



# Shoot/No-Shoot Decisions: Dissociation, Judgment, and Assailant/Weapon Characteristics

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## Abstract

Shoot/no-shoot decisions in law enforcement are under increasing scrutiny nationwide. However, little research has addressed the ways in which factors related to assailants and weapons influence these decisions. In the present research, images of adult male, adult female, and juvenile (female) assailants presented simulated direct threats to respondents. Assailants were armed with a pistol, a knife, or a glass bottle. Respondents were asked to indicate whether or not they would shoot in the presence of these threats. Respondents also completed the Dissociative Experiences Scale (DES). Tendencies toward dissociation, a process generating a sense of unreality, influenced the performance of males who shot; more dissociated men took more time to fire. However, dissociation did not influence the performance of women. Sex and youth of the assailant had no effects on the shoot/no-shoot performance of either men or women, and oddly, weapon type had no significant effect on women's performance, although men were more likely to fire on an assailant of either age or sex armed with a gun or knife than a bottle. These results are discussed in terms of relevance for law enforcement training and for juridical proceedings in shoot/no-shoot cases.

**Keywords** Shoot/no-shoot decisions · Tactical decisions · Analogue/appraisal theory · Dissociation

## Introduction

Shoot/no-shoot decisions have recently come under increasing scrutiny. The relatively sensational nature of the issues involved has created enormous controversy, covered extensively by the media and perhaps contributing to the significant social unrest surrounding some cases.

Perhaps in view of this attendant sensationalism, relatively little research has addressed the psychological dynamics of such decisions, or of the judgment of these events not only by the officers involved, but by witnesses, jurors, and the general public. The present research represents an initial foray into this very complex, but extraordinarily important, area of forensic cognitive science.

Previous research has strongly indicated that the general public, potential witnesses and jurors, typically have a poor

understanding of the dynamics of shoot/no-shoot decisions (Sharps and Hess 2008; Herrera, Sharps, Swinney, and Lam 2015). It has been shown that under safe and ideal viewing conditions, typically much more clear and infinitely less hazardous than the reality of an armed assailant facing an officer, people have enormous difficulty in recognizing handguns (Sharps, Barber, Stahl, and Villegas 2003) and long guns such as rifles (Herrera et al. 2015), frequently confusing an actual hunting rifle with a BB gun. Typicality or atypicality of a given firearm (McRae, Sharps, Power, and Newton 2013), and the nature of later questioning about the given weapon (McRae, Sharps, and Kimura 2015; Sharps, McRae, Partovi, Power, and Newton 2016b) also significantly influence weapon identification.

The shoot/no-shoot decision process itself is also poorly understood. In studies similar to that reported here, using an identical experimental apparatus, the majority of respondents (without law enforcement training or experience) made the decision to “shoot” an “assailant” threatening a “victim” with a handgun. However, when the assailant was merely gesturing at the victim with a clearly visible power screwdriver, the majority of the respondents also “shot” the individual holding the screwdriver. The difference between the “gun” and “screwdriver” conditions was not significant. Thus, the failure to identify a firearm properly, and to act accordingly, was

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confirmed in the shoot/no-shoot arena, again under virtually ideal viewing conditions (Sharps and Hess 2008). A virtually identical effect was observed in a very similar procedure involving long guns (Herrera et al. 2015) in which respondents were just as likely to decide to “shoot” an assailant armed with a spring-powered BB gun as either a bolt-action or a level-action hunting rifle.

An additional crucial factor emerged in the Sharps and Hess (2008) handgun research. The condition in which the assailant held an actual firearm (a Beretta semi-automatic pistol) deployed to shoot the victim, resulted in an average of 82% of non-law enforcement respondents “shooting” the assailant across the several conditions of the experiment. This was in line with expert police opinion. Senior officers, and tactical commanders who viewed the stimulus scene, confirmed that under field conditions, with an assailant deploying an actual firearm against an actual victim, a 100% “shoot” response was called for. Potentially, to save the life of the victim, any officer confronting this situation must fire on the assailant, under modern police procedure and policies.

However, under these 100% shoot-requirement conditions, under which over 80% of civilian respondents “fired” themselves, only 11.36% of civilian respondents, potential jurors and witnesses, felt that a police officer should ever fire if exposed to the same conditions. Almost all of the civilians “shot the bad guy” themselves; but only about one in ten thought that police officers should ever do the same. Given a 12-person jury adjudicating a given police shoot/no-shoot decision in a court of law, the implications are obvious; if these results extrapolate, approximately only one in 12 jurors are likely to agree, with every police commander and officer, that an entirely justified shooting incident was in fact justified (Sharps and Hess 2008).

Important work has of course been done on racial aspects of shoot/no-shoot phenomena (e.g., Correll, Park, Judd, Wittenbrink, Sadler, and Keese 2007), and the present research did not attempt to integrate these crucial but very complex issues. Rather, for this preliminary effort, we addressed the influence on shoot/no-shoot judgments of other important variables, specifically those involved in perceived threat to the individual making the judgment.

How does level of threat actually operate to influence a shoot/no-shoot situation? Modern appraisal theory suggests that interpretation of any given situation, including a shoot/no-shoot decision, is directly related to the “shooter’s” appraisal of the level of threat to the shooter’s well-being (Smith and Kirby 2009). This appraisal will result in an internal cognitive/affective analogue of the realities encountered, with attributes to which the individual will respond cognitively and affectively.

We would expect the relevant analogue to be constructed interactively according to different aspects and levels of threat. The maturity (man or woman versus youth) and gender of a

given assailant were expected to contribute to this analogue, as was the type of weapon involved. Therefore, in this initial and exploratory effort, we presented respondents with an adult male, adult female, or adolescent assailant, armed with a semi-automatic pistol, a knife, or a beer bottle (all deployed in a threatening manner), in a three-by-three between-subjects manipulation. The working hypotheses governing this experiment predicted the interpretation of adult male assailants as probably the most dangerous, resulting in more and faster “shoot” decisions for male assailants than for female or youth assailants (in this case, a female youth, to provide the maximum expected “spread” of threat, from high to low, in the assailant type). We also anticipated more and faster “shoot” decisions for the gun than for the knife or the bottle.

Individual differences among respondents were also expected to influence results. In the present study, we chose to address dissociation as a potentially contributing individual-difference factor. The reason for this had its genesis in earlier research. In a number of previous studies (e.g., Sharps, Matthews, and Asten 2006; Sharps, Newborg, Van Arsdall, DeRuiter, Hayward, and Alcantar 2010; Sharps 2012; Sharps, Liao, and Herrera 2013, 2014, 2016a), dissociation, the tendency to see a given situation in relatively unreal terms (e.g., Cardena 1997; Carlson and Putnam 1986), was anticipated to delay “shoot” responses, as more dissociated individuals struggled to come to terms with the simulated reality of the given threat. In the dissociation research cited immediately above, subclinical dissociative tendencies predisposed experimental respondents to a variety of unrealistic, sometimes bizarre perceptual and cognitive interpretations of a variety of stimuli; these relatively extreme effects suggested that dissociative processes might also operate in the more prosaic but more serious realm of shoot/no-shoot judgments, contributing to a degree of essential psychological removal of the observer from the immediacy of the shoot/no-shoot situation. Accordingly, the Dissociative Experiences Scale (DES; e.g., Carlson and Putnam 1986), the same instrument used in the dissociation research cited above, was administered.

## Method

### Subjects

Fifty-five male and 96 female college students participated in this study, for course credit. Gender makeup of this sample reflected gender ratios in the courses available. Recent research, especially meta-analysis of individual characteristics in studies of juries (Devine and Caughlin 2014), has upheld the concept that student respondents, such as those employed for this study, are in fact an appropriate and reasonable proxy for the general population of prospective jurors (Maeder, Ewanation, and Monnik 2017), and hence also for the

general population of witnesses and others who might be expected to judge a given shoot/no-shoot situation.

## Materials

Stimulus photographs of “assailants” were shown to respondents, each photograph for up to 10 s, by means of a Lafayette Instruments 71010A tachistoscopic projection apparatus, interfaced to a Lafayette switch-activated timing apparatus and a clock-counter. This compound apparatus was set up on a stand, and was interfaced to a recording switch, held by the respondent, which allowed for observation of shoot/no-shoot decisions, and for measurement of the time required by a given respondent to reach that decision (see “[Procedure](#)” section below). This switch was interfaced by long, light wires (to minimize invasiveness and interference with respondent movement) with the 71010A and the clock/counter. Respondents made their decisions standing, facing the screen and of course holding the switch. As noted above, this apparatus was identical to that used in earlier published shoot/no-shoot research (e.g., Sharps and Hess 2008; Herrera et al. 2015).

The stimulus photographs were projected on a white screen, 12 ft from the respondent position, in a between-subjects manipulation. Each photograph was displayed for up to 10 s unless interrupted by a “shoot decision,” recorded by a switch-press, which terminated the display; if no “shoot” was recorded in 10 s, the response was recorded as a “no-shoot.”

The stimulus photos depicted a casually dressed adult man, adult woman, or adolescent girl as an assailant. (As mentioned above, for this exploratory study, these three photographs were not selected comprehensively across age and sex. They were selected to bracket the extremes of face-valid threat, with the adult male hypothetically representing the highest and the adolescent girl representing the lowest levels of personal threat. Further research will be needed to assess, comprehensively, the effects of all possible combinations of age and gender, together with such factors as assailant size, race, etc., in aggregate.)

Again in a between-subjects manipulation, the given assailant, whether man, woman, or girl, was armed with either a 9-mm Beretta PX-4 semi-automatic pistol, aimed directly at the lens of the photographer’s camera; a Buck stainless-steel hunting knife, deployed overhand in a stabbing position; or a beer bottle, held overhand, as if to strike the photographer in the head. (The third author was the photographer, using a Sony Alpha digital camera at a 12-ft range from the assailant. No one other than the third author had any weapon deployed toward him or her at any time during the course of this study. Obviously, extreme care was taken to ascertain that the Beretta was unloaded throughout the procedure, and we strongly recommend against any attempt to duplicate this procedure

without the implementation and supervision of a very comprehensive and appropriate safety protocol, developed with the active collaboration of qualified firearms experts, as was the case in this study.)

Assailants presented, as far as possible, an identical hostile expression. Each took a natural posture for firing the gun or for preparing to charge the photographer with the knife or the beer bottle.

## Procedure

Participants were initially seated individually at a table, where they completed the required informed consent form and the DES. Then they were asked to rise and stand with the experimenter beside the Lafayette compound apparatus described above.

Respondents were told that they would see a picture on the screen which might or might not depict a threatening situation. They were handed the switch, and its “shoot/no-shoot” function was described. They were told they could decide to “fire” or not to “fire” if they perceived “a threat” in the specific situation. They were told to indicate the decision to “fire,” if they made this decision, by pressing the button on the handheld switch described above. Again, this made it possible to record both firing decision and time to reach that decision if made.

## Results

Interestingly, and contrary to the hypotheses driving this study, neither the age nor the gender of the assailant influenced the decision to shoot or not to shoot, in aggregate or for either male or female respondents. Also, for those who chose to shoot, neither weapon type nor assailant significantly influenced the time to shoot!

In contrast, weapon type significantly influenced the decision to shoot, although not the time,  $\chi^2(2) = 9.97, p = .007$ . The gun resulted in significantly more decisions to shoot than did the knife or the bottle (see [Table 1](#)), at least for male respondents. However, further analysis demonstrated that this effect, statistically significant across respondent gender, was in fact driven only by male respondents. Men’s performance was influenced by weapon type (see [Table 1](#)),  $\chi^2(2) = 7.30, p = .026$ . Women’s performance was not significantly driven by weapon type (see [Table 1](#)), and in fact the handgun resulted in a very slightly lower percentage of female “shooters” than did the knife! These nonsignificant trends may prove to be of heuristic interest; see “[Discussion](#)” section and [Table 1](#).

Dissociative tendencies, as measured by scores on the DES, had no effect on the decision to shoot or not to shoot, for either male or female respondents. For those who chose to shoot, DES scores also had no significant influence on the

**Table 1** Percentage of “shoot” decisions for female and male respondents by weapon type

	Bottle (%)	Knife (%)	Gun (%)
Female respondents	55.6	69.7	66.7
Male respondents	40.0	64.7	82.6

time to shoot for female respondents. However, higher DES scores resulted in a longer time to shoot for male respondents who made that decision,  $R^2 = .210$ ,  $F(1,34) = 9.04$ ,  $p = .005$ ,  $\beta = .458$ . In this context, we would ask the reader to note the following nonsignificant difference in time to shoot between women and men; women who “fired” required an average of 2.45 s (SD = 1.86); males required slightly less time, at 2.25 s (SD = 1.55). The nonsignificant differential is small, only about 8%; but it may still be of importance, as considered below.

## Discussion

Some of the hypotheses driving this research were supported by the results obtained. Others, surprisingly, were not.

Weapon type operated significantly, as expected, on the choice to fire or not to fire. However, it should be acknowledged that this effect was driven only by the performance of male respondents. Assaultants armed with a gun were “shot” more frequently than were those with a knife, who were shot (although not significantly) less frequently than were those armed with a bottle; but, when responses were broken down by gender of respondent, only male respondents produced this significant effect. Female respondents’ performance was not influenced by weapon type, and although women fired at an assailant with a bottle less than at the knife or gun, there was in fact a very slight tendency to fire on the knife-wielding assailant more than on the attacker armed with the Beretta (see Table 1), contrary to any conceivable rational analysis of threat.

Why this differential between men and women? Tentatively, we suggest that males may be more frequent consumers of violent media, videogames, and the like. Even in the absence of actual field experience, males may have thought more about violent situations; the relevant cognitive/affective analogues for dealing with armed violence (see Smith and Kirby 2009) may be more familiar, more practiced at least vicariously, and therefore more available for men. These analogues would be expected to drive the shooting response at a higher level for the more dangerous weapons (the gun over the knife over the bottle), resulting in the male performance actually observed.

Women, on the other hand, may have less vicarious experience with weapons and violence, less practice with

constructing the relevant analogues. Why? In earlier research (Sharps, Welton, and Price 1993; Sharps, Price, and Williams 1994), it was shown that women’s performance on specific spatial cognitive tasks was largely controlled by gender expectations. When the tasks were presented as lying implicitly or explicitly in a stereotypically masculine province, women’s performance typically declined. However, when the masculine stereotyping was de-emphasized, or the use of relevant skills was discussed in stereotypically feminine occupational terms, women performed as well as male counterparts.

Shoot/no-shoot decisions may still be seen, by many people, as stereotypically lying more than in the province of men as of women, and this earlier research in spatial cognition clearly demonstrated the importance of such perceptions and expectations for cognitive performance. Thus, in the present research, when women were confronted with the stereotypically masculine shoot/no-shoot realm, their cognitive and affective construction of the relevant analogues may have responded less to the features of the weapon at hand, and more to the gestalt concept (see Sharps 2003, 2017) of danger or threat, attenuating the weapon-related differential for them.

We therefore suggest that women may frequently be less influenced by the type of weapon on a feature-intensive basis (this is a gun, this is a knife) than on a gestalt basis (this is a threat, regardless of weapon; see Sharps 2003, 2017). The basic concept here is that many women may be more influenced, at the present point in Western sociocultural history, by the gestalt concept of armed threat than by the specific and feature-intensive nature of that threat (the relative lethality of the gun, the knife, and the bottle). Whether these types of considerations apply to the training of female and male security and law enforcement officers remain to be seen. However, these considerations may very well apply to the decision performance of female and male jurors and witnesses required to judge or estimate shoot/no-shoot factors in criminal proceedings. Further research should also address this concept.

Interestingly, there were no differences in shoot/no-shoot decision, or in time to shoot, with reference to the gender or age of the assailants. This was true for both female and male respondents. This finding may be relevant to modern, and salutary, trends in the perception of equality among people. In this experiment, assailant age and sex did not matter. This may prove to be an important fact to communicate to juries and judges in shoot/no-shoot cases involving women and juveniles. Contrary to our initial hypotheses, a man was not seen as more dangerous than a woman or a female juvenile; the expected continuum of threat, based on age and sex, did not materialize.

Dissociative tendencies did not influence shoot/no-shoot decision in terms of tendencies to fire, for either male or female respondents. However, dissociation did result in a significant dilation of the time required to fire, at least on the part of male “shooter” respondents. Why?

Even in the subclinical states of dissociation, which are familiar to the vast majority of people, immediate physical reality may develop an ethereal quality for the observer, and the salience and valence of the real, perceived world may become psychologically subordinate to internal rumination. As suggested above, individuals with a stronger tendency toward dissociation, as measured by the DES, may have a stronger tendency to think in these terms, to push the entire perceptual situation of the shoot/no-shoot stimulus into the realm of relative psychological unreality. In any given shoot/no-shoot situation, if the decision to fire is made, dissociation, with its “is this real?” qualities, may operate to dilate the time frame involved; the respondent must respond both to the time demands of the threat, and to the time demands of overcoming dissociative tendencies to push the threat-based demands out of immediate perceptual reality. As hypothesized above, this is exactly what we observed with our male respondents.

However, dissociation did not have this effect with female respondents. We suggest that the explanation for this finding lies, once again, in an appraisal/analogue theory (see Smith and Kirby 2009). The performance of women may already be influenced by the gender-based expectations that influence the cognitive/affective analogues with which they confront the shoot/no-shoot decision; dissociative factors may operate in tandem with expectation factors, proving redundant rather than synergistic. As noted above, women across all conditions were a nonsignificant 8% slower in firing decision than men; although there are certainly alternative explanations for this preliminary, exploratory effect, it seems likely that this slight differential may represent a slight failure of the full redundant overlap of dissociative processes and expectation factors for women. If so, heuristically, this slight mathematical inconsistency may provide a valuable ingress for developing the understanding of how dissociative processes and expectation interact in the construction of cognitive/affective analogues, in the case of shoot/no-shoot decisions and in other important areas of forensic, cognitive, and affective psychology. Once again, further research is needed and encouraged.

These exploratory initial results, of course, have a number of important limitations and exceptions. This work addressed a simple spectrum of assailant threat (without reference to weapons) from an adult male to an adolescent girl. Future work should address adult, adolescent, and child males and females, across races, with different races of respondent, at different distances. It should be readily possible to adapt these methods to these various assailant characteristics, and it is hoped that the present initial, exploratory results will be seen as heuristic, and will be followed by more comprehensive and systematic experimentation in this important area of applied forensic psychology.

It must also be noted that these respondents had been previously exposed to a number of psychological instruments in other research, including research in other

laboratories. However, this is the case for the vast majority of research involving “subject pools,” and it should further be noted that none of these respondents had previously participated in any research involving instruments which would, on any face- or construct-validity level, be in any way influential on, or “entangled” with, shoot/no-shoot factors or dissociation at either the clinical or the subclinical levels. These respondents were college students, potentially limiting the generality of results; but as discussed above, recent research has supported the legitimate extrapolation of the ubiquitous research with students to the real world of jurors, witnesses, and victims (e.g., Devine and Caughlin 2014).

Finally, it should also be noted that the present research involved a relatively narrow spectrum of weapons, in broad daylight. Illumination and occlusive factors (see Sharps 2017), and additional weapon types (such as the long guns used with increasing frequency; e.g., Herrera, Sharps, Swinney, and Lam 2015) must be addressed in future. The present results stand at the beginning of what will ultimately require many years of research.

Finally, this research addressed the judgment of ordinary non-police respondents: potential victims, witnesses, and jurors. Additional research should address these factors systematically with law enforcement participants, although it must be acknowledged that the judgment of potential victims, witnesses, and jurors is by no means trivial; they form the core of modern criminal investigation and jurisprudence.

These results indicate no differential, in response to assailants, across a spectrum of assailant age and gender. The present findings also indicate significant differentials in response to weapon type between the sexes. This is initial, exploratory research, which will hopefully prove heuristic and generative for further experimentation. For the present, in terms of the judgment of potential jurors and witnesses of the need to respond in shoot/no-shoot decisions, these results have demonstrated the importance of weapon type in the judgments of female and male respondents, and of the importance of subclinical dissociation in the generation of these judgments.

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## Compliance with Ethical Standards

**Conflict of Interest** The authors declare that there is no conflict of interest.

**Ethical Approval** This project received full ethical approval from the Human Subjects Committee, Department of Psychology, College of Science and Mathematics, California State University, Fresno. The project was approved as a “minimal risk” procedure for human subjects.

**Informed Consent** All human subjects of this research were provided with full informed consent according to the ethical standards of the American Psychological Association, standard for this field. All were adults, and all indicated that they had fully read the Informed Consent form and the research descriptions contained therein, and signed the form to give their consent to participation in the research.

## References

- Cardena E (1997) Dissociative disorders: phantoms of the self. In: Turner SM, Hersen M (eds) *Adult psychopathology and diagnosis* (3rd ed.), 400. Wiley, New York
- Carlson EB, Putnam FW (1986) Development, reliability, and validity of a dissociation scale. *J Nerv Ment Disord* 174:727–735
- Correll J, Park B, Judd CM, Wittenbrink B, Sadler MS, Keesee T (2007) Across the thin blue line: police officers and racial bias in the decision to shoot. *J Pers Soc Psychol* 92:1006–1023
- Devine DJ, Caughlin DE (2014) Do they matter? A meta-analytic investigation of individual differences and guilt judgments. *Psychol Public Policy and Law* 20:109–134
- Herrera MR, Sharps MJ, Swinney HR, Lam J (2015) Deadly force or not? Visual and cognitive interpretation of rifles and BB guns in crime-scene context. *J Police Crim Psychol* 30:254–260. <https://doi.org/10.1007/s11896-014-9158-x>
- Maeder EM, Ewanation LA, Monnink J (2017) Juror's perceptions of evidence: the relative influence of DNA and eyewitness testimony when presented by opposing parties. *J Police Crim Psychol* 32:33–42
- McRae K, Sharps MJ, Power J, Newton A (2013) Eyewitness memory for typical and atypical weapons in cognitive context. *J Investig Psychol Offender Profiling* 10. <https://doi.org/10.1002/jip.1410>
- McRae K, Sharps MJ, Kimura N (2015) Error and accuracy in memory for firearms. *Forensic Examiner* 24:1–6
- Sharps MJ (2003) *Aging, representation, and thought: gestalt and feature-intensive processing*. Transaction Publishers, Piscataway
- Sharps MJ (2012) The mental edge: effective cognitive processing in law enforcement. *The Police Chief* 79:100–105
- Sharps MJ (2017) *Processing under pressure: stress, memory, and decision in law enforcement*, 2nd edn. Looseleaf Law, Flushing
- Sharps MJ, Hess AB (2008) To shoot or not to shoot: response and interpretation of response to armed assailants. *Forensic Examiner* 17:53–64
- Sharps MJ, Welton A, Price JL (1993) Gender and task in the determination of spatial cognitive performance. *Psychol Women Q* 17:71–83
- Sharps MJ, Price JL, Williams J (1994) Spatial cognition and gender: instructional influences on mental image rotation performance. *Psychol Women Q* 18:413–425
- Sharps MJ, Barber TL, Stahl H, Villegas AB (2003) Eyewitness memory for weapons. *Forensic Examiner* 12:34–37
- Sharps MJ, Matthews J, Asten J (2006) Cognition, affect, and beliefs in paranormal phenomena: gestalt/feature intensive processing theory and tendencies toward ADHD, depression, and dissociation. *J Psychol* 140:579–590
- Sharps MJ, Newborg E, Van Arsdall S, DeRuitter J, Hayward B, Alcantar B (2010) Paranormal encounters as eyewitness phenomena: psychological determinants of atypical perceptual interpretations. *Curr Psychol* 29:320–327
- Sharps MJ, Liao SW, Herrera MR (2013) It's the end of the world, and they don't feel fine: the psychology of December 21, 2012. *Skept Inq* 37:34–39
- Sharps MJ, Liao SW, Herrera MR (2014) Remembrance of apocalypse past: the psychology of true believers when nothing happens. *Skept Inq* 38:54–58
- Sharps MJ, Liao SW, Herrera MR (2016a) Dissociation and paranormal beliefs: toward a taxonomy of belief in the unreal. *Skept Inq* 40:40–44
- Sharps MJ, McRae K, Partovi M, Power J, Newton A (2016b) Eyewitness memory for firearms: narrative accounts and specific questioning in the elucidation of accurate information. *Journal of Police and Criminal Psychology* 31:288–294. <https://doi.org/10.1007/s11896-015-9184-3>
- Smith CA, Kirby LD (2009) Putting appraisal in context: toward a relational model of appraisal and emotion. *Cognit Emot* 23:1352–1372