in an effort to develop predictive classifications as to when the use of deadly force might be deemed "objectively reasonable." In identifying situational and behavioral predictors of the threshold at which officers might employ deadly force, we may begin to better understand the behavior of officers forced, by the nature of their assignment, to make critical, split-second decisions that may result in the taking of a life.

EXECUTIVE SUMMARY

There were 307 officers/deputies from six agencies that participated in this study, engaging a total of 117 “unarmed” suspects. In examining whether there was correlation between officer’s attributes (race, sex, age, experience, type of duty location) and an officer’s action, we found that no significant correlation exists. Nor was there any significant correlation between officer action and order of scenario videos, subject race or subject sex.

Significant correlation does exist between officer action and action of the subject (shoot, surrender with object in-hand, and surrender without object in-hand), acting quotient, and video setting (burglary, robbery, and mugging). Also, significant correlation exists between an officer’s action and two attributes of the subject – subject’s age and subject’s dress.

Officers/deputies are more likely to shoot when the subject is young (rather than old), in punk dress (rather than business dress), and acting quotient is high (rather than low). Officers are also more likely to shoot in robbery scenarios than in muggings and more likely to shoot in mugging scenarios than in burglary scenarios. Lastly, officers are more likely to shoot when a subject's action is “shoot” than when a subject’s action is “surrender without,” and more likely to shoot when a subject’s action is “surrender without” an object in-hand than when it is “surrender with an object in-hand.” This apparent anomaly is explained by the high correlation found in scenarios which had been assigned high “acting quotients” (AQ) for the amplitude of critical acting variables. The higher the acting quotient, the higher the correlation was for officers shooting “unarmed” suspects.

PROJECT GENESIS AND OVERVIEW

While many professions embody a preponderance of decisional absolutes, there are professions that require a significant amount of discretionary latitude. Law enforcement officers are entrusted with a considerable degree of discretion, which is essential in navigating a world of human behaviors and circumstances that are often ambiguous. However, such latitude often creates greater hesitancy and indecision while an officer attempts to determine the “appropriate” response to a given situation.

Most recent research one finds on the police use of deadly force has been focused on what police do more than upon why they do it. Social scientists who have wandered aimlessly into this research realm have done so largely ill-prepared to discover anything of practical value.

Race has been explored extensively as a factor in the “disproportionate” police use of deadly force, but as a research variable, race has almost always been manipulated without meaningful context (Correll, Park, Judd, & Wittenbrink, 2002; Greenwald, Oakes, & Hoffman, 2003; Payne, 2001). One is left to wonder why this tendency persists. This study embedded officer and suspect race as research correlates simply because their inclusion has become almost obligatory.

While many previous social science research endeavors have focused keenly upon the issue of “stereotype congruence/incongruence” in officers’ decision-making processes, this study delved deeply into the generally overlooked micro-issues that are the very essence of the police decision-making process. Where race appears to play a critical role in police decision-making it may well be attributed to behavioral nuance that is perceived as being defiant and even threatening by police. Weitzer and Tuch (2004) presented evidence that members of ethnic minorities often feel as if they’ve been mistreated by the police (see also Sunshine & Tyler, 2003). The implication has been that the police are racist and that officers use excessive force against minority suspects. In response, it has been suggested that black people may engage in more confrontational behavior toward police officers, perhaps adding to a cycle in which hostility toward police might prompt more severe applications of force by police (Reisig, McCluskey, Mastrofski, & Terrill, 2004).

Does defiant behavior toward authority contribute to the frequency of police shootings – especially under ambiguous circumstances? That question appears to be a legitimate one to ponder, since “death-by-defiance” (to police) seems to be of predictive value when situational and behavioral cues are extreme in nature. One component of this study attempted to quantify whether defiance (i.e., non-compliance to officer/deputy commands) contributed to the officer/deputy perception of an imminent threat. After a literature review of relevant research, we decided to establish a different research pathway and not rely on the synthesis and/or reinterpretation of previous studies.

The genesis of this study actually stems from consideration of an ACLU allegation made on their website in 1998 (<http://www.aclu.org/police/abuse/index.html>): that 25% of all suspects shot by police are, “unarmed and not-assaultive.” One of the three corroborative studies cited by the ACLU was conducted by Marshall Meyer (1980). Meyer analyzed data provided by the Los Angeles Police Department from 1974-78 and reached a myriad of interesting conclusions about the LAPD’s use of deadly force. While noting disparities in the number of black suspects shot by LAPD, he noted;

“In almost all instances, the suspect’s act precipitating a shooting incident is the final act that caused the officer to fire, that is, that act but for which the shooting would not have taken place.” pg.101

It should be noted that the three studies (Meyer 1980, Kobler 1975, Milton et al 1977) cited by the ACLU as being illustrative of the frequency in which unarmed suspects were shot by police, all predated the more restrictive legal constraints imposed by *Tennessee vs. Garner*. It should also be noted that although the ACLU “police abuse” webpage no longer asserts that 25% of unarmed suspects shot by police are unarmed, it still promotes a variety of sources that are clearly dated.

Prior research (M.D. White, 2002) has suggested that certain types of police assignments are highly correlated with the police use of deadly force. In this study however, the presence of a lethal threat was largely implied by behavior, and to a lesser extent, the nature of the scenario. This “threat ambiguity” was embedded as a critical design feature. We were focused upon defining what a “reasonable officer” would do when scenario characteristics were not clearly defined – much the way that they aren’t in many of the more controversial police shootings.

Prior PPSC Research

In a multi-year study of shootings in Los Angeles County (Aveni, 2003), we found that 18% of all officer involved shootings were of “unarmed” suspects. We excluded incidents in which subjects had replica firearms, pellet guns or any other device that convincingly looked like a weapon to the officer/deputy. We also excluded incidents in which motor vehicles were used as lethal weapons against officers/deputies. Investigative narratives regarding the 148 shootings examined (1998-2002) indicated that over half of the officers reported that they used deadly force after non-compliance with verbal commands and after suspects then exhibited “furtive movement.” These findings influenced the structural design of this study.

Faulkner’s “Response to Resistance” Project

Lieutenant Sam Faulkner, Mechanicsburg (OH) PD, began conducting a use-of-force survey in 1990 that he now claims has been completed by more than 40,000 police officers. Lt. Faulkner’s stated mission has been to diminish the ambiguity of the “reasonable officer” standard derived from *Graham v. Connor*. This effort represents a significant effort of substantial value. It should be noted, however, that Lt. Faulkner’s survey addresses a broad spectrum of use-of-force issues, without specific focus on complex deadly force issues.

The PPSC study took an alternative, experiential approach because we believe that any self-reporting mechanism is inherently flawed for most serious research applications. If one were to submit a survey to officers, asking them whether or not they'd shoot an unarmed suspect under certain circumstances, chances are that few would respond in the affirmative.

Where this study does employ a self-reporting mechanism (i.e., "Officer Debrief" forms), it does so after the participating officer has already exhibited what his/her judgment was, under realistically ambiguous and somewhat tense circumstances. In essence, we asked officers not what they would do under specific circumstances; we asked why they did what they had already done in a specific scenario exposure.

Project Structure

Each participating officer/deputy was randomly subjected to a total of three scenarios, with one of each of three types of scenarios:

- Robbery-In-Progress
- Burglary Alarm-In-Progress
- Mugging-In-Progress

Of these three scenarios listed above, all officers were also randomly exposed to three different outcomes of each scenario:

- Suspect empty-hand surrender
- Suspect surrender with (non-weapon) object in-hand
- Suspect shoots at officer

To further determine whether outward appearance might influence a participant's tendency to use deadly force, we also embedded random variations of suspect attire in the scenarios. In all scenario varieties, suspects were filmed in both "dress" and "punk" attire. "Dress" attire was usually a shirt and tie, often with a dress jacket or coat as an outer garment. "Punk" attire varied from individual to individual, based on what actors brought to the film session. Clothing ranged from blue jeans, hooded sweatshirts and leather jackets.

From a methodological standpoint, this study wasn't structured to employ a random sampling of officers/deputies from participating agencies. Given the manpower constraints encountered during the summer months that this project entailed, this study pursued the involvement of at least half of each agency's patrol personnel. To accomplish this goal, research scenarios were run from 10:00AM to 10:00PM to straddle at least two patrol shifts on each day. On some occasions participation stretched well into the midnight shift when it appeared that additional participants might be made available.

During the initial orientation given to each police participant, all were told that they were about to embark upon a data collection exercise, not a training exercise. They were also told that because it was a data collection exercise, no value judgments would be offered before, during or after the projection of each scenario.

Data Analysis

Employing stepwise regression and statistical correlation of variables, we compiled facilitating data in the following categories:

- Hesitation or proclivity to use deadly force
 - Age/Assignment/Experience/Gender/Race of Officer
- Hesitation or proclivity to shoot based on outward appearance of suspect
 - Age/Attire/Dress/Ethnicity/Gender of suspect
- Hesitation or proclivity to shoot by perceived nature of scenario
 - Burglary/Mugging/Robbery

- Hesitation or proclivity to shoot by the perceived nature of subject's actions
 - Non-compliance with officer's commands
 - Concealment of subject's hands in conjunction with "furtive movement"
 - "Targeting glance" over subject's shoulder at officer
 - Rapid subject turn toward officer

Right of Non-Participation

All participants were required to read and sign a "Consent to Participate In Research" form (See Appendix) before they were exposed to any scenarios. Several participants were turned away when they voiced reservations about taking part in this study. The importance of voluntary participation was stressed against a frequent perception (by participating officers) that they were being compelled by their administration to participate. Officers who expressed reservations about participating were told that they had been "rejected" for the study as a means to spare them any discomfort with their administration for non-participation. In all, eight officers/deputies were excluded from taking part in this study due to reservations they expressed about participation.

Participant's Right to Review Video

In recognition of a raging controversy about whether officers should be permitted to view dash-cam video of an officer-involved shooting before being compelled to provide an oral or written statement to agency investigators, this project was structured to permit participants the right to review their actions in each video before being tasked with completing a "Debrief Form" for each completed scenario. ALL participants opted to review the scenarios in which they used deadly force but typically showed much less interest in reviewing the scenarios in which they did not employ deadly force. It is worth noting that when participants opted not to review a video replay of their performance they typically had difficulty remembering many of the situational and behavioral elements embedded in those scenarios. Subsequently, there was an unsatisfactorily high number of "N/A" Debrief Form responses when participants opted not to review a completed scenario. The "N/A" response was an option given to participants when they thought a debrief question was either "not relevant" to what they saw or when they couldn't recall that element being embedded in the scenario.

Artificiality of Video Simulation

Having used video firearms training simulators for many years, we had some expectations regarding the likelihood of getting some measure of disingenuous decision-making from artificial situational and behavioral stimuli. For instance, a subject's age, attire and gender may influence a cognitive bias on the street more so than in a simulated training environment. The reasons for this are simple. For many years, video simulation exercises have stressed the importance of not making "assumptions" based on a subject's outward appearance. Consequently, a substantial number of training videos have been introduced involving female assailants, or older male assailants who commit violent crimes and assault police with deadly weapons. In video simulations, the prevalence of such "stereotype incongruence" has become

somewhat routine – perhaps much more than encountered on the street, if Uniform Crime Report data are used as a standard of comparison. Consequently, officers are more acclimated to the notion that “anything goes” in a video-based training environment than they might be accustomed to expect on the street.

Another common criticism encountered pertinent to using video simulation for research purposes is the notion that officers/deputies will “shoot” in a simulation environment much more readily than they might on the street. The consensus about why this might occur seems to be that there are few negative consequences when deadly force is used in simulation. The degree to which this concern might influence the data derived from the study is probably impossible to quantify. However, to some degree we believe that this concern was mitigated by the apprehension that officers/deputies expressed about their participation being video-taped. Many participants voiced concern about any “mistakes” they might make in the study would be scrutinized and potentially used against them in the future. Although this concern was addressed through reiteration of a contractual assurance of participant confidentiality, it likely remained as a constraining influence on each participant’s propensity to use deadly force in this study.

Scenario Acting Considerations

The material used to conduct this research was hybrid in nature. The scenarios were scripted in such a way that they might elicit a variety of participant responses within a controlled sequence of delivery.

Actors were hired from a small local theater and briefed on the nature of the project. They were told that they'd have virtually no oral script, and that all acting would be confined to what they could convey through their scripted physical activities. Prior to filming the scenarios, all actors were instructed on how to convincingly convey their assigned roles of criminal activity. They were given a choreographed session of "furtive movement" instruction which entailed the sequence of veiled hand movements, "targeting glances," "digging" for secreted weapons, and nuanced hand movement as they pivoted toward the camera. Hand movement was practiced with and without objects in their hands.

Actors were instructed to initiate all hand movement (1) from waist level when making their final turn toward the camera and (2) that their hand movement should thrust forward and then up from the waist position as they completed a full turn toward the camera. This procedure was to be adhered to in all scenario variations that didn't involve the actors turning toward the camera with a firearm. In the scenario variations that did involve the actors turning toward the camera with a gun in-hand, they were instructed that hand movement was to begin at waist level when they were initiating the turn toward camera and end with one or both hands outstretched in a two-handed firing position when they were completing their turn toward the camera. For acting evaluation purposes, it was emphasized that at least one hand (the "gun hand") maintain a waist-level disposition through the first half-turn toward the camera.

Choreograph things as well as you might attempt to, actors seldom move and turn in similar ways. Some exhibited fluid movement, others not. Some initiated their turns with movement in the hips, buttocks, and/or shoulders. Others seem to initiate their turns by noticeably shifting their weight to the foot from which they'd pivot. It is important to note that many of the discernable, yet subtle, body movements (isolated in retrospective video analysis, noted preceding suspect turns) toward the camera could have been missed as behavioral cues indicating that a turn toward the camera/officer was being initiated.

Likewise, many of the suspect's subtle movements toward the camera, which weren't directly connected to his/her turn toward the camera, could have been misinterpreted by officers as initial movement into a turn toward them. In each scenario, actors were instructed to look over their shoulder at the camera at least once and then pause for a few moments before committing to a full-body turn toward the camera. Officers often learn or are trained to perceive such over-the-shoulder glances by suspects as "targeting glances." The degree to which such rearward glances involve more substantive shoulder and/or hip rotation toward the officer might influence an officer's perception that a turn is being initiated when, in fact, it might not be. Since much of this process of perception is context-driven, one might reasonably surmise that

movement toward the officer would be interpreted differently within the context of a robbery-in-progress call than it would within the context of a larceny-in-progress call.

The one common thread embodied in all turns in all scenarios was that they were initiated toward the camera as left-turns.

Given the fact that some turns were “more compelling” than others, one might reasonably suspect that certain actor’s turns elicited higher shooting responses than did other actor’s turns (see illustration below).

Acting Quotient (AQ)

In an effort to pursue more meaningful data interpretation – primarily to explain (or predict) certain anomalies in the way that participating officers reacted to specific scenarios, we scored acting qualities for “values” that appear to add varying levels of “compelling quality” to each scenario. For instance, if an actor turned more quickly toward the camera in one scenario than another, a participating officer might react to that turn with more belief that it represented the initiation of a threat than if that turn had been less rapid. Likewise, if the actor turns with his/her hands at waist level – where a secreted weapon is believed to have been accessed, the officer might be more inclined to shoot than if the actor turned with his/her hands held high, in more of a “surrender” posture. AQ values are scored cumulatively and it is assumed that a higher AQ cumulative value (3-4) will result in a higher frequency of “unarmed” suspects being shot than in scenarios with lower AQ cumulative scores (0 - 2.5). For example, a turn characterized by E,LH,PC, CH would have an AQ score of 3.5.

Actor’s Quotient Values

Actor’s Action	Symbol	Value
Tepid Turn	T	0
Energetic Turn	E	1
High Hand(s)	HH	0
Low Hand(s)	LH	1
Upright Stance	U	0
Partial Crouch	PC	.5
Full Crouch	FC	1
Open Hand(s)	OH	0
Half-Closed Hand(s)	HC	.5
Closed Hand(s)	CH	1

An anomaly that wasn’t fully considered until the research project began was the realization that the actors behaved differently in those scenarios in which they were given a handgun and instructed to turn and fire at the movie camera. None of the five actors utilized identified themselves as recreational shooters – or even gun owners. All were given an orientation with the .38 Smith & Wesson M640 revolver used in the “armed” scenarios. The actors were not instructed in the intricacies of “combat shooting,” they were merely familiarized with function and safety of that specific

handgun. It came as a surprise, when later reviewing each filmed scenario, that actors behaved noticeably differently with the handgun in-hand. They tended to turn with more of a body crouch, with their shoulders forward and knees somewhat bent. In addition, a grimace was somewhat noticeable on actor's faces when turning with a handgun. There may have been a practical reason for that, since the full-flash "Hollywood Blanks" utilized for effect were loud and bright during night-time filming. Whatever influenced the actors to grimace, it added more visual emphasis to their turn toward the camera. The combination of crouching and grimacing contributed to a more "intense" look when actors turned with, and fired, a handgun.

It is essential to note that suspect hand movement – even that which seemed tepid, as he/she turned toward the camera, was almost always too fast to determine the nature of any object being held in the suspect's hand. Suspect hand movement, as viewed from the camera lens, almost always encompassed 4-5 feet of an arc of movement toward the camera. With that much viewed distance of hand movement being covered in one second or less to achieve (1) at least 90% completion of a full turn or (2) the suspect firing his/her first shot at the camera, the latency period of saccadic eye movement falls far behind the rapid movement of the hands. This visual phenomenon becomes apparent when rapid movement is perceived as a blur or a "smear" of motion. Subsequently, it was often difficult for participants to discern when a suspect's hands were not holding any objects until rapid hand movement terminated. This tends to explain why some participants shot suspects who turned to "surrender" with empty hands. The manner in which some suspects turned and the context in which they were viewed (i.e., the type of crime that they were perceived committing), often compelled participants to shoot before there was any certainty about whether the suspect was armed.

In addition to movement of the hands, another substantive hand-variable was noted after all scenarios were filmed and reviewed. Actors were not instructed when to "open" their hands when turning toward the camera into a "surrender" position. Subsequently, some actors initiated their turns toward the camera with open hands while others initiated turns with clenched hands. Even with the rapid hand movement evident in all scenarios, the difference was almost always readily apparent. And, the difference is significant to trained eyes. An open hand is perceived as a much less threatening hand since it is almost immediately recognized as an "empty hand." An empty hand is perceived as a weaponless hand. A clenched hand, especially when viewed in rapid movement, exudes significant behavioral ambiguity. A rapidly moving clenched hand is much less likely to be viewed innocuously if the situational context is severe.

For the scenarios involving the (actor's) use of deadly force (which was 1-in-3 of all scenarios), we gave an orientation to the actors relative to using a Smith & Wesson M640 revolver in .38 Special caliber. The revolver was being loaded with "full-flash" Hollywood blanks for each scenario that involved the "suspect" using deadly force.

What this study did not originally account for was the manner in which actors appeared "stimulated" whenever they acted out scenarios that involved them holding/firing a handgun. They appeared to turn (toward the camera) at roughly the same pace, but they more frequently turned in a crouching posture, with hands more clenched.

Even facial expressions changed in substantive ways that might be perceived as being “more aggressive.” Actors often appeared to grimace in anticipation of the loud report and flash of the blank cartridges that were fired from the handgun. But, to a trained observer, that same grimace might be perceived as an expression of defiance and determination.

Empty-Hand vs. Object In-Hand Suspect Variations

In an attempt to determine the nature in which suspects might be shot while unarmed, we filmed two variations of the unarmed scenarios. In all three types of scenarios (burglaries, muggings, robberies), actor/suspects were filmed with firearms in one variation, innocuous objects (cell phone, flashlight, police ID wallet) in another variation and empty-handed in yet another variation. Due to the eye’s (saccadic) latency period in tracking rapidly moving objects, it was believed that objects held like weapons would in fact be confused for weapons when actors were moving rapidly, and under the low light conditions in which all scenarios were filmed. Since at least 71% of all “mistake-of-fact” police shootings occur at night (Aveni, 2002), this research element was deemed critically relevant.

Participant Isolation

Each participant’s performance was kept confidential by isolating his/her involvement behind closed doors. This provided the added benefit of keeping scenario substance under wraps until individual participants could be debriefed about their possible involvement in the project.

Unknown to participants, all research scenarios had common elements embedded within them. Suspects, when confronted by police, initiate movement toward the officer with their back initially facing the officer. This variable was purposely embedded in scenarios to add to the ambiguous nature of each suspect’s veiled movement. As each suspect’s back is facing the officer’s view, suspect hand movement is obscured until he/she nearly completes a full rotational turn toward the officer. When suspect role players turn toward officers at more brisk speeds, their hands appear to blur due to the latency period of saccadic eye tracking of moving objects. Subsequently, it is often difficult to determine an empty hand from one that isn’t. For the same reason it is also extremely difficult to discern the nature of any object being held by the suspect as he/she turns toward the officer. Suspects turning with cell phones, flashlights or police ID were often shot by officers for this reason.

Some officers began recognizing the behavioral commonality after completion of their first two scenarios. Others didn’t grasp this even after completing all three scenarios. However, for the sake of the project’s integrity, each participant was asked not to discuss the nature of what they had observed with anyone who hadn’t already been tested. They were further advised that (participant) scenario assignment was random and that no two participants from any agency were likely to have the same combination of scenarios.

The Return-Fire Stimulus

Generally associated with the use of video-based training (“gunfight”) simulators is the perceived lack of threat-induced stress. Officers seldom seem motivated at levels

even remotely comparable to what they might experience in similar scenarios on the street.

The IES-MILO system that was utilized in this study afforded a shoot-back capability in the form of a slightly modified paintgun that fired .68 foam-rubber projectiles. Though launched at velocities of roughly 300 fps (measured within 3' from the muzzle), the foam projectiles only cause mild discomfort when officers are struck by them. Paintgun masks that afforded full wrap-around face protection were mandated for wear by all participants.

The manner in which the return-fire stimulus was used was never fully explained to participants. They knew that the device was fired remotely but were not told that the device was deliberately aimed at the "cover" that they had been afforded – not at participants. However, the possibility of being struck by a projectile was always present. Perhaps as many as five participants were struck by projectiles – most were struck in arm or shoulder areas that were exposed from behind cover. There were no resultant injuries, of any kind.

First Shot Fired

In each scenario that involved a suspect's shot being fired toward the camera (officer), there was a specific frame of that video in which the first shot was identified by way of the flash signature of that shot. By identifying when the first shot was fired in each deadly force scenario we were able to then identify whether each participating officer's reactionary shot was fired before or after the "suspect's" first shot. It was anticipated that officers who resist the reflex to shoot at a rapidly turning suspect who (later) is determined to be unarmed might also find themselves exhibiting that same hesitation when the suspect is armed. If this projection were found to be true, we'd also likely find that the officers who didn't shoot an unarmed suspect were also hesitant enough to allow the suspect to fire the first shot due to that additional time spent in **deciding** to shoot.

Agency and Jurisdictional Characteristics

Prior research suggests that extreme police-citizen encounters typically occur within the community in which both participants live and/or work, and characteristics of that environment influence perceptions and behavior during such encounters (Kania and Mackey, 1977; Fyfe, 1980, 1988; Geller and Karales, 1981a; Alpert, 1989). In addition, Kania and Mackey (1977) concluded that there is a significant relationship between police aggression and police exposure to violent crime. In this vein, consideration was given in the developmental stages of this study to potential differences in the way that participants from varying agencies might react to similar scenarios. Initially, we had contemplated integrated comparisons of each agency's Calls-For-Service (CFS) data, along with a comparison of UCR data (e.g., homicides per 100,000, aggravated assaults per 100,000, etc.). Though requested, CFS data was not forthcoming from participating agencies. A fallback approach was utilized, employing a rudimentary metric that was already embedded in the study.

All agency participants were categorized by their individual assignment type, into four classifications; (1) Rural, (2) Suburban, (3) Urban and (4) Detective. Deputies from

Kent, Ingham and Livingston counties were asked to describe the nature of their current duty assignments to determine which classification was most appropriate. Officers from Southfield and Grand Rapids were similarly classified by assignment, but either into Urban or Suburban classifications.

This study was originally structured to omit any personnel not currently assigned to “patrol” assignments. However, given the challenging nature of personnel scheduling in summer months, two agencies provided a substantial number of investigators for testing purposes. While all participating detectives/investigators indicated that they had prior patrol experience, many were years removed from that experience and were therefore classified as “Detectives.”

As our findings later seemed to suggest, assignment classification didn’t reflect any significant statistical difference in participant decision-making.

DATA ANALYSIS & RESEARCH FINDINGS

No significant correlation exists between officer action and any officer attribute (race, sex, age, experience, type of duty location), nor between officer action and order of videos, subject race or subject sex.

Significant (Alpha = .05) correlation exists between officer action and action of the subject (shoot, surrender with object in-hand, and surrender without object in-hand), acting quotient, and video setting (burglary, robbery, and mugging). Also, significant correlation exists between officer action and two attributes of the subject – subject’s age and subject’s dress.

Officers/deputies are more likely to shoot when subject is young (rather than old), in punk dress (rather than business dress), and acting quotient is high (rather than low). Officer is also more likely to shoot with video setting as a robbery than as a mugging and more likely to shoot with video setting as a mugging than as a burglary. Lastly, officer is more likely to shoot when subject’s action is “shoot” than when subject’s action is “surrender without,” and more likely to shoot when subject’s action is “surrender without” than when it is “surrender with.”

Correlation for All Scenarios, Subjects Armed and Unarmed

Officer Shoots	Cor	Abs (Cor)	Num	Denom	tcalc	ttable	Sig?
Shoot	0.7447	0.7447	22.4262	0.6675	33.5997	1.9626	yes
Act Quotient	0.4832	0.4832	14.5538	0.8755	16.6237	1.9626	yes
Surrender W/O	-0.3176	0.3176	9.5638	0.9482	10.0859	1.9626	yes
Old Suspect	-0.1278	0.1278	3.8493	0.9918	3.8811	1.9626	yes
Robbery	0.0771	0.0771	2.3234	0.9970	2.3303	1.9626	yes
Burglary	-0.0677	0.0677	2.0377	0.9977	2.0423	1.9626	yes
Punk Dress	0.0653	0.0653	1.9663	0.9979	1.9705	1.9626	yes
Officer-Other	0.0483	0.0483	1.4535	0.9988	1.4552	1.9626	no
Second Video	-0.0473	0.0473	1.4245	0.9989	1.4261	1.9626	no
Officer-Black	0.0340	0.0340	1.0237	0.9994	1.0243	1.9626	no
First Video	0.0328	0.0328	0.9873	0.9995	0.9878	1.9626	no
Urban Officer	-0.0310	0.0310	0.9334	0.9995	0.9339	1.9626	no
Suspect Female	-0.0294	0.0294	0.8866	0.9996	0.8870	1.9626	no
Officer Yrs. Exp.	0.0202	0.0202	0.6080	0.9998	0.6081	1.9626	no
Rural Officer	0.0198	0.0198	0.5962	0.9998	0.5963	1.9626	no
Officer-Male	-0.0196	0.0196	0.5891	0.9998	0.5892	1.9626	no
Officer-Age	0.0165	0.0165	0.4957	0.9999	0.4958	1.9626	no
Suspect-Black	0.0123	0.0123	0.3692	0.9999	0.3692	1.9626	no
Officer-Hispanic	-0.0093	0.0093	0.2805	1.0000	0.2805	1.9626	no
Suburban-Officer	-0.0066	0.0066	0.1982	1.0000	0.1982	1.9626	no

Correlation for Instances Where Subject was Unarmed

Officer Shoots	Cor	Abs(Cor)	Num	Denom	tcalc	ttable	Sig?
Act Quotient	0.2263	0.2263	5.5671	0.9740	5.7154	1.9639	Yes
Old Subject	-0.1953	0.1953	4.8035	0.9807	4.8978	1.9639	Yes
Robbery	0.1489	0.1489	3.6628	0.9889	3.7041	1.9639	Yes
Punk Dress	0.1363	0.1363	3.3535	0.9907	3.3851	1.9639	Yes
Officer-Black	0.1093	0.1093	2.6875	0.9940	2.7037	1.9639	Yes
Burglary	-0.1076	0.1076	2.6467	0.9942	2.6622	1.9639	Yes
Surrender W	0.1006	0.1006	2.4741	0.9949	2.4868	1.9639	Yes
Officer other	0.0884	0.0884	2.1745	0.9961	2.1830	1.9639	Yes
First Video	0.0837	0.0837	2.0595	0.9965	2.0667	1.9639	Yes
Black Subject	-0.0543	0.0543	1.3350	0.9985	1.3370	1.9639	No
Female Subject	-0.0534	0.0534	1.3144	0.9986	1.3163	1.9639	No
Urban Officer	-0.0511	0.0511	1.2578	0.9987	1.2594	1.9639	No
Officer Male	-0.0465	0.0465	1.1446	0.9989	1.1458	1.9639	No
Rural Officer	0.0399	0.0399	0.9810	0.9992	0.9818	1.9639	No
Second Video	-0.0353	0.0353	0.8687	0.9994	0.8692	1.9639	No
Officer Yrs Exp.	0.0325	0.0325	0.7990	0.9995	0.7994	1.9639	No
Officer Age	0.0250	0.0250	0.6161	0.9997	0.6163	1.9639	No
Officer Hispanic	-0.0207	0.0207	0.5095	0.9998	0.5096	1.9639	No
Suburban Officer	-0.0193	0.0193	0.4747	0.9998	0.4748	1.9639	No

Action vs. Reaction

As one might anticipate, the lag-time between when the officer made his/her decision to fire and when the initial shot is fired has critical implications. If an officer finds him/herself behind the reactionary curve in a rapidly evolving situation, the lag-time associated with decision-making can allow the suspect to fire one or more shots at the officer before fire can be returned by the officer. Another critical lag-time consideration becomes manifest when an officer fires at a person who ultimately becomes known to be an unarmed person. As suspects turn toward the camera (officer) they may appear to be armed as the turn is initiated - the suspect's hands may be clenched and/or positioned at or near waist level. However, since the officer's decision to fire at the suspect predates the subject being shot .25 seconds or more, the officer can (and easily does) shoot the suspect as he/she is raising his/her hands into a "surrender" position. This was a frequent and somewhat unanticipated outcome in many of the shootings that involved "unarmed" suspects; suspects getting shot while "surrendering." The officer typically has 1/3 of a second or less (from a critical juncture in each scenario) to decide whether or not to employ deadly force, and then to apply that force, before he/she risks being "shot."

Those officers who managed to shoot armed suspects before the suspect was able to fire seemed to have elected to use deadly force before it could be clearly determined that the suspect did, in fact, have a handgun. This tendency to employ deadly force "preemptively" was at the core of our objective to quantify when such actions were objectively reasonable. As anticipated, most officers found themselves firing after the suspect fired his/her first shot at the officer.

Officer's Reaction to When Suspect Fires	Frequency
Officers shoots after subject shoots	61.44%
Officer shoots before subject shoots	38.56%

As one might expect, officers seemed more vigilant and situationally postured when they were informed that they were responding to a forcible felony-in-progress. Participants typically had their handguns drawn sooner in the robbery scenarios and were more inclined to utilize the cover that was afforded to them. When handguns were drawn and used in conjunction with a verbal challenge in the robbery scenarios, participant muzzle dispositions were notably higher (i.e., more elevated toward the suspect). And yet, even this higher state of situational readiness seemed to offer little more than a statistical “dead-heat” to the suspect’s first shot fired.

Officer Reaction Time in Relation to 1st Shot Fired by Suspect			
Measure	<i>Burglary</i>	<i>Robbery</i>	<i>Mugging</i>
Mean	0.166323	0.001	0.035897
Median	0.166667	0	0.066667

Since the “mugging” scenarios were actually officer-initiated scenarios, with little situational clarity, participants generally exhibited an intermediate level of readiness. Handguns weren’t unholstered as quickly as they were in the robbery scenarios and muzzle orientation appeared somewhat lower when handguns were drawn. Not surprisingly, participant reaction times were noticeably slower than what they were in the robbery scenarios. And, vigilance and situational readiness in the “burglary” scenarios was measurably worse than in both the robbery and mugging scenarios. It should be noted that the burglary scenarios were actually given to participants as “alarm activation” scenarios. It was only until after the mid-point in the burglary scenarios that it became apparent that they were actually burglary-in-progress incidents. Situational and behavioral ambiguity was purposely embedded in these research scenarios to enable measurement of each participant’s interpretation of their value. (See “Reaction Time Histograms” in Appendix)

Inter-Agency Shooting Variations

The 307 officers/deputies participating in this study shot a total of 117 unarmed suspects – a frequency of 38% (0.3811). However, there was a significant difference between one agency on the low end of the frequency scale and agencies on the higher end. It should also be noted that the agency with the lowest frequency of participants shooting unarmed suspects and the agency with the highest frequency of unarmed suspects shot were both largely classified as being “urban” agencies. (See table below)

AGENCY	PARTICIPANTS	UNARMED SUSPECTS SHOT	FREQUENCY
1	76	18	24%
2	46*	18	39%
3	51	20	40%
4	38*	16	42%
5	54*	24	44%
6	43	21	49%

*Indicates that individual participants shot more than one unarmed suspect

The question will undoubtedly arise; “What noted differences were there between the agency with the lowest frequency of shootings (of unarmed suspects) and those with the highest frequency?” The answer, simply put; “It was a difference in training.” (See “Training Implications”)

The Suspect “Surrender” Phenomenon

The action-reaction disparity previously mentioned was instrumental in a substantial number of suspects being shot while in a “surrender position” (i.e., empty hands raised overhead). All non-deadly force scenarios that we filmed culminated in a raised-hand, “surrender” position, which we defined as having the (suspect’s) hands held at sternum height or higher, palms facing forward, fingers pointed mostly upward. By this definition, 92.04% of the unarmed suspects who were shot by officers were shot while in the surrender position. This was an oblique yet wholly predictable outcome of this study. Due to the highly compressed timeframe in which officers had to initiate and/or halt action to raise/fire their handgun, or to terminate a firing impulse if it became apparent that the suspect’s actions didn’t warrant a deadly force response, the difference between shooting an armed suspect and shooting an unarmed suspect was usually delineated in fractions of a second. .

On average, each scenario had a critical decisional juncture in which the officer had about 1/3 of a second to the suspect’s aggressive movement (i.e., 180° turn toward the officer). In after-action review of each participant’s video playback, it became apparent that those officers who managed to shoot unarmed suspects before the suspect was able to “surrender” seemed to have elected to use deadly force either (1) before the suspect initiated his/her turn toward the officer, or (2) at the earliest possible juncture in which the initiation of a turn toward the officer was perceived. Another issue worth noting was a common tendency for officers to shoot or continue shooting after an unarmed subject completed his/her turn. There are two plausible explanations for this phenomenon. The first is that it takes time to “apply the brakes” of a neuromuscular response (i.e., firing a handgun). Recent research (Lewinski, 2003) suggests that officers can, on average, fire two or more shots after they’ve been given a visual cease-fire stimulus. In addition, if an officer is engaged in a multiple shot firing string, he/she may have greater difficulty in terminating a firing sequence. Relevant to that, many of the officers in this study fired 4-12 times in apparent response to the on-screen “threat” remaining erect and not going down.

In this study, since scenarios did not have a branching capability, subjects shot by officers did not go down when shot. Any officer trained to “fire until your foe falls”

would likely continue firing until he/she saw the subject projected on the screen go down – which wasn't a design characteristic in this study. Therefore, a longer shot-string could have been anticipated. In addition to the participant's perception of a persistent threat (i.e., one that doesn't fall when shot), there is another important firing phenomenon to consider; when the handgun of the officer/deputy is brought up to point-shoulder-aim, it occludes vision of hand movement until the (suspect's) hands are raised to approximately shoulder height. In effect, the participant literally couldn't see whether the suspect's hands were empty – once the officer/deputy had committed to firing from point-shoulder-aim.

If a follow-up study were conducted, in pursuit of similar research objectives, the use of branching scenarios would be beneficial for a number of reasons. At least three of the participating agencies employ video-based simulators with branching capabilities and many officers/deputies fully expect to see an on-screen "suspect reaction" to verbal commands and shots fired.

Cover from Return-Fire

In an effort to ascertain whether participants would utilize available cover within each scenario's context and whether participants were decisionally influenced by their use or non-use of cover, each participant was provided a vertical cardboard "barricade" that was 24" wide by 70" tall. The cardboard was partially reinforced by strapping tape to inhibit penetration by the .68 rubber balls that were frequently fired at participants when scenario-subjects fired at them. While most of the participating officers used the cover provided, there was a wide degree of variance in how early (or late) in each scenario they elected to use cover and to what degree they used cover effectively. Many participating officers/deputies exposed far too much of themselves when using cover.

If this study were to be replicated in the future, it is recommended that the use of a "return-fire" capability be structurally modified so that cover could be used more intuitively. Our use of the return-fire device had it positioned to the right of the projection screen. The "cover" structure was positioned toward the left side of the screen. The "threat" imagery projected onto the screen was centered on the screen and yet the actual threat (projectiles fired from the return-fire device) was emanating from the participant's right side. This seemed to skew the manner in which cover was used and may have also influenced shot placement to some degree.

"Death by Defiance™"

One of the least documented, perhaps least understood and yet most problematic concerns that entered into this study was a phenomenon that injects an incendiary set of cultural variables into citizen confrontations with police. For the better part of two decades, if not more, pop culture in general and hip-hop culture in particular has glamorized defiance and resistance against authority figures. While sociologists have looked extensively at race as a predictor of the police use of deadly force, they may have to consider whether culturally influenced nuance that police perceive as "defiant" suspect behavior serves as a more reliable predictor than race alone.

One of the most consistently influential factors elicited from participants in the after-action debriefing process was that their decision to shoot was based on subject non-compliance with verbal commands. The most common verbal commands were; “police – don’t move,” and, “show me your hands.” It is from that frame of reference that subsequent suspect actions were apparently perceived as being threatening.

In robbery scenarios, 49% of participants said non-compliance to verbal commands was a determining factor in the use of deadly force, 42% stated that it was a factor in burglary scenarios and 41% stated that it was so in mugging scenarios. And, non-compliance was likely the perceptual filter through which a suspect’s concealed hands, and turns toward the officer were mentally processed. (See APPENDIX for a full tally of responses gleaned from the Officer Debrief Forms.)

Definition – “Death by Defiance”

A justifiable homicide that occurs after a flagrant level of furtive, suspicious or otherwise reckless behavior is viewed concurrently with a subject exhibiting non-compliance to stated and/or exhibited police authority. When such behavior is confronted within substantive situational context, and the officer senses that the subject’s (non-compliant) actions appear consistent with the initiation of a lethal threat, an officer might reasonably use deadly force in a pre-emptive manner. Thus, the subject’s defiant behavior becomes a compelling determinant of the officer’s use of deadly force.

To expound upon this theorem, DBD might best be described as a symbiotic behavioral phenomenon occurring (1) where and when non-compliant behavior (2) is viewed as being hostile within what appears to be a felonious context (3) eliciting the police use of deadly force when a threat of death or serious bodily harm is perceived as being imminent to that officer. An officer’s perception of imminent danger can be reasonably construed when (1) the officer has issued concise audible commands (e.g., “Police – don’t move!” or “Police, show me your hands!”) yet is met with threatening behavior construed from direct defiance and contradiction of the commands given. If, given substantive situational context, the officer senses (non-compliant) furtive movements that appear consistent with the initiation of a lethal threat, he/she might reasonably use deadly force in a preemptive manner.

Mugging Scenarios and the Bystander Influence

Every participant in this study was subjected to one scenario in which a deadly assailant was encountered with a victim/bystander directly behind the assailant. This element was integral to the “mugging” scenario that each participant was exposed to. Additionally, the nature of this scenario placed an apparent “victim” directly in the participant’s line-of-fire when he/she elected to use deadly force. Most officers fired when fired upon under these circumstances, but some did not. Many of the officers who did fire at their assailant under these circumstances had one or more of their errant rounds hit the “innocent bystander.” However, the frequency with which officers shot bystanders while in the line-of-fire of perceived adversaries was not quantified in this study.

The Black Officer Phenomenon

When preliminary results of this study were released, one issue became an almost immediate lightning-rod. Though only nine of the of the 307 officers that participated in this study were self-identified as being black/African-American, seven of those nine black officers shot unarmed suspects in this study. One of the nine black participants shot both of the two unarmed suspects that he was exposed to. Consequently, the regression and correlation tables (See: "Correlation for Instances Where Subject was Unarmed") reflect a significant relationship between black participants and deadly force usage against unarmed suspects. In essence, the (.777) frequency in which participating black officers used deadly force against unarmed subjects in this study was twice that of the aggregate participant average. If we were to factor in the one black officer who shot two unarmed subjects, the (unarmed suspect) shooting frequency (.888) rises even more.

However, with so few black officer/deputy participants in this study, interpretation of such limited data would be extremely tenuous, at best. Nevertheless, the numbers are what they are and probably warrant greater emphasis in any future study structured to replicate this project. Obviously, any such effort would require a much greater participation of black officers and deputies. Presumably, this objective might best be pursued by eliciting the involvement of urban law enforcement agencies that reflect a higher composition of African-American officers.

TRAINING IMPLICATIONS

As many would seem to sense, there is a downside to allowing officers too much *unrestrained* discretionary latitude in the use of deadly force. Restraint isn't just a manifestation of agency policy parameters. It likely has more to do with the degree and manner in which officers have been trained. Officers lacking in such ingrained restraint might exhibit difficulty in controlling impulses that proper training often tends to mitigate. Defining what proper training is has always been a monumental challenge. While we can say that proper training involves task-oriented training that best reflects the nature of an officer's duties, further delineations become arguable. Officer proclivity to use deadly force seems to be mostly derived from the perceived nature of each scenario (burglary/robbery/mugging), and the actor's furtive movements and non-compliance with verbal commands (See Officer Debrief Summaries).

As was previously noted ("Inter-Agency Shooting Variations"), the distinct inter-agency differences relevant to shooting unarmed suspects seem directly attributable to training. There were no substantive differences in agency policies pertinent to the use of deadly force. The one agency that required its personnel to complete a "Use of Force Report" whenever unholstering their handguns had a 44% rate of frequency in engagement of unarmed suspects. Its participants did typically unholster their handguns more slowly than participants from other agencies, but that didn't seem to influence their overall judgment in the research scenarios. The agency with the lowest frequency of unarmed suspects shot (24%), judging from all informal participant debriefs, had the most rigorous scenario-based training regimen. Virtually every participant interviewed from that agency stated that he/she had had one or more force-on-force training sessions in the last 12 months. In itself, this might not seem evidence adequate to suggest that training was the most influential factor, but it is the only factor that clearly stood out from all others. We were impressed by the overall professionalism exhibited by participants afforded to us by all agencies. Scenario-based training was evident to some degree in all participating agencies. However, in all but one agency, it seemed much more intermittent rather than routine.

Another issue relevant to what was observed throughout the implementation of this study was that of officer/deputy muzzle discipline. Many participants were seen "covering-down" on suspects with their muzzles pointing directly at "center mass" of the suspect. This may diminish reaction time by about one-tenth of a second, but it also demands some serious trade-offs. A handgun presented to eye level occludes vision of almost everything from the suspect's sternum, down. A suspect's hand and arm movement are then difficult-to-impossible to discern. This would seem to suggest that there might be serious threat identification issues corresponding with this approach. Another possible trade-off lies within the fact that by truncating reaction time (by elevating the muzzle before committing to fire), you also truncate the amount of time needed to bring cessation to an erroneous "threat reflex" impulse. Many participants were noted elevating their muzzles when they sensed a threat was imminent, only to

“brake” their reaction string just as they had initiated their trigger-pull. Indeed, this phenomenon was captured on many of the participant videos. In essence, truncated reaction time is a double-edged sword.

Recent trends in active shooter training have provided somewhat of a trickle-down effect of SWAT tactics to patrol officers. As an example of this trend, many patrol officers are being taught a “ready-gun” position that has the handgun muzzle pointed at center-mass of a suspect that they may not yet be willing to shoot. This runs contrary to universally-embraced firearms safety protocol that mandates that one, “never point your weapon at anything you’re not willing to destroy.” Consequently, the “muzzle-dominance” techniques commonly employed by SWAT personnel are becoming manifest in patrol encounters, sometimes with critical unintended consequences. Even where quasi-military (proactive) tactics have appropriate law enforcement applications, weapon handling doctrine should be held to strict safety standards.

One final perspective should be made regarding the value of scenario-based training – it can be part of the problem or part of the solution. Scenario-based training should truly be geared toward “conflict resolution,” not merely gun-fighting skills. In addition, a disproportionate number of “aggressive” scenarios may begin influencing reactions akin to “fear-biting” in canines. A recent buzzword in the police training lexicon has been that of “stress inoculation.” Approach this concept with caution. Your officers/deputies may never be “warriors,” nor may you want them to be, but they must be rational decision-makers. If your agency’s scenario-based training proportionately reflects what duties and conflicts your officers/deputies are most likely to encounter on the street, your training is likely where it needs to be.

OIS INVESTIGATIVE IMPLICATIONS

In virtually all scenarios filmed and utilized, participants found themselves having to decide whether to fully commit to using deadly force within a window in time that generally averaged less than .35 seconds. In each scenario, participants seem to have difficulty remembering everything they had been exposed to in such compressed periods of intense decision-making. One might assume that what the officer is able to process **consciously** (and then recall) might be a fraction of what he/she processes subconsciously.

A contemporary and critical debate regarding this issue has been whether officers should be permitted to view available dash-cam video of their own shooting incident before being compelled to give a statement about that incident. One of the peripheral issues noted in this study was the prevalence of so-called “threat-focus.” Many of the shots fired by officers were shot at, or in very close proximity to, the suspect’s gun-hand. This suggests that the officer’s visual focus is often directed toward the weapon by which he/she feels most threatened. Subsequently, many other peripheral (behavioral and situational) cues are likely filtered out of the officer’s perceptual process. If one were to accept that premise, one might also accept the premise that what is suppressed or filtered out of the “input” (perceptual) process will be unavailable (or unreliable) for retrieval at a later time. For that reason, this study allowed participants to review their own performance via the video-capture system that was employed with each scenario that participants were subjected to. We would suggest that officers/deputies be afforded the same opportunity if dash-cam video of a shooting is available – prior to compelling that officer/deputy to give pertinent incident statements.

All scenarios scripted and filmed for this study were “low light” scenarios. This variable was engineered into the scenarios to increase realism and incident ambiguity. After-action debriefing forms indicated that 20-23% of participants, in all three types of scenarios, stated that, “The time of day and/or existing lighting conditions may have influenced my decision to shoot.” To what extent officers/deputies can discriminate a handgun from a cell phone, flashlight or wallet at night has become a source of concern in recent years. Investigators should seriously consider taking detailed light measurements wherever a low light officer-involved shooting has taken place. When in doubt about this process, consult with people who specialize in low light visual issues and who are experienced at taking low light measurements for forensic applications. Keep in mind that our previous research indicates that 71-75% of “mistake-of-fact” shootings occur under low light conditions and that an officer’s or deputy’s lack of visual acuity may have direct bearing on what he/she was able to visually discern during an extreme encounter.

POLICY CONSIDERATIONS

As many aforementioned findings suggest, many police shootings are “gray-area” events that often reflect split-second differentials between in-policy and out-of-policy shootings. The almost universal embrace of the “imminent threat” standard, in our opinion, is warranted and court-defensible. For clarification purposes, “immediate threat” scenarios are “must-shoot” incidents, and therefore generate the least amount of post-incident controversy. When an officer responds to an immediate threat, he/she is either reacting to someone lunging with an impact or edged weapon, looking down the barrel of a suspect’s gun, or dodging bullets that have already been fired. We don’t require that officers wait until a threat has manifested to that level before he/she can react with deadly force. An insightful operational definition of what “imminent danger” is was expressed by the New Jersey Division of Criminal Justice in 2000;

Imminent Danger:

- *Threatened actions or outcomes that may occur during an encounter*
- *Threatened harm does not have to be instantaneous*

This concept affords officers a large degree of latitude in their interpretation of events – as does the Graham v. Connor “reasonable officer” standard. In fact, this standard has become so universally accepted that even the ACLU now seems to embrace the imminent threat standard for the police use of deadly force. (<http://www.aclu.org/police/gen/14614pub19971201.html>)

However, many agencies have been seeking ways to diminish the frequency of “may-shoot” incidents that arise from an imminent threat standard. The widespread implementation of TASERS has been credited with substantially reducing the frequency of “may-shoot” incidents. Policy modifications that attempt to narrow the parameters in which officers may use deadly force have become a preferred “remedy.” However, attempts to further define or restrict when an officer is authorized to use deadly force often create a countervailing dynamic pertinent to what a “reasonable officer” might be expected to do.

One agency encountered in this study had a requirement that its officers report incidents in which handguns are unholstered operationally. In effect, an unholstered handgun becomes a reportable “use of force.” Observationally, this did seem to influence how early in a scenario participants from that agency drew their handguns – even in robbery scenarios. A few participants literally waited to draw their handguns until they came under fire. When debriefed about the delay that these participants exhibited in drawing their handguns, a common response from younger, less experienced individuals was that they were concerned about having their personnel files reflecting frequent usage of force when in reality “force” was never used. Perhaps, in retrospect, even the best intentions have demonstrable occupational safety implications.

As was previously noted (See: Inter-Agency Shooting Variations), there were some substantive differences between agencies on the lower and upper spectrum of (unarmed suspect) shooting frequency. The differences noted seemed to be attributable to training – not policy. As much as policy has been touted as a means of moderating undesirable behavior, it is apparently investment in training that yields the best results.

A not-unexpected outcome of this study is the prevalence in which participants found themselves firing at “suspects” *after* the suspect had already turned and fired at them. A practical and altogether reasonable interpretation of what a “reasonable” officer might do when, for instance, he/she confronts a non-compliant robbery suspect, would be for that officer/deputy to shoot the suspect as he/she initiates a turning motion toward that officer/deputy. This will likely be construed as being “controversial” in some circles, but this study’s findings certainly seem to suggest that such officer/deputy latitude is both reasonable and necessary.

Agencies should strive to provide frequent experiential interpretations of deadly force policy. Often, policy directives are difficult to reconcile operationally. Scenario-based training is the most effective means of providing officers a practical frame of reference with agency policy. Since training resources tend to be limited, effort should be focused upon training that embeds critical decision-making activity within the most common tasks associated with an officer’s job assignment. Vehicle stops, “suspicious person” calls and domestic disturbance scenarios may not afford the sexiest fodder for training, but for most beat officers, such calls represent a persistent occupational safety problem.

REFERENCES

- Aveni, T. (2003), "Following Standard Operating Procedure," *Law & Order*, Vol. 51, No. 8, pp. 79-87.
- Correll, J., Park, B., Judd, C.M., & Wittenbrink, B. (2002). The police officer's dilemma: Using ethnicity to disambiguate potentially threatening individuals. *Journal of Personality and Social Psychology*, 83, 1314–1329.
- Fyfe, J.J. (1979), "Administrative interventions on police shooting discretion: an empirical examination", *Journal of Criminal Justice*, Vol. 7, pp. 309-24.
- Fyfe, J.J. (1980), "Geographic correlates of police shooting: a microanalysis", *Journal of Research in Crime and Delinquency*, Vol. 17, pp. 101-13.
- Fyfe, J.J. (Ed.) (1981a), "Toward a typology of police shootings", in *Contemporary Issues in Law Enforcement*, Sage Publications, Beverly Hills, CA, pp. 136-51.
- Fyfe, J.J. (1981b), "Who shoots? A look at officer race and police shooting", *Journal of Police Science and Administration*, Vol. 9, pp. 367-82.
- Fyfe, J.J. (1982), "Blind justice: police shootings in Memphis", *Journal of Criminal Law and Criminology*, Vol. 73, pp. 702-22.
- Fyfe, J.J. (1986), "The split-second syndrome and other determinants of police violence", in Campbell, A.T. and Gibbs, J.J. (Eds), *Violent Transactions*, Basil Blackwell, Oxford.
- Geller, W.A.(1982). *Deadly force: What we know*. *Journal of Police Science and Administration*,10,151–177.
- Geller, W. and Karales, K.(1981a),*Split-Second Decisions: Shootings of and by Chicago Police*, Chicago Law Enforcement Study Group, Chicago, IL.
- Greenwald, A.G., Oakes, M.A.,& Hoffman, H.G.(2003). Targets of discrimination: Effects of race on responses to weapons holders. *Journal of Experimental and Social Psychology*, 39, 399–405.
- Jacobs, D. and O'Brien, R.M. (1998), "The determinants of deadly force: a structural analysis of police violence", *American Journal of Sociology*, Vol. 103, pp. 837-62.
- Kania, R.E. and Mackey, W.C. (1977), "Police violence as a function of community characteristics," *Criminology*, Vol. 15, pp. 27-48.
- Kobler, A.L. (1975a), "Figures (and perhaps some facts) on police killing of civilians in the United States, 1965-1969", *Journal of Social Issues*, Vol. 31, pp. 185-91.
- Lewinski, W. and Hudson, W. (2003), *Police Marksman*, "Reaction Times In Lethal Force Encounters," Vol. XXVIII, No. 5, 26-29
- Meyer, M.W. (1980), "Police shootings of minorities: the case of Los Angeles", *Annals of the American Academy of Political and Social Science*, Vol. 452, pp. 98-110.
- Milton, C., Halleck, J.S., Lardner, J. and Albrecht, G.L. (1977), *Police Use of Deadly Force*, Police Foundation, Washington, DC.
- Payne, B.K. (2001). Prejudice and perception: The role of automatic and controlled processes in misperceiving a weapon. *Journal of Personality and Social Psychology*, 81, 181–192.
- Plant, E.A., & Peruche, B.M. (2005). The consequences of race for police officers' responses to criminal suspects. *Psychological Science*, 16, 180–183.

- Plant, E.A., Peruche, B.M., & Butz, D.A. (2005). Eliminating automatic racial bias: Making race non-diagnostic for responses to criminal suspects. *Journal of Experimental and Social Psychology*, 41, 141–156.
- Reisig, M.D., McCluskey, J.D., Mastrofski, S.D., & Terrill, W. (2004). Suspect disrespect toward the police. *Justice Quarterly*, 21, 241–268.
- Skolnick, J.H. and Fyfe, J.J. (1993), *Above the Law: Police and the Excessive Use of Force*, Free Press, New York, NY.
- Smith, B.W. (2004). Structural and organizational predictors of homicide by police. *Policing: An International Journal of Police Strategies and Management*, 27, 539–557.
- Sorenson, J.R., Marquart, J.W. and Brock, D.E. (1993), "Factors related to killings of felons by police officers: a test of the community violence and conflict hypotheses", *Justice Quarterly*, Vol. 10 No. 3, pp. 417-40.
- Sunshine, J., & Tyler, T. R. (2003). The role of procedural justice and legitimacy in shaping public support for policing. *Law & Society Review*, 37, 513–548.
- Tennenbaum, A.N. (1994), "The influence of the Garner decision on police use of deadly force", *Journal of Criminal Law and Criminology*, Vol. 85, pp. 241-60.
- Weitzer, R., & Tuch, S. A. (2004). Race and perceptions of police misconduct. *Social Problems*, 51, 305–325.
- White, M.D. (2002), "Identifying situational predictors of police shootings using multivariate analysis." *Policing: An International Journal of Police Strategies & Management*, Vol. 25 No. 4, pp. 726-751.
- White, M.D. (2000), "Assessing the impact of administrative policy on use of deadly force by on and off-duty police", *Evaluation Review*, Vol. 24 No. 3, pp. 295-318.
- White, M.D. (2001), "Controlling police decisions to use deadly force: reexamining the importance of administrative policy", *Crime and Delinquency*, Vol. 47 No. 1, pp. 131-51.

APPENDICES

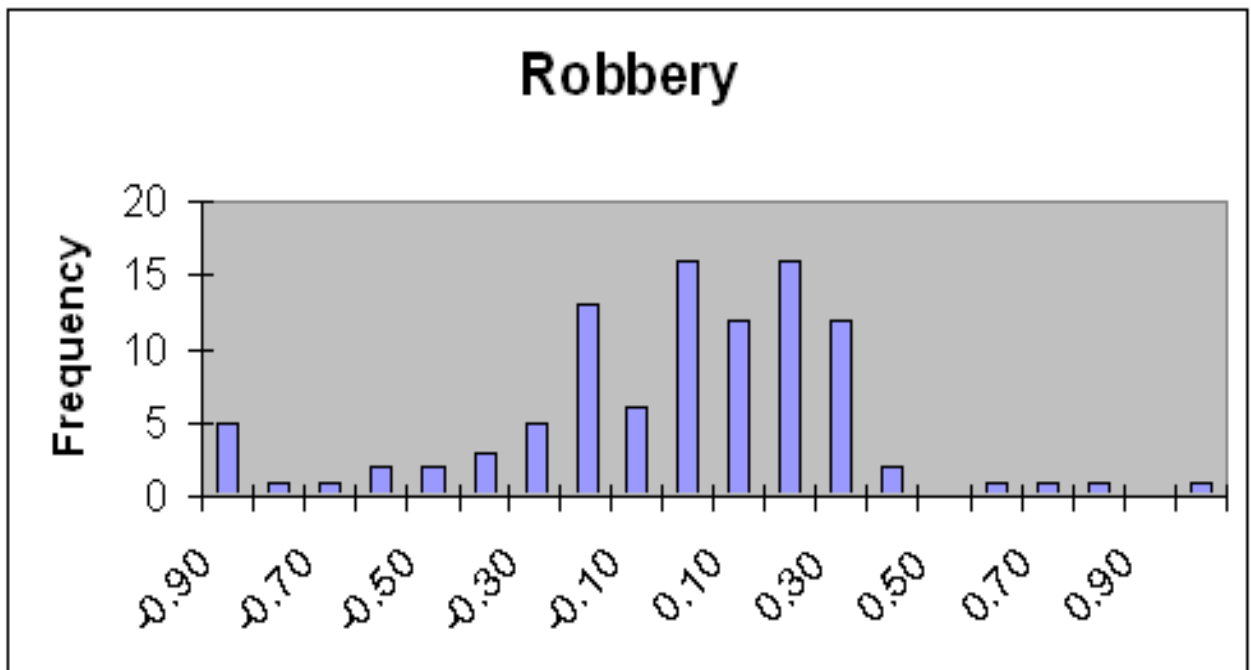
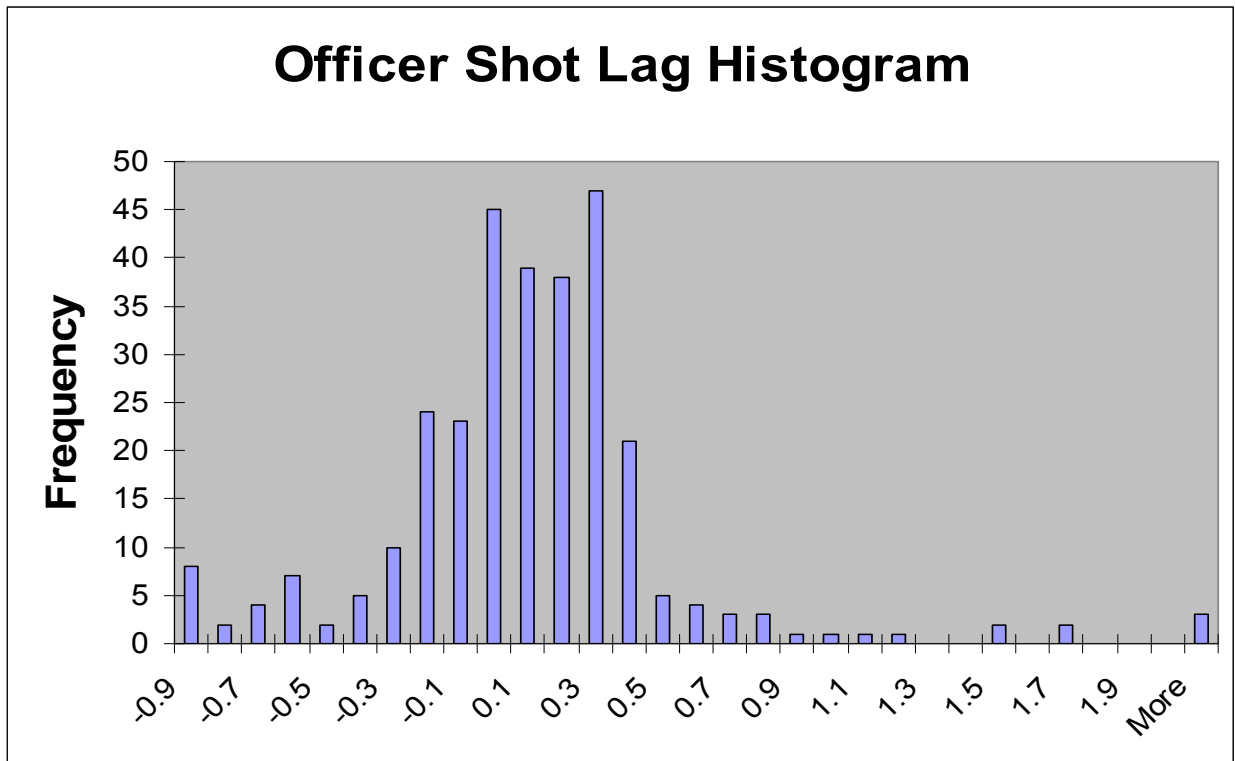
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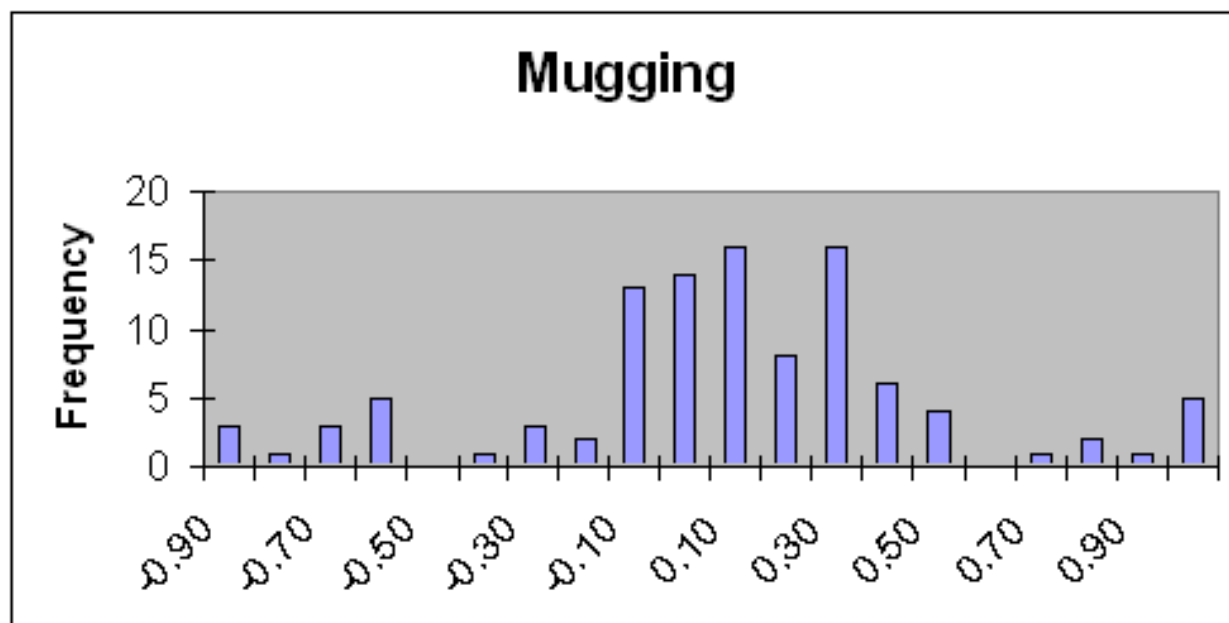
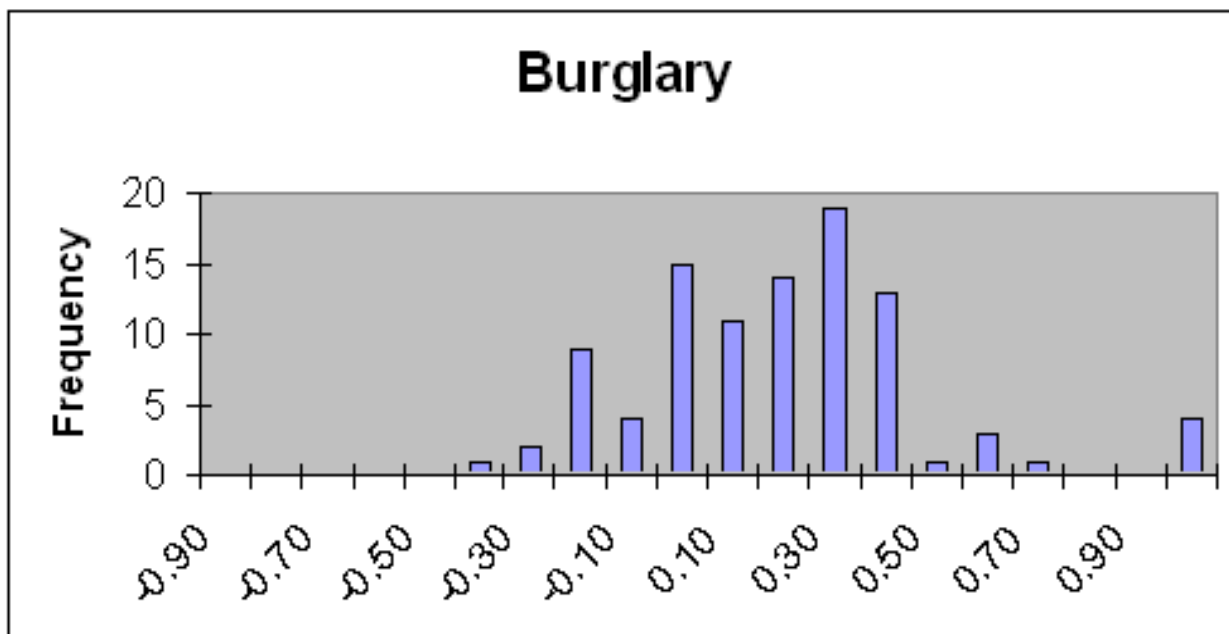
Thomas J. Aveni, MSFP

Thomas J. Aveni has over 20 years of law enforcement experience, having served on the local and state levels in three states (NJ, UT, NH). His police career began in 1978, and he has served as a police trainer since 1983. From 1990 to 2001 Tom served as a police "Training Coordinator" with the once prestigious Smith & Wesson Academy. There he was instrumental in training over 12,000 police and military personnel from across the United States and 23 other countries. He has an undergraduate degree in Criminal Justice from Westfield State College (MA) and a Masters Degree in Forensic Psychology from American International College (MA). He is a co-founder of the Police Policy Studies Council and a frequent lecturer at police training conferences.

Mr. Aveni conceptualized the need and material essence of this study, based on his years of experience training law enforcement officers, and reviewing hundreds of officer-involved shooting narratives. He also served as the primary architect, participant proctor and data gatherer of this study.

Reaction Time Histograms





Measure	<i>Burglary</i>	<i>Robbery</i>	<i>Mugging</i>
Mean	0.166323	0.001	0.035897
Median	0.166667	0	0.066667

First Shot Fired Scenario Summary

Columns in **RED** reflect the Acting Quotient and the time in which the actor fired his first shot in that specific scenario. Scenario numbers are found in the leftward column with the "IES #" header.

IES #	Acting Quotient		Suspect Begins Turn	Suspect's 1 ST Shot Fired	IES #	Acting Quotient		Suspect Begins Turn	Suspect's 1 ST Shot Fired
	Features	V				Features	V		
1	T-LH-U-CH	2	18:27		41	E-LH-U-CH	3	27:17	28:05
2	E-LH-PC-CH	3.5	17:16		42	E-LH-U-OH	2	24:02	
3	E-LH-U-CH	3	19:22	20:15	43	E-HH-U-CH	2	24:07	
4	E-LH-U-HC	2.5	18:15		44	E-LH-FC-CH	4	28:05	28:25
5	E-LH-PC-CH	3.5	21:03	22:00	45	E-HH-U-OH	1	24:22	
6	E-LH-PC-OH	2.5	21:04		46	T-HH-U-CH	1	25:15	
7	E-LH-PC-CH	3.5	19:25		47	E-LH-PC-CH	3.5	28:10	29:10
8	E-LH-PC-CH	3.5	18:21	19:14	48	T-HH-U-OH	0	22:18	
9	E-LH-U-OH	2	19:27		49	T-HH-U-CH	1	22:23	
10	E-LH-PC-CH	3.5	20:25		50	E-LH-FC-CH	4	23:00	23:26
11	E-LH-PC-CH	3.5	20:27	22:03	51	T-HH-U-OH	0	26:08	
12	E-LH-U-OH	2	19:22		52	E-LH-U-CH	3	21:28	
13	E-LH-PC-CH	3.5	18:26		53	E-LH-PC-CH	3.5	24:24	25:14
14	E-HH-PC-CH	2.5	20:04	22:07	54	E-LH-PC-OH	2.5	24:19	
15	E-LH-U-OH	2	20:11		55	E-LH-PC-CH	3.5	21:25	
16	E-HH-U-CH	2	20:25		56	E-LH-PC-CH	3.5	22:26	23:27
17	E-LH-U-CH	2	20:18	21:21	57	T-LH-PC-OH	1.5	23:27	
18	T-LH-U-OH	1	21:02		58	E-LH-U-HC	2.5	23:08	
19	T-LH-U-CH	2	23:35		59	T-LH-U-CH	2	22:22	24:12
20	E-LH-FC-CH	4	22:05	23:07	60	E-LH-U-OH	2	24:00	
21	T-HH-U-OH	0	21:16		61	E-LH-U-CH	3	22:03	
22	T-LH-U-CH	2	21:20		62	E-LH-PC-CH	3.5	22:07	23:01
23	E-HH-FC-CH	3	21:12	23:01	63	E-LH-U-OH	2	23:25	
24	E-LH-PC-OH	2.5	20:00		64	E-LH-PC-CH	3.5	22:22	
25	E-LH-PC-CH	3.5	20:08		65	E-LH-PC-CH	3.5	22:14	23:06
26	E-LH-FC-CH	4	21:11	22:02	66	E-LH-U-CH	3	20:18	
27	E-LH-PC-CH	3.5	20:25		67	E-HH-U-CH	2	20:26	
28	E-LH-FC-CH	4	20:19		68	E-LH-PC-CH	3.5	22:25	23:29
29	E-LH-FC-CH	4	20:20	21:12	69	E-LH-U-OH	2	20:10	
30	E-HH-U-OH	1	22:18		70	E-LH-PC-CH	3.5	22:24	
31	E-LH-U-CH	3	24:07		71	E-LH-PC-CH	3.5	20:15	21:04
32	E-LH-PC-CH	3.5	24:04	24:17	72	E-LH-U-OH	2	26:18	
33	E-LH-U-OH	2	24:12		73	E-HH-U-CH	3	26:04	
34	E-HH-PC-HC	2	23:22		74	E-LH-FC-CH	4	27:02	28:07
35	E-LH-PC-CH	3.5	25:12	26:10	75	T-HH-U-OH	0	23:03	
36	E-LH-U-CH	3	25:07		76	E-HH-PC-CH	2.5	25:01	
37	E-LH-U-OH	2	25:17		77	E-LH-PC-CH	3.5	25:15	26:10
38	E-LH-U-CH	3	26:01	26:18	78	E-LH-U-OH	2	24:28	
39	E-LH-U-OH	2	27:10		79	E-HH-U-CH	2	23:28	
40	E-LH-U-OH	2	25:15		80	T-HH-PC-CH	1.5	23:22	25:17

Suspect's turn toward Officer/Camera: **T** = Tepid **E** = Energetic

"Energetic" turns = at least 90% completed within 1 sec. or in which the suspect fired the 1st shot within 1 sec. of turn initiation.

"Tepid" = turns are those that take more than 1 second to complete at least 90% of the turn toward the camera or fire 1st shot at the camera.

LH = Turn w/ Low-Hands were turns initiated with "gun-hand" at or below the navel area

HH = Turn w/ High-Hands were turns initiated with "gun-hand" above height of navel area

U = Upright-turn

PC = Partial-Crouch: Shoulders slightly forward of the hips with minimal forward lean

FC = Crouch: Knees bent - shoulders noticeably forward of hips with feet planted at least shoulder-width apart

CH = Clenched Hands; suspect turns with clenched hand or hands. This CAN include scenarios where suspect turned with object in hand.

HC = Half-Closed Hand

OH = Open Hands; suspect turned with his/her hands open/unclenched

Participant DeBrief Form Questions

DEBRIEF QUESTION	PARTICIPANT DEBRIEF FORM QUESTIONS	CONSIDER SHOOTING		
		BURG	MUGG	ROBB
1	I used cover and that influenced my decision to	31.72%	22.40%	32.79%
2	I did not use cover and that influenced my decision to	8.44%	5.83%	5.84%
3	I used verbal commands and the suspect's non-compliance influenced my decision to	54.72%	48.70%	54.58%
4	When the subject's hand or hands were concealed from view it influenced my decision to	73.11%	72.28%	72.79%
5	I saw the suspect look over his/her shoulder at me and that influenced my decision to	63.19%	60.46%	70.39%
6	I saw the suspect's shoulder dip as his/her back was to me and that influenced my decision to	55.41%	53.97%	60.66%
7	I saw the suspect's shoulders start to rotate abruptly toward me and that influenced my decision to	64.38%	67.43%	63.16%
8	As the suspect turned toward me I saw his/her right hand at waist height and that influenced my decision to	57.98%	50.49%	52.61%
9	As the suspect turned toward me, I saw <u>something</u> in his/her right hand that influenced my decision to	34.74%	26.07%	19.16%
10	As the suspect turned toward me, I saw <u>nothing</u> in his/her right hand that influenced my decision to	2.29%	2.61%	1.96%
11	As the suspect turned toward me, I <u>couldn't tell</u> if anything was in his/her right hand, influencing my decision to	9.12%	6.54%	7.17%
12	The suspect's outward physical appearance influenced my decision to	14.24%	14.71%	15.58%
12A	AGE	7.44%	6.82%	7.82%
12B	ATTIRE	14.89%	9.80%	13.73%
12C	ETHNICITY	4.85%	3.26%	4.58%
12D	GENDER	10.36%	8.14%	10.78%
12E	SIZE	10.68%	8.50%	10.13%
13	I believe the suspect's outward appearance may have caused me to hesitate in my decision to	9.39%	10.49%	5.88%
14	I believe the suspect's outward appearance may have caused me to hasten my decision to	10.36%	14.10%	12.38%
15	The nature of the call, as I perceived it, influenced my decision to	68.75%	49.67%	68.42%
16	The suspect's proximity to what appeared to be a crime-in-progress may have influenced my decision to	71.01%	59.74%	69.84%
17	The time of day and/or existing lighting conditions may have influenced my decision to	52.29%	51.96%	40.52%
18	The time of day and/or existing lighting conditions may have caused me to hesitate in my decision to	17.48%	20.13%	16.01%
19	If I had believed that I had back-up officers nearby that may have influenced my decision to	11.73%	9.84%	9.18%
20	The suspect's proximity to the crime-in-progress may have influenced my decision to	66.34%	33.11%	63.19%
21	The suspect's initial possession of a pry-bar may have influenced my decision to	67.54%	38.03%	54.07%
22	The suspect's decision to drop the pry-bar may have influenced my decision to	15.26%		

**DEBRIEF
QUESTION**

PARTICIPANT DEBRIEF FORM QUESTIONS

		BURG	SHOOT	ROBB
1	I used cover and that influenced my decision to	5.83%	10.71%	8.77%
2	I did not use cover and that influenced my decision to	3.57%	5.50%	4.87%
3	I used verbal commands and the suspect's non-compliance influenced my decision to	17.92%	19.48%	26.47%
4	When the subject's hand or hands were concealed from view it influenced my decision to	10.49%	7.92%	15.08%
5	I saw the suspect look over his/her shoulder at me and that influenced my decision to	9.45%	6.86%	13.49%
6	I saw the suspect's shoulder dip as his/her back was to me and that influenced my decision to	10.49%	8.94%	14.75%
7	I saw the suspect's shoulders start to rotate abruptly toward me and that influenced my decision to	17.65%	18.09%	25.66%
8	As the suspect turned toward me I saw his/her right hand at waist height and that influenced my decision to	19.22%	19.67%	25.49%
9	As the suspect turned toward me, I saw <u>something</u> in his/her right hand that influenced my decision to	30.84%	34.98%	37.01%
10	As the suspect turned toward me, I saw <u>nothing</u> in his/her right hand that influenced my decision to	0.00%	0.98%	0.65%
11	As the suspect turned toward me, I <u>couldn't tell</u> if anything was in his/her right hand, influencing my decision to	2.93%	2.94%	8.14%
12	The suspect's outward physical appearance influenced my decision to	1.62%	1.63%	3.57%
12A	AGE	0.32%	0.65%	1.95%
12B	ATTIRE	0.97%	1.31%	2.94%
12C	ETHNICITY	0.00%	0.65%	0.33%
12D	GENDER	0.97%	0.98%	1.96%
12E	SIZE	0.65%	0.65%	1.31%
13	I believe the suspect's outward appearance may have caused me to hesitate in my decision to	5.50%	4.26%	6.86%
14	I believe the suspect's outward appearance may have caused me to hasten my decision to	3.88%	2.62%	2.93%
15	The nature of the call, as I perceived it, influenced my decision to	8.88%	4.93%	25.99%
16	The suspect's proximity to what appeared to be a crime-in-progress may have influenced my decision to	14.66%	17.16%	24.59%
17	The time of day and/or existing lighting conditions may have influenced my decision to	9.80%	11.11%	13.73%
18	The time of day and/or existing lighting conditions may have caused me to hesitate in my decision to	5.18%	8.44%	3.59%
19	If I had believed that I had back-up officers nearby that may have influenced my decision to	3.58%	4.26%	2.30%
20	The suspect's proximity to the crime-in-progress may have influenced my decision to	14.71%	11.15%	28.99%
21	The suspect's initial possession of a pry-bar may have influenced my decision to	14.75%	9.51%	24.76%
22	The suspect's decision to drop the pry-bar may have influenced my decision to	4.22%		

DEBRIEF QUESTION	PARTICIPANT DEBRIEF FORM QUESTIONS	NA		
		BURG	MUGG	ROBB
1	I used cover and that influenced my decision to	43.04%	47.73%	39.94%
2	I did not use cover and that influenced my decision to	83.12%	82.20%	85.06%
3	I used verbal commands and the suspect's non-compliance influenced my decision to	18.89%	19.81%	11.44%
4	When the subject's hand or hands were concealed from view it influenced my decision to	1.97%	3.96%	0.98%
5	I saw the suspect look over his/her shoulder at me and that influenced my decision to	19.87%	24.18%	12.17%
6	I saw the suspect's shoulder dip as his/her back was to me and that influenced my decision to	30.49%	31.79%	21.31%
7	I saw the suspect's shoulders start to rotate abruptly toward me and that influenced my decision to	14.05%	11.18%	8.55%
8	As the suspect turned toward me I saw his/her right hand at waist height and that influenced my decision to	14.98%	22.95%	15.69%
9	As the suspect turned toward me, I saw <u>something</u> in his/her right hand that influenced my decision to	27.27%	29.37%	36.36%
10	As the suspect turned toward me, I saw <u>nothing</u> in his/her right hand that influenced my decision to	71.24%	71.34%	67.65%
11	As the suspect turned toward me, I <u>couldn't tell</u> if anything was in his/her right hand, influencing my decision to	81.11%	85.95%	80.13%
12	The suspect's outward physical appearance influenced my decision to	55.34%	59.80%	52.60%
12A	AGE	36.89%	36.36%	34.53%
12B	ATTIRE	30.10%	33.33%	30.39%
12C	ETHNICITY	43.04%	42.02%	41.18%
12D	GENDER	36.89%	36.48%	33.66%
12E	SIZE	36.57%	36.60%	36.27%
13	I believe the suspect's outward appearance may have caused me to hesitate in my decision to	79.29%	78.69%	80.07%
14	I believe the suspect's outward appearance may have caused me to hasten my decision to	79.94%	78.69%	75.24%
15	The nature of the call, as I perceived it, influenced my decision to	16.78%	33.55%	3.95%
16	The suspect's proximity to what appeared to be a crime-in-progress may have influenced my decision to	12.70%	18.15%	4.92%
17	The time of day and/or existing lighting conditions may have influenced my decision to	35.29%	33.66%	43.46%
18	The time of day and/or existing lighting conditions may have caused me to hesitate in my decision to	71.20%	64.29%	74.84%
19	If I had believed that I had back-up officers nearby that may have influenced my decision to	74.92%	74.75%	84.26%
20	The suspect's proximity to the crime-in-progress may have influenced my decision to	17.32%	40.66%	7.17%
21	The suspect's initial possession of a pry-bar may have influenced my decision to	7.21%	45.57%	20.20%
22	The suspect's decision to drop the pry-bar may have influenced my decision to	16.23%		

DEBRIEF QUESTION	PARTICIPANT DEBRIEF FORM QUESTIONS	UNKNOWN		
		BURG	MUGG	ROBB
1	I used cover and that influenced my decision to	0.65%	0.65%	1.62%
2	I did not use cover and that influenced my decision to	0.97%	2.27%	2.60%
3	I used verbal commands and the suspect's non-compliance influenced my decision to	0.65%	0.97%	1.31%
4	When the subject's hand or hands were concealed from view it influenced my decision to	8.52%	9.24%	8.85%
5	I saw the suspect look over his/her shoulder at me and that influenced my decision to	0.65%	1.31%	0.66%
6	I saw the suspect's shoulder dip as his/her back was to me and that influenced my decision to	0.33%	1.66%	1.31%
7	I saw the suspect's shoulders start to rotate abruptly toward me and that influenced my decision to	0.65%	0.66%	0.99%
8	As the suspect turned toward me I saw his/her right hand at waist height and that influenced my decision to	0.33%	0.66%	0.98%
9	As the suspect turned toward me, I saw <u>something</u> in his/her right hand that influenced my decision to	0.00%	0.33%	1.95%
10	As the suspect turned toward me, I saw <u>nothing</u> in his/her right hand that influenced my decision to	1.96%	0.65%	1.96%
11	As the suspect turned toward me, I <u>couldn't tell</u> if anything was in his/her right hand, influencing my decision to	2.61%	0.98%	1.30%
12	The suspect's outward physical appearance influenced my decision to	21.36%	18.95%	22.40%
12A	AGE	48.54%	51.62%	51.14%
12B	ATTIRE	47.57%	51.96%	48.37%
12C	ETHNICITY	49.84%	53.09%	52.61%
12D	GENDER	48.22%	52.44%	51.31%
12E	SIZE	49.51%	51.96%	50.65%
13	I believe the suspect's outward appearance may have caused me to hesitate in my decision to	0.32%	0.66%	1.63%
14	I believe the suspect's outward appearance may have caused me to hasten my decision to	0.65%	0.33%	2.28%
15	The nature of the call, as I perceived it, influenced my decision to	0.99%	0.99%	0.99%
16	The suspect's proximity to what appeared to be a crime-in-progress may have influenced my decision to	0.65%	1.32%	0.66%
17	The time of day and/or existing lighting conditions may have influenced my decision to	0.65%	0.65%	0.98%
18	The time of day and/or existing lighting conditions may have caused me to hesitate in my decision to	1.29%	0.65%	1.63%
19	If I had believed that I had back-up officers nearby that may have influenced my decision to	1.30%	1.64%	0.66%
20	The suspect's proximity to the crime-in-progress may have influenced my decision to	0.98%	0.66%	0.33%
21	The suspect's initial possession of a pry-bar may have influenced my decision to	2.95%	0.33%	0.33%
22	The suspect's decision to drop the pry-bar may have influenced my decision to	2.92%		

DEBRIEF QUESTION	PARTICIPANT DEBRIEF FORM QUESTIONS	NOT SHOOT		
		BURG	MUGG	ROBB
1	I used cover and that influenced my decision to	18.77%	18.51%	16.88%
2	I did not use cover and that influenced my decision to	3.90%	4.21%	1.62%
3	I used verbal commands and the suspect's non-compliance influenced my decision to	7.82%	11.04%	6.21%
4	When the subject's hand or hands were concealed from view it influenced my decision to	5.90%	6.60%	2.30%
5	I saw the suspect look over his/her shoulder at me and that influenced my decision to	6.84%	7.19%	3.29%
6	I saw the suspect's shoulder dip as his/her back was to me and that influenced my decision to	3.28%	3.64%	1.97%
7	I saw the suspect's shoulders start to rotate abruptly toward me and that influenced my decision to	3.27%	2.63%	1.64%
8	As the suspect turned toward me I saw his/her right hand at waist height and that influenced my decision to	7.49%	6.23%	5.23%
9	As the suspect turned toward me, I saw <u>something</u> in his/her right hand that influenced my decision to	7.14%	9.24%	5.52%
10	As the suspect turned toward me, I saw <u>nothing</u> in his/her right hand that influenced my decision to	24.51%	24.43%	27.78%
11	As the suspect turned toward me, I <u>couldn't tell</u> if anything was in his/her right hand, influencing my decision to	4.23%	3.59%	3.26%
12	The suspect's outward physical appearance influenced my decision to	7.44%	4.90%	5.84%
12A	AGE	6.80%	4.55%	4.56%
12B	ATTIRE	6.47%	3.59%	4.58%
12C	ETHNICITY	2.27%	0.98%	1.31%
12D	GENDER	3.56%	1.95%	2.29%
12E	SIZE	2.59%	2.29%	1.63%
13	I believe the suspect's outward appearance may have caused me to hesitate in my decision to	5.50%	5.90%	5.56%
14	I believe the suspect's outward appearance may have caused me to hasten my decision to	5.18%	4.26%	7.17%
15	The nature of the call, as I perceived it, influenced my decision to	4.61%	10.86%	0.66%
16	The suspect's proximity to what appeared to be a crime-in-progress may have influenced my decision to	0.98%	3.63%	0.00%
17	The time of day and/or existing lighting conditions may have influenced my decision to	1.96%	2.61%	1.31%
18	The time of day and/or existing lighting conditions may have caused me to hesitate in my decision to	4.85%	6.49%	3.92%
19	If I had believed that I had back-up officers nearby that may have influenced my decision to	8.47%	9.51%	3.61%
20	The suspect's proximity to the crime-in-progress may have influenced my decision to	0.65%	14.43%	0.33%
21	The suspect's initial possession of a pry-bar may have influenced my decision to	7.54%	6.56%	0.65%
22	The suspect's decision to drop the pry-bar may have influenced my decision to	61.36%		

Participant Consent Form



CONSENT TO PARTICIPATE IN RESEARCH MMRMA DEADLY FORCE PROJECT

You are being asked to participate in a research study conducted by Thomas J. Aveni, under the auspices of the Police Policy Studies Council. This study has been funded in part by the Michigan Municipal Risk Management Authority, the Police Policy Studies Council, and all law enforcement agencies participating in this study. If you have any questions or concerns about the research, please feel free to contact your agency liaison for this study: _____.

PURPOSE OF THE STUDY

This study has been designed to determine what an objectively reasonable officer might do given exposure to certain incident variables. There are no “right” or “wrong” responses in this study and your individual decisions will not be judged as a result.

PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

- Complete the “Officer Profile” form that you are given and then return to the study proctor.
- Please utilize the safety equipment that you are issued and do not remove it until told to do so.
- Assist us in assuring that you have no live ammunition on your person when you arrive for testing.
- Judge each scenario as if you observed or were being dispatched to a similar incident while on duty.
- Use verbal commands where, when and as often as you deem them necessary.
- Deploy your service pistol where and when you deem it to be necessary – re-holstering when you believe it’s appropriate.
- After each scenario culminates, fill out the “Debrief Sheet” that you’ll be issued for eliciting your observations.
- When you have completed your three scenarios and you’ve been released to resume your official responsibilities, PLEASE REFRAIN FROM DISCUSSING THE NATURE OF THE STUDY WITH YOUR PEERS UNTIL THIS STUDY HAS BEEN COMPLETED!

Your time with us, while participating in this study will likely encompass no more than twenty (20) minutes, which includes completion of preliminary and observation report forms.

POTENTIAL RISKS AND DISCOMFORTS

The risks associated with this study are being kept as minimal as possible. No live ammunition will be employed. However, in effort to inject some degree of situational stress into the decision-making process, we’ll be employing a “Return Fire Cannon” that may fire a foam rubber projectile at you. You’ll be given protective equipment that will minimize risk of injury.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

This project will likely provide direct benefits to you, your agency and those that you serve, as it has been designed to provide valuable insights about the critical decision-making process as it pertains to deadly force. From a scientific standpoint, this study will be collecting and evaluating valuable data never before gathered. We believe this will be a ground-breaking study.

PAYMENT FOR PARTICIPATION

This study is being undertaken on a small MMRMA grant and upon the cumulative good will of all participating agencies. There will be no compensated participation in this study and involvement is voluntary.

CONFIDENTIALITY

Every effort will be made to ensure confidentiality of any identifying information that is obtained in connection with this study.

Upon your initial contact with the study's proctor, you'll be assigned a roster number. The roster number that you'll be assigned is for control and auditing purposes only. Upon completion of this study, any and all publication of the results will be devoid of any personal references of those that participated. The participant roster will be kept for a period of 12-24 months for the purpose of facilitating any review or audit of the methodology or analysis involved. Any and all data shared with the participating agencies will be communicated in aggregate and/or categorized formats. The names of participants will not be divulged within the context of individual performance.

All research activities will be videotaped for review and auditing purposes by the PPSC research staff. Video footage will be kept strictly confidential. Each participant has a right to review the taped footage. Taped footage will be kept for 12-24 months for the purpose of facilitating any review or audit of the methodology or analysis involved.

RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. You may exercise the option of removing your data from the study. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise that warrant doing so. If you have questions regarding your rights as a research participant, contact:

Thomas J. Aveni, MSFP
The Police Policy Studies Council
P.O. Box 475
Spofford, NH 03462
877-267-7772 Ext. 2
tom@theppsc.org

SIGNATURE OF RESEARCH PARTICIPANT/LEGAL REPRESENTATIVE

I have read the information provided for the study "MMRMA Deadly Force Project" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____ Name of Participant (please print)	_____ Signature of Participant
_____ Name of Witness (please print)	_____ Signature of Witness

DATE _____