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Victims as aggressors: Does victim-bystander status influence eyewitness decision-making in showup procedures?

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**Victims as aggressors: Does victim-bystander status influence
eyewitness decision-making in showup procedures?**

by

Ryan E. Ditchfield

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Major: Psychology

Program of Study Committee:
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The student author, whose presentation of the scholarship herein was approved
by the program of study committee, is solely responsible for the
content of this thesis. The Graduate College will ensure this thesis is globally
accessible and will not permit alterations after a degree is conferred.

Iowa State University

Ames, Iowa

2019

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ABSTRACT

Police rely on eyewitness identifications to solve crimes, but eyewitnesses can make mistakes. These mistakes in decision-making can have serious consequences for the criminal justice system. Eyewitnesses can erroneously identify an innocent suspect as the culprit, which could result in a wrongful conviction, or fail to identify a guilty suspect as the culprit, which could result in the culprit avoiding punishment. Drawing on Berkowitz's (1989) frustration-aggression hypothesis, the current study tested whether eyewitnesses' status as either a victim or a bystander influenced their decision-making processes in a showup procedure after eliminating attention and encoding as possible mediators of the victim-bystander status manipulation. Although victims reported significantly higher feelings of anger than bystanders, victims did not significantly differ from bystanders in identification rates, confidence ratings, response latency, or motivation to catch the guilty culprit. In addition, victims did not significantly differ from bystanders in their ability to distinguish between guilty culprits and innocent suspects. However, analysis of post-identification judgments revealed that victims who made identified innocent suspects reported paying significantly more attention to the culprit, recalling significantly more specific facial features of the culprit, and having a significantly clearer image of the culprit's face than bystanders. In addition, victims reported being significantly more willing to testify in court regarding their identification decision than bystanders. These findings suggest that victims may increase the potency of their positive identifications by bolstering responses to post-identification judgments. Consequently, victims may give the appearance of having a greater ability to accurately identify guilty culprits than bystanders, even in the absence of true differences.

CHAPTER 1. INTRODUCTION

Police rely on eyewitness identifications to solve crimes, but psychological research and DNA exoneration cases have shown that eyewitness identification evidence is often unreliable (Innocence Project, 2019; Wells & Olson, 2003). Nevertheless, eyewitness testimony remains an important source of evidence in the criminal justice system. Understanding how eyewitnesses make decisions will deepen current understanding of eyewitnesses' potential for error and allow the field to develop best practices. Using a novel experimental paradigm in which participants believed that a real crime had occurred, the current study aimed to test whether an eyewitness' status as either a victim or a bystander influences decision-making in the manner predicted by Berkowitz's (1989) frustration-aggression hypothesis. To limit the effects under consideration to eyewitness decision-making during and after the identification procedure, the victim-bystander status manipulation was delayed until immediately prior to the showup procedure. This eliminated attention to and encoding of the culprit as possible mediators of the victim-bystander status manipulation. In addition, this study examined decision-making in the context of showups: an identification procedure in which an eyewitness is presented with a single suspect and the eyewitness then decides whether the person presented is the culprit (Smith, Wells, Lindsay, & Penrod, 2017).

Using Berkowitz's (1989) revised frustration-aggression hypothesis as a theoretical framework, positive identifications during an eyewitness procedure can be defined as aggressive behavior. If victims experience a criminal event as more frustrating than bystanders, victims should experience increased anger and an increased desire to resolve the criminal event by making a positive identification. In addition, victims' increased aggression should lead to

bolstering of self-reported ability to accurately identify the culprit and self-reported decision-making performance. Bolstering increases the potency of a positive identification by making an identification appear more trustworthy to investigators, thereby increasing the likelihood that the criminal event is resolved. Three objectives were developed to test this theoretical framework. The first objective was to test whether victim-bystander status influenced decision-making at the time of identification, specifically, identification rates, confidence ratings, and response latency. The second objective was to test whether victim-bystander status influenced post-identification judgments of self-reported ability to identify the culprit and self-reported certainty in positive identifications. The third objective was to test whether the effects of victim-bystander status on decision-making were mediated by anger and desire to resolve the criminal event.

By addressing these objectives, this research advances understanding about eyewitness decision-making processes and examines implications for identification performance and eyewitness testimony. The current chapter discusses case law and research relevant to police showup procedures, outlines factors influencing eyewitness identification, and provides an overview of eyewitness decision-making and its relation to Berkowitz's (1989) frustration-aggression hypothesis.

The Use of Showup Procedures in the United States

The majority of eyewitness identification studies have focused on the police lineup: a procedure in which a criminal suspect is placed among known innocents (i.e., fillers) and is then shown to an eyewitness to determine if the eyewitness can identify the suspect as the culprit (Wells & Olson, 2003). This study focused on a less-studied procedure: the showup. A showup is an identification procedure in which an eyewitness is presented with a single suspect and the eyewitness then decides whether the person presented is the culprit (Smith et al., 2017). Recent

behavioral science research has demonstrated that showups are suggestive and promote worse applied outcomes than lineups (Smith et al., 2017). It is important to note, however, that lineups are not superior to showups because they improve eyewitnesses' ability to distinguish between innocent suspects and guilty culprits. Indeed, showups have been shown to produce more correct rejections than lineups (Smith et al., 2017). Instead, the lower rate of innocent suspect identifications in lineups can be attributed to differential filler siphoning, whereby false alarms are spread away from the innocent suspect and toward the lineup fillers (Smith et al., 2017). As showups have no fillers to draw away false alarms from an innocent suspect, showups result in more false identifications of innocent suspects than lineups.

Despite this evidence, showups are still used by approximately 62% of police agencies in the United States. This makes showups second only to photo lineups (used by over 94% of agencies), and considerably more common than other identification procedures such as composite sketches (35.5%), mugshot searches (28.8%), and live lineups (21.4%) (Police Executive Research Forum, 2013). The argument by police in favor of showups is largely practical. To be detained long enough to conduct a live lineup, suspects need to be placed under arrest. Likewise, creating a lineup and presenting it to a witness is time consuming, even if photos of the suspect and potential fillers already exist in police records. Showups, on the other hand, can be conducted quickly and do not require the suspect to be detained for a long period of time (Smith, Wells, Lindsay, Myerson, Kovera, & McAuliff, 2018). Furthermore, even a detained, arrested suspect can agree to a showup rather than a lineup. These facts mean that showups will likely not be abandoned by police departments in the near future. As such, showups remain an important area of study and researchers should continue to examine showups and develop procedures to improve their diagnostic value.

Case Law Related to Showups

The Supreme Court recognized the substantial risks of bias in lineups and showups as early as the 1960s. In a series of cases known as the Wade Trilogy (*United States v. Wade*, 1967; *Gilbert v. California*, 1967; *Stovall v. Denno*, 1967), the Court established the *totality of the circumstances* standard for admissibility of showup and lineup evidence in court (Agricola, 2009). Notably, the Court considered the dangers of suggestion to be stronger in showups.

In the 1970s, however, the Court established a new view of the *totality of the circumstances* standard in two seminal cases. In *Neil v. Biggers* (1972), the Court outlined five factors to be considered when evaluating the reliability and admissibility of showups: (1) opportunity of the witness to view the criminal at the time of the crime, (2) the witness's degree of attention at the time of the crime, (3) the accuracy of the witness's prior description of the criminal, (4) the level of certainty demonstrated by the witness at identification, and (5) the length of time between the crime and the identification. The Court then reaffirmed this new standard in *Manson v. Brathwaite* (1977), ruling that a flawed procedure did not necessarily invalidate an identification when the procedure satisfied all or some of these guidelines. In practice, however, the courts have rarely found a showup to be so suggestive as to warrant a reversal of a criminal conviction; few, if any, showups are ever excluded under the current standards (Cicchini & Easton, 2010).

Furthermore, the *totality of the circumstances* standard has not survived scientific scrutiny. Research on eyewitness identification has demonstrated that, when compared to lineup procedures, showups lead to more innocent suspect identifications and similar rates of guilty culprit identifications (Stebly, Dysart, Fulero, & Lindsay, 2003; Wetmore, Neuschatz, Gronlund, Wooten, Goodsell, & Carlson, 2015). This has led experts to recommend additional

legal reforms and has even led some experts to conclude that showups should not be allowed as evidence in court (e.g., Agricola, 2009). Recently, New York, Massachusetts, and Wisconsin have adopted reforms that prohibit showups as evidence unless police lacked probable cause to arrest and detain the suspect long enough to construct a photo lineup, or exigent circumstances prevented the use of a photo lineup (Cicchini & Easton, 2010). However, these reforms are not intended to prevent the use of showups entirely. Although the legal system has recognized potential problems with showups, showups will likely continue to be used under the legal presumption that they have probative value. Accordingly, it remains important to study the psychological processes that operate during showups.

Factors Influencing Eyewitness Identification

To better understand the processes that operate during eyewitness identification, a taxonomy has been developed to categorize factors that influence eyewitness performance (Wells, 1978; Wells & Olson, 2003). Factors outside the justice system's control are known as *estimator variables*; factors under the control of the criminal justice system are known as *system variables*. The following section outlines relevant research on these factors.

Estimator Variables

Two categories of estimator variables can influence eyewitness accuracy: characteristics of the eyewitness (e.g., the cross-race effect) and characteristics of the witnessed event (e.g., a suspect wearing a disguise; Wells & Olson, 2003). Most estimator variable research has examined the effects of these variables using lineups; few studies have examined their effects using showups. One estimator variable that has been examined using showups is clothing bias. Clothing bias occurs when a suspect appears in the identification procedure wearing clothing similar to the culprit's clothing described by eyewitnesses, and has been shown to increase false

identifications in lineups, mug shots, and showups (Dysart, Lindsay, & Dupuis, 2006; Lindsay, Wallbridge, & Drennan, 1987; Lindsay, Nosworthy, Martin, & Martynuck, 1994; Yarmey, Yarmey, & Yarmey, 1996). This demonstrates that estimator variables that negatively impact eyewitness accuracy in lineups may also have detrimental effects in showups.

System Variables

System variables, on the other hand, can be organized into five categories: instructions to the witness (e.g., instructing the witness that it is equally important to clear the innocent and identify the guilty), content of the identification procedure (e.g., selection of fillers), presentation method (e.g., simultaneous vs. sequential lineups), behavioral influence (e.g., use of double-blind procedures), and base rates (e.g., how likely it is that a suspect is innocent) (Wells & Olson, 2003; Smalarz & Wells, 2014). For example, researchers and the Department of Justice have recommended the use of a “may or may not be present” instruction (otherwise known as the “standard admonition”) for nearly two decades (Clark, 2012; Technical Working Group for Eyewitness Evidence, 1999). Employing the standard admonition in lineups has been shown to reduce mistaken identifications in culprit-absent lineups by 41.6% while reducing accurate identifications by only 1.9% (Stebly, 1997). Accordingly, system variables like the standard admonition can provide relatively simple techniques for police to offset the limitations of eyewitness procedures.

Eyewitness Decision-Making

In a showup procedure, a guilty culprit is either present or not, and an eyewitness either identifies the guilty culprit or does not. Therefore, there are four possible outcomes: a hit (the guilty culprit is present and the eyewitness makes a positive identification), a miss (the guilty culprit is present and the eyewitness rejects the showup by refusing to make an identification), a

false alarm (an innocent suspect is present and the eyewitness makes a positive identification), or a correct rejection (an innocent suspect is present and the eyewitness rejects the showup by refusing to make an identification). Ideally, an eyewitness should always make a positive identification when the guilty culprit is present and should always reject the showup when an innocent suspect is present. Of course, eyewitnesses can and do make mistakes (Innocence Project, 2019). Therefore, it is important to examine how eyewitness decision-making can lead to errors. To this end, the current study examined eyewitnesses' decision-making at the time of identification and eyewitnesses' post-identification judgments.

Decision-Making at Identification

Eyewitness decision-making outcomes at the time of an identification procedure include identification rates, confidence ratings, and response latency. Identification rates reflect the ratio of positive identifications to non-identifications in a sample of eyewitnesses. Any shift in eyewitnesses' identification rates will yield a corresponding tradeoff in costs and benefits (Dobolyi & Dodson, 2013; Palmer & Brewer, 2012). Higher identification rates will increase hits but also increase false alarms. Conversely, lower identification rates will decrease false alarms but also decrease hits. However, it is important to note that as identification rates shift, the ratio of correct decisions to errors remains the same. In other words, shifts in identification rates do not correspond to changes in eyewitnesses' ability to distinguish between guilty culprits and innocent suspects (Palmer & Brewer, 2012). Instead, eyewitnesses' ability to distinguish between guilty culprits and innocent suspects is reflected by shifts in the ratio of hits to false alarms. When hits are frequent and false alarms are rare, one can infer that eyewitnesses can easily distinguish between guilty culprits and innocent suspects. On the other hand, when the ratio of

hits and false alarms are close to equal, one can infer that eyewitnesses are performing no better than chance in a showup procedure.

Confidence is an eyewitness' certainty in her or his identification decision. For an eyewitness who makes a positive identification, confidence indicates her or his level of certainty that the person she or he identified is the guilty culprit. For an eyewitness who rejects a showup, confidence indicates certainty that the guilty culprit was not present. One can further distinguish between immediate and delayed confidence. Immediate confidence refers to confidence ratings given immediately following the showup procedure, whereas delayed confidence refers to confidence ratings given in a post-identification setting, up to and including testimony in court. Recent research has indicated that confidence ratings can shift as soon as 10 minutes after an identification procedure (Eisen, Cedré, Williams, Jones, Kovera, & McAuliff, 2018). Therefore, it is important to examine effects on both immediate and delayed confidence judgments.

Response latency is the time from when an eyewitness is first presented with a suspect to when the eyewitness makes a final identification decision (Brewer, Caon, Todd, & Weber, 2006; Weber, Brewer, Wells, Semmler, & Keast, 2004). Past research has shown that response latency can provide useful information about eyewitness decision-making and performance. For example, faster reaction times are reliably associated with higher accuracy, as stronger memory traces of the culprit's face are easier to retrieve than weak memory traces (Robinson, Johnson, Herndon, & Murphy, 1997). However, the relationship between response latency and accuracy is relatively weak and the time frame for accurate identifications is highly variable across experiments and situations, ranging from 5 to 29 seconds (Brewer et al., 2006; Weber et al., 2004). Furthermore, it is important to note that response latency is not the same as reaction time;

response latency is a less precise tool than reaction time and therefore has less ability to detect effects on eyewitness decision-making (Brewer et al., 2006).

Post-Identification Judgments

In the real world, eyewitness decision-making does not end after an identification decision is reached. Eyewitnesses may also be asked to testify in court regarding their identification decision and the witnessed criminal event. Past research suggests that eyewitnesses' testimony is evaluated based on how confident eyewitnesses are, what eyewitnesses claim about their viewing conditions, and how much attention eyewitnesses claim they paid during the criminal event (Bradfield & Wells, 2000). When eyewitnesses are not given feedback or influenced in any way, mock-jurors can accurately differentiate between correct and mistaken eyewitness testimony (Smalarz, Wells, & Kovera, 2014). However, mock-jurors' ability to distinguish between accurate and mistaken eyewitness testimony disappears when eyewitnesses receive even minor confirming feedback about their identification decision (Eisen, 2018; Smalarz, Wells, & Kovera, 2014).

To date, eyewitness research has identified several system variables that influence post-identification decision-making and eyewitness testimony, such as steering effects and post-identification feedback (Eisen et al., 2018; Smalarz, Wells, & Kovera, 2014). However, it is also possible that estimator variables can influence eyewitnesses' perceptions regarding the witnessed event and their ability to make an accurate identification. Indeed, there is no theoretical reason to believe that estimator variable effects on eyewitness decision-making stop after an identification decision is made. Therefore, it is important to examine effects on eyewitness decision-making both during and after an identification procedure.

Decision-making at identification revolves around eyewitnesses' decisions to make a positive identification or reject the showup procedure. In contrast, decision-making in the post-identification stage can be distilled down to two types of judgments: eyewitnesses' perceived *ability* to correctly identify the culprit and, among eyewitnesses who make a positive identification, eyewitnesses' perceived *certainty* in their identification decision. Eyewitnesses' perceived ability to identify the culprit stems from perceived viewing conditions and memory for the culprit at the time of the crime. Perceived certainty in a positive identification, on the other hand, is reflected by judgments related to ease of identification, delayed confidence ratings, and time needed to make an identification. Eyewitnesses' judgments in both of these categories can impact the nature and believability of their testimony.

Victim-Bystander Status and the Frustration-Aggression Hypothesis

Victim-bystander status is one estimator variable that could potentially influence eyewitnesses' decision-making during and after an identification. There is theoretical reason to believe that victims are more likely to make an identification than bystanders. Under Berkowitz's (1989) revised formulation of the frustration-aggression hypothesis, frustrations are defined as aversive events that people would normally seek to avoid and that give rise to aggressive behavior. These unpleasant events produce negative affect (i.e., feelings that individuals seek to reduce or eliminate), which in turn generates aggressive tendencies (Berkowitz, 1989). Although Berkowitz posited that any kind of negative affect will produce aggressive inclinations, the revised frustration-aggression hypothesis specifically highlights the role of anger. However, the presence of an aversive event and feelings of anger are not sufficient by themselves to produce aggressive behavior. Rather, aggression is likely to occur following aversive events if a suitable target is nearby, if non-aggressive behaviors do not eliminate the aversive event, if restraints

against aggression are relatively weak, and if the aversive event is perceived as a deliberate personal attack (Berkowitz, 1989).

Berkowitz's (1989) frustration-aggression hypothesis has two implications for victim-bystander status and eyewitness identification. First, crime can be viewed in the context of the frustration-aggression hypothesis as a deliberate and unjustified aversive event. Although bystanders may experience a criminal event as aversive, victims of a crime may additionally experience it as a personal attack. Second, a positive identification of a suspect has potential negative consequences for the suspect, regardless of the suspect's guilt or innocence. Therefore, identifying a suspect as the guilty culprit can be framed as an act of aggression. The following section examines how the frustration-aggression hypothesis can inform predictions regarding the effects of victim-bystander status on eyewitness decision-making, both during and after an identification.

Aggression and Eyewitness Decision-Making

The following section considers the effects of victim-bystander status on eyewitness aggression in terms of decision-making at identification and post-identification judgments. In addition, this section examines two potential mediators of the relationship between victim-bystander status and eyewitness aggression: anger and desire to resolve the aversive event.

Decision-making at identification. As noted earlier, there are typically three components to eyewitness decision-making at the time of an identification: the identification decision itself, immediate confidence ratings, and response latency. In terms of Berkowitz's (1989) frustration-aggression hypothesis, the offer of a potential identification of the culprit allows both victims and bystanders a chance to eliminate the aversive event (i.e., by catching the culprit). However, because the aversive event is more personal and frustrating for the victim than

the bystander, victims should experience greater anger and an increased desire to resolve the aversive event. This increase in anger and desire to resolve the aversive event should lead to victims having a higher tendency to aggress against the culprit by making a positive identification. Therefore, victims should make more positive identifications of both guilty culprits and innocent suspects, resulting in an increase in identification rates compared to bystanders.

Whereas positively identifying a suspect can be considered an aggressive act under Berkowitz's (1989) frustration-aggression hypothesis, immediate confidence ratings and response latency can be considered behaviors that increase the potency of the aggressive act. In other words, among eyewitnesses who do aggress by making a positive identification, these decision-making outcomes reflect the strength or potency of aggression. Higher confidence by eyewitnesses who make a positive identification conveys increased certainty to investigators that the suspect is, indeed, the culprit. Thus, expressions of greater confidence may be perceived by eyewitnesses as enabling faster resolution of the criminal event. If victims do experience a greater desire to resolve the aversive event than bystanders, it follows that victims should express higher confidence than bystanders in their positive identifications, in order to increase the likelihood that the identified suspect will be captured and punished.

It is also possible that victim-bystander status could influence response latency. One theoretical explanation for this effect lies in Berkowitz's (1990) cognitive neoassociative model: victimization generates anger, which in turn activates ideas, memories, and schemas associated with aggression. This increased activation of aggression schemas due to victimization may result in victim-bystander status facilitating an aggressive response, thereby causing eyewitnesses to make identifications sooner and resulting in faster response latency (Berkowitz, 1990). However,

it should be noted that faster response latency due to the priming effect of victim-bystander status does not necessarily need to operate via anger, as Berkowitz (1990) suggests. Aggression schemas could also be directly activated by victimization via semantic priming (Hutchison, 2003). With that said, both theoretical explanations suggest that victims should have faster response latency when making an identification than bystanders.

Post-identification judgments. As with immediate confidence ratings and response latency, post-identification judgments may also reflect the strength of eyewitnesses' aggression. Specifically, eyewitnesses who aggress by making a positive identification may bolster their post-identification judgments in order to frame their positive identification decision as trustworthy and reliable, enabling faster resolution of the aversive event. Eyewitnesses may be particularly likely to do so when their post-identification judgments could have an impact on the resolution of the criminal event. Therefore, an examination of post-identification judgments in the context of the frustration-aggression hypothesis requires that eyewitnesses believe that their post-identification judgments could have a real impact on the case.

Mediators of eyewitness aggression. Berkowitz's (1989) frustration-aggression hypothesis highlights two potential mediators of aggressive behavior: anger and desire to resolve aversive events. Notably, the revised frustration-aggression hypothesis states that not all aversive events are equally frustrating and that not all individuals will experience an aversive event in the same way. Instead, the exact nature of the aversive event is not as important as the intensity of the resulting negative affect, and, in particular, the intensity of the resulting feelings of anger (Berkowitz, 1989). If victims do experience a criminal event as more aversive than bystanders, one would therefore expect that victims would report experiencing greater anger at the time of the aversive event.

Although Berkowitz primarily focused on the role of negative affect in his revised formulation of the frustration-aggression hypothesis (1989), individuals must also experience a desire to resolve the aversive event before an aversive event results in aggressive tendencies. When social norms prohibit an aggressive response or when an event is simply seen as not aversive enough to warrant frustration, individuals may not feel the need to resolve the event by acting aggressively (Berkowitz, 1989; Cohen, 1955). In an eyewitness identification setting, social norms do not necessarily prohibit eyewitnesses from making a positive identification; in fact, one can consider social norms as encouraging eyewitnesses to make a positive identification. Eyewitnesses' motivation to catch the guilty culprit is, of course, tempered by a motivation to avoid identifying innocent suspects. However, this does not take away from the fact that, in order for an eyewitness to help resolve a criminal event, she or he must make an identification decision that results in the capture of the guilty culprit. A positive identification of the guilty culprit moves an eyewitness closer to resolving the event, whereas the rejection of an innocent suspect does not. It follows that victims' higher desire to resolve the aversive event should lead to victims being more motivated than bystanders to catch the guilty culprit.

Review of Previous Victim-Bystander Research

The procedures used in this study were adapted from two studies that investigated the effects of victim-bystander status on eyewitness decision-making. In the first study (Hosch & Cooper, 1982), victim-bystander status manipulated whether participants believed that a confederate had stolen a participant's watch (victim condition), a calculator belonging to the laboratory (bystander condition), or neither (control condition). In the second study (Kassin, 1984), victim-bystander status manipulated whether participants believed that a thief had stolen money from them (victim condition) or their partner (bystander condition). In both studies,

participants were run in pairs and were presented with a single culprit-present lineup. Notably, these studies produced conflicting findings regarding victim-bystander status. There were no significant differences in accuracy between victims and bystanders in the first study, although accuracy was significantly worse in the no-theft condition (Hosch & Cooper, 1982). In contrast, victims were significantly less accurate than bystanders in the second study, with no victims making a correct identification of the culprit (Kassin, 1984).

Five limitations of these studies reduced their utility in examining the effects of victim-bystander status on eyewitness decision-making. First, both studies had small sample sizes: 33 pairs of participants in the Hosch and Cooper (1982) study and 15 pairs of participants in the Kassin (1984) study. The low statistical power of these studies reduces confidence in the estimates of effect sizes for victim-bystander status.

Second, although running participants in pairs can facilitate data collection, doing so removes an experimenter's ability to control for effects of the partner on the participant. It is possible, for example, that bystanders' or victims' reactions to a theft may drive eyewitnesses' decision-making, rather than the psychological impact of victimization on eyewitnesses. Although the effect of partner reactions on eyewitness decision-making may be an important area to address, a thorough examination of victim-bystander status should either account for these effects or eliminate them as a possible mediator.

Third, both studies only employed culprit-present lineups, preventing a full analysis of eyewitness performance. In experimental studies examining eyewitness decision-making, a culprit-absent lineup or showup is necessary to calculate the diagnostic value of suspect identifications by using the ratio of hits in culprit-present lineups to false alarms in culprit-absent

lineups (Wells & Olson, 2003). In other words, these preliminary studies on victim-bystander status only had the potential to capture one half of eyewitness decision-making.

Fourth, participants in both studies were aware of their victim-bystander status at the time of the theft. This may have led to differential attention and encoding of the culprit, in addition to differential identification rates at identification. In other words, victims may have paid attention to the culprit in a manner different from bystanders at the time of the crime, leading to differences in accuracy that cannot solely be attributed to identification rates. This makes it difficult to pinpoint whether the effects of victim-bystander status influence decision-making during encoding, after encoding, or both.

Finally, in both studies participants were debriefed about the staged theft prior to identification. This means that participants were aware that their identification decision would have no actual consequences for the culprit, the victim, or the bystander. In the real world, eyewitness identification procedures always involve consequences and risk. A missed identification can lead to a culprit getting away while an identification of an innocent suspect can result in wrongful conviction. Debriefing participants prior to the identification procedure removes these consequences from an eyewitness' decision-making calculus.

With that said, little is known about decision-making by eyewitnesses who believe that their decisions could have real consequences. Almost all experimental eyewitness studies have examined eyewitness decision-making in the absence of perceived real-world consequences (for a notable exception, see Eisen et al., 2017). That is, participants in most eyewitness studies do not believe that an incorrect identification has any additional cost beyond simply being wrong. In addition to reducing generalizability of the findings to the real world, it is possible that perceptions of the victimization and identification consequences as real are prerequisites for

victim-bystander effects on eyewitness decision-making. However, neither of the paradigms used in the Hosch and Cooper (1982) or Kassin (1984) studies can account for these effects.

Hypotheses

Based on Berkowitz's (1989) frustration-aggression hypothesis, victims should experience greater anger and an increased desire to resolve the aversive event. This increase in anger and desire to resolve the aversive event should lead to victims having a higher tendency to aggress against the culprit by making a positive identification. Therefore, my primary prediction was that victims would have higher identification rates than bystanders. In addition, higher confidence ratings convey greater certainty in a positive identification to investigators. Finally, Berkowitz' (1989) frustration aggression hypothesis suggests that victims should have faster response latency than bystanders, in order to resolve the aversive event in a faster manner, whereas Berkowitz's (1990) cognitive neoassociation model suggests that victimization will activate aggression schemas that will lead to faster identifications and therefore faster response latency. Therefore, I also predicted that victims who made a positive identification would have higher immediate confidence ratings than bystanders and take less time than bystanders to make positive identifications.

In this study, the effects of victim-bystander status on post-identification judgments were examined in terms of eyewitnesses' perceived ability to correctly identify the culprit and eyewitnesses' perceived certainty in their positive identification decision. Bolstering responses to post-identification judgments increases the apparent reliability of eyewitnesses' positive identification in the eyes of investigators, thereby increasing the potency of eyewitnesses' positive identification and enabling faster resolution of the criminal event. However, it is important to note that this only applies to eyewitnesses who chose to aggress by making a

positive identification. Eyewitnesses who reject a showup gain no benefit from bolstering their post-identification judgments, as a non-identification does not move a criminal event closer to resolution. Therefore, it was predicted that, among eyewitnesses who made a positive identification, victims would respond to post-identification judgments in a way that bolsters the apparent reliability of their positive identification.

To this end, I made several predictions regarding the specific manner in which victims' bolstering of post-identification judgments would occur. In regards to eyewitnesses' perceived ability to correctly identify the culprit, it was predicted that, compared to bystanders, victims who made a positive identification would report (1) a better view of the culprit, (2) better ability to make out specific features of the culprit's face, (3) more attention paid to the culprit's face, (4) a clearer image of the culprit, and (5) better general recognition memory for strangers' faces in general. In regards to eyewitnesses' perceived certainty in their positive identification, it was predicted that, compared to bystanders, victims who made a positive identification would report (1) higher delayed confidence, (2) a better basis to make the identification, (3) greater ease in identifying the culprit, and (4) less time to make the identification. In addition to these post-identification judgments of ability and certainty, I also predicted that victims would report higher willingness to testify in court than bystanders that the person they identified was the culprit.

Finally, I made two predictions regarding the effect of victim-bystander status on the potential mediators of anger and motivation to catch the guilty culprit. According to Berkowitz's (1989) revised frustration-aggression hypothesis, aversive events produce anger and that this increase in anger leads to aggressive tendencies. Therefore, I predicted that victims would report greater anger than bystanders when informed that a thief had stolen their cellphone, and that this increase in anger would mediate the effects of victim-bystander status on eyewitness decision-

making. The revised frustration-aggression hypothesis also suggests that aversive events only produce aggressive tendencies when one has a desire to resolve the aversive event. In this study, desire to resolve the aversive event was assessed indirectly in terms of eyewitnesses' motivation to catch the guilty culprit. Therefore, I predicted that victims would report a higher motivation to catch the guilty culprit than bystanders, and that this increased motivation to catch the guilty culprit would mediate the effects of victim-bystander status on eyewitness decision-making.

CHAPTER 2. METHOD

Methods

Sample Size Estimation

Power analysis for logistic regression was conducted using the guidelines established in the G*Power 3.1.7 manual (Faul, Erfdelder, Lang, & Buchner, 2007) to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, a small effect size (odds ratio = 1.44), a two-tailed test, and a probability of identifying the guilty culprit equal to 0.5. Based on these parameters, the minimum sample size required to detect the proposed effect is 253. The sample size in this experiment exceeded this minimum.

Participants

Participants ($n = 332$) were adult undergraduates enrolled in courses at Iowa State University who received course credit for their participation. Nine participants were removed due to high suspicion and an additional nine participants were removed because they either reported not seeing the thief enter the room or were an acquaintance, friend, or relative of the thief. Finally, a total of 22 participants were terminated early due to technical issues. However, eleven of these participants encountered technical issues after completing the identification procedure and were therefore only excluded from analyses that used post-identification measures. This resulted in final sample sizes of 303 for the main analyses and 292 for the post-identification analyses. Participants averaged 19.2 years of age and 185 (61.1 %) were female. The majority of participants were of European ancestry: European (82.5 %), African American (3.6 %), Native American (0.7 %), Latin American, Hispanic, or Latina/o (4.3 %), Middle Eastern (0.3 %), Asian or Pacific Islander (3.6%), and “Other” (4.3 %).

Design

Participants were randomly assigned to a 2 (victim-bystander status: bystander vs. victim) \times 2 (culprit presence: culprit present vs culprit absent) between-subjects experimental design. Participants were run individually, with a confederate playing the role of their partner (referred to subsequently as the “partner”). Victim-bystander status manipulated whether participants believed that a thief stole either their cellphone (victim condition) or their partner’s cellphone (bystander condition). Culprit presence manipulated whether the showup presented participants with the guilty culprit (culprit-present condition) or one of several innocent suspects (culprit-absent condition). Victim-bystander status was effect-coded such that bystander = -1 and victim = $+1$; culprit presence was effect-coded such that absent = -1 and present = $+1$.

Materials

Demographics Questionnaire (Appendix A)

Participants reported their age, sex, and ethnicity.

Bogus Communication Task (Appendix B)

The bogus communication task involved a drawing task in which the participant and her or his partner sat back-to-back to recreate a series of simple shapes with only limited verbal instructions. The bogus communication task always lasted 5 minutes. This task justified the presence of the partner, who was necessary to create a situation in which the participant was the bystander, and their partner the victim.

Partner Ratings (Appendix B)

Using five-point bipolar scales with anchors of 1 and 5, participants rated their partner on the following traits: unfriendly vs. friendly, quiet vs. talkative, dependent vs. independent, unintelligent vs. intelligent, needy vs. self-reliant, unlikeable vs. likeable, and gave directions

poorly vs. gave directions well. Participants also reported what they liked best and least about their partner in two open-ended questions. Finally, participants rated the degree to which they would prefer to work with the same partner or a different partner in the future on a 6-point Likert scale that ranged from 1 (*strong preference for a different partner*) to 6 (*strong preference for the same partner*).

Culprit and Innocent Suspect Photographs (Appendix C)

Photographs used in the showup procedure were taken using a Digital Single Lens Reflex (DSLR) camera. All photographs were in full color against a white background. To offset the effects of clothing bias (Dysart, Lindsay, & Dupuis, 2006), all culprits and innocent suspects had a white cloth placed over their clothing while their photograph was taken. All culprits and innocent suspects maintained a neutral facial expression during the procedure. Five thieves and fifteen corresponding innocent suspect photographs were used to achieve stimulus sampling. Consistent with past recommendations on filler selection (Fitzgerald, Oriet, & Price, 2015), the innocent suspect photographs were of individuals matched to the culprit's description. No photograph had identifying information attached to it.

Immediate Confidence Ratings

Immediate confidence ratings consisted of one of two verbal questions asked by the experimenter. Participants who made a positive identification during the showup procedure were asked, "So...on a scale of 1-10, how confident are you that this was the thief?" Participants who did not make an identification during the showup procedure were asked, "So...on a scale of 1-10, how confident are you that this was not the thief?" Responses were recorded on Qualtrics by the experimenter.

Response Latency Measurement

Response latency was measured using a hidden Qualtrics timer that began when the experimenter first displayed one of the photographs during the showup procedure and ended when the participant indicated that she or he had made a final decision and the experimenter clicked the “next” button on Qualtrics.

Suspicion Check Form (Appendix D)

A suspicion check form assessed participants’ prior knowledge of the experiment and whether participants believed that the researchers were investigating something different from what they told the participant. Participants who indicated that they believed the researchers were investigating something different from the cover story were also prompted to report what they thought the true purpose of the study was. The exact wording of these questions can be found in Appendix D.

Bogus Campus Theft Report (Appendix E)

The bogus campus theft report, presented via a series of bogus university webpages, assessed participants’ reactions and perceptions regarding their identification decision without raising suspicion about the purpose of the experiment. The first section of the bogus campus theft report included (1) open-ended descriptions of the incident and culprit, (2) whether the participant witnessed the cellphone theft, (3) whether the participant saw the culprit, (4) whether the culprit was an acquaintance, friend or relative of the participant, and (5) whether the participant was asked to identify the culprit from a photograph, showup, or lineup. In addition to serving as part of the cover story for the bogus campus theft report, these questions were used to screen for participants who did not see the culprit or who knew the thief.

The second section of the bogus campus theft report included ten post-identification judgments that evaluated participants' retrospective perceptions regarding the criminal event (i.e., the staged cellphone theft) and the showup procedure. These judgments were adopted from previous research examining post-identification feedback effects (Semmler, Brewer, & Wells, 2004; Smalarz, Wells, & Kovera, 2014). All post-identification judgments were rated on 11-point scales with anchors of 0 and 10, and are listed below.

Post-identification judgments of ability to identify the culprit. The first five post-identification judgments focused on participants' perceived ability to accurately identify the guilty culprit. First, participants were asked how good a view they had of the perpetrator, on a scale ranging from 0 (*very poor*) to 10 (*very good*). Second, participants were asked how well they were able to make out specific features of the perpetrator's face, on a scale ranging from 0 (*not at all*) to 10 (*very well*). Third, participants were asked how much attention they paid to the perpetrator's face, on a scale ranging from 0 (*none*) to 10 (*my total attention*). Fourth, participants were asked for the clarity of their mental image of the perpetrator, on a scale ranging from 0 (*not at all clear*) to 10 (*very clear*). Fifth, participants were asked how good their recognition memory was for faces of strangers that they had encountered on only one prior occasion, on a scale ranging from 0 (*very poor*) to 10 (*excellent*).

Post-identification judgments of decision-making performance and willingness to testify in court. The next five post-identification judgments focused on participants' perceived certainty that they accurately identified the guilty culprit. First, participants were asked to give a delayed confidence rating in their identification decision. The delayed confidence rating asked participants how certain they were that the person they identified was the perpetrator, on a scale ranging from 0% (*not at all certain*) to 100% (*totally certain*). Second, participants were asked

how good a basis they had to make an identification, on a scale ranging from 0 (*no basis at all*) to 10 (*a very good basis*). Third, participants were asked how easy it was for them to discern whether the person in the showup was the perpetrator, on a scale ranging from 0 (*extremely difficult*) to 10 (*extremely easy*). Fourth, participants were asked how much time they took to make an identification, on a scale ranging from 0 (*I needed almost no time*) to 10 (*I had to think about the showup for a long time*). Finally, participants were asked how willing they would have been to testify in court that the person they identified was the perpetrator, on a scale ranging from 0 (*not at all willing*) to 10 (*totally willing*).

The last section of the bogus campus theft report asked participants whether (1) they had ever been a victim of a crime prior to this incident and (2) whether they had ever been a victim of cellphone theft prior to this incident. A complete list of the questions in the bogus campus theft report is included in Appendix E.

Shortened Profile of Mood States (Appendix F)

The shortened version of the Profile of Mood States (Shacham, 1983) retrospectively assessed negative affect at the time of the victim-bystander status manipulation. The shortened Profile of Mood States includes six subscales: Tension-Anxiety, Depression-Dejection, Anger-Hostility, Fatigue-Inertia, Vigor-Activity, and Confusion-Bewilderment. The survey consists of 37 items that retrospectively assessed participants' mood at the time they discovered that their own or their partner's cellphone was missing. All items were rated on a 5-point scale that ranged from 1 (*not at all*) to 5 (*extremely*). A complete list of the items is included in Appendix F.

Eyewitness Motivation Measures (Appendix G)

Four questions evaluated whether victim-bystander status influenced participants' motivation to avoid a mistaken identification vs. catch the guilty culprit. First, using a

dichotomous response option, participants indicated whether it was more important that they "not accuse an innocent person of a crime" (coded as 0) or "make sure the guilty culprit didn't get away" (coded as 1). Second, participants reported how concerned they were about making each of the two potential identification errors using an 8-point Likert scale that ranged from 1 (*much more concerned about identifying an innocent person*) to 8 (*much more concerned about letting the guilty culprit get away with the crime*). The final two questions asked participants to rate the extent to which they focused on either (1) making sure the guilty culprit didn't get away or (2) not accusing an innocent person of a crime using 6-point forced choice Likert scales that ranged from 1 (*strongly disagree*) to 6 (*strongly agree*).

Procedure

The initial posting announcement informed participants that the purpose of the study was to investigate differences between face-to-face communication and communication via technology. Participants were required to bring a cellphone to the lab for use in the study. After obtaining informed consent, the experimenter described the study as an examination of differences between face-to-face communication and communication via technology. Participants were informed that the study was separated into two parts. In Part 1, participants expected to fill out a demographic questionnaire and complete a face-to-face communication task. For Part 2, participants expected to complete a similar task using a cellphone. In actuality, Part 2 never occurred.

Following the cover story, the experimenter asked the participant and her or his partner to turn off their cellphones and place them in a container in a nearby room. The experimenter then used a camera to take a photograph of the participant and her or his partner, ostensibly to be used in Part 2 of the study. In reality, the photographs provided an explanation for why the

experimenter would have a photograph of a potential suspect later in the experiment. Consistent with the procedures used to take the culprit and innocent suspect photographs, the participant covered up her or his clothing with a white towel and had her or his photo taken against a white background. All participants maintained a neutral facial expression during this procedure. All participants' photographs were deleted directly from the camera and were not transferred from the camera or saved in any form. After the photographs were taken, the experimenter then asked the participant and her or his partner to leave their cellphones in a separate, interior room of the lab space. The partner was moved to another room while the participant stayed in the waiting area and completed the demographic questionnaire.

Staged Cellphone Theft

At this point, the experimenter informed the participant that the experimenter needed to leave the room to retrieve a cable necessary for transferring the photographs from the camera to a lab computer. After the experimenter left the room, one of five thieves (three female, two male) entered the lab, walked through the waiting area where the participant was sitting, and entered the room containing the cellphones. There, the thief moved one of the cellphones to a hidden location within the room. In the victim condition, the participant's cellphone was moved to the hidden location, leaving the partner's phone behind. In the bystander condition, the partner's phone was moved to the hidden location, leaving the participant's phone behind. During this time, the thief was faced away from the participant or hidden from view in the next room. The participant was also unaware that a "theft" was occurring. Upon exiting the room containing the cellphones, the thief caught the participant's attention by asking her or him a question (i.e., "Oh, sorry – are you a participant?"). This ensured that the participant looked up to encode the thief's

face for approximately 5 to 10 seconds. Because the participant's partner was behind a closer door in a nearby room, only the participant witnessed the thief. The thief then left the lab.

Retention Interval

The participant and partner were then reunited to complete two tasks that served as a 10 minute retention interval following encoding of the thief's face. The two tasks consisted of the back-to-back communication task and partner rating form. When necessary, the experimenter cut the tasks short to maintain a consistent 10 minute retention interval. First, the experimenter provided instructions for completing the bogus communication task. After 5 minutes, the experimenter collected the bogus communication task materials and instructed the participant and partner to complete the partner rating survey. After handing the partner rating surveys out, the experimenter stated that she or he was going to retrieve the cellphones for use in the next task.

Victim-Bystander Status Manipulation

The experimenter returned after five minutes and alerted the participant and her or his partner to the fact that one of the cellphones was missing. To ensure that the participant was aware of which cellphone was missing, the experimenter presented the non-stolen cellphone and asked who it belonged to. After collecting the partner rating surveys, the experimenter retrieved a laptop from a nearby room and informed the participant that the experimenter would need to write an email to the professor in charge of the study. In actuality, the experimenter used the laptop to code the participant's responses on a Qualtrics survey. First, the participant and partner were asked if they saw anyone enter the room while the experimenter was gone. If the participant said no, the experimenter followed up by asking if the participant was certain that she or he did

not see anyone enter the room. If the participant confirmed that she or he saw the thief, the experimenter asked for a brief description of the person.

Showup Procedure

After the participant's description of the thief, the partner raised the possibility that the thief may be a participant who previously participated in the study. In response, the experimenter asked if the participant would be willing to look at a photograph of a prior participant matching the current participant's description of the culprit. If the participant agreed, the experimenter then began the showup procedure using a laboratory computer in a nearby room. The participant was shown a single, color photograph of either the thief (culprit-present condition) or one of three randomly-assigned innocent suspects associated with that thief (culprit-absent condition). Upon viewing the photograph on a lab computer, the experimenter verbally asked the participant whether the person in the photograph was the thief that she or he saw earlier. The participant's response latency was measured during the showup procedure using a hidden timer on Qualtrics. After the participant made a final identification decision, the experimenter verbally asked the participant to give an immediate confidence rating for her or his identification decision. The experimenter recorded the participant's identification decision and immediate confidence ratings on the laboratory laptop.

Post-Identification Measures

At this time, the experimenter assessed participant's suspicion using a suspicion check form. To maintain the cover story, the experimenter told the participant that the suspicion check form was related to the communication study, and that it was merely a formality to finish up the study in spite of the cellphone theft. Following this, the experimenter pretended to check her or his email and informed the participant that the professor in charge of the study responded and

said that it was university policy to have witnesses to on-campus crimes fill out a “Campus Theft Report”. The participant was directed to a doctored Dean of Students webpage and instructed to open the campus crime report via a link on the webpage. The doctored webpage took the participant to a Qualtrics survey that included the Campus Theft Report, the shortened Profile of Mood States, and eyewitness motivation measures.

Debriefing

After the participant completed these measures, the experimenter verbally debriefed the participant and returned her or his cellphone if the participant was in the “victim” condition. The verbal debriefing highlighted the following key points: (1) the events were staged, (2) the partner was a confederate, (3) no theft occurred and the cellphone was not actually missing, and (4) the Campus Theft Report form was not real and no authorities were informed about the incident. Participants were also provided with a written debriefing containing more details about the study. Both the written and verbal debriefing provided a full account of the experiment’s true purpose and described the experimental manipulations that were used. At this point, the experimenter took time to answer participants’ questions and ended the session.

CHAPTER 3. RESULTS

Preliminary Analyses

Negative Affect

As a manipulation check of the victim-bystander status manipulation, differences in negative affect at the time of the identification were assessed by conducting a multivariate analysis of variance (MANOVA) with victim-bystander status and culprit presence as independent variables and participants' mean scores on the six subscales of the Shortened Profile of Mood States (SPOMS) as dependent variables. Total scores for the shortened Profile of Mood States were calculated by summing the individual item scores for each of the six subscales. The scores from the overall scale were found to be highly reliable (Cronbach's $\alpha = .96$). Table 1 presents the means and confidence intervals for the self-reported retrospective negative affect measures, organized by experimental effect. Table 2 presents MANOVA results for participants' responses to the six subscales of the Shortened Profile of Mood States, organized by experimental effect.

There was a significant main effect of victim-bystander status, Wilk's $\Lambda = .864$, $F(6, 283) = 7.44$, $p < .001$, $\eta_p^2 = .13$, 95% CI = [.06, .19]. There was no significant main effect of culprit presence, Wilk's $\Lambda = .996$, $F(6, 283) = .19$, $p = .979$, $\eta_p^2 < .01$, 95% CI = [.00, <.01], and no significant interaction between victim-bystander status and culprit presence, Wilk's $\Lambda = .989$, $F(6, 283) = .51$, $p = .801$, $\eta_p^2 = .01$, 95% CI = [<.01, .02]. This indicates that differences in negative affect were primarily caused by the victim-bystander status manipulation.

Post-hoc ANOVAs were conducted to further probe the significant main effect of victim-bystander status. Drawing on Berkowitz's (1989) frustration-aggression hypothesis, it was

predicted that, due to the aversive nature of victimization, victims would report higher overall anger than bystanders. The results of the ANOVAs revealed that, as predicted, victims reported significantly higher feelings of anger than bystanders, $F(3, 288) = 22.28, p < .001, d = .55, 95\% \text{ CI} = [.32, .78]$. Victims also had higher scores than bystanders for activation, $F(3, 288) = 4.73, p = .030, d = .25, 95\% \text{ CI} = [.02, .49]$; anxiety, $F(3, 288) = 14.61, p = .001, d = .45, 95\% \text{ CI} = [.22, .68]$; dejection, $F(3, 288) = 7.35, p = .003, d = .32, 95\% \text{ CI} = [.09, .55]$; and fatigue, $F(3, 288) = 5.77, p = .002, d = .28, 95\% \text{ CI} = [.05, .51]$. Victims did not significantly differ from bystanders on the confusion subscale, $F(3, 288) = .04, p = .831, d = .02, 95\% \text{ CI} = [-.21, .25]$. These results indicate that the victim-bystander status manipulation was effective at increasing not only anger but also other forms of negative affect.

Eyewitness Motivation Measures

As a second manipulation check of the victim-bystander status manipulation, two separate analyses examined the effect of victim-bystander status on participants' motivation to catch the guilty culprit. Higher aggression increases desire to resolve an aversive event. Therefore, I predicted that, due to a higher desire to resolve the cellphone theft via capture of the guilty culprit, victims would report being more motivated to catch the guilty culprit than bystanders. No a priori predictions were made regarding the effect of culprit presence on eyewitness motivations.

First, using binary logistic regression, participants' responses to the dichotomous motivation measure were regressed on victim-bystander status, culprit presence and the interaction between the two factors. Table 3 presents the frequencies, means and confidence intervals for the self-reported retrospective motivation measures. The results for this logistic regression analysis are presented in Table 4. Contrary to expectations, there was no main effect

for victim-bystander status on the dichotomous motivation measure, $\beta = -.08$, 95% CI = $[-.35, .20]$, Wald's $\chi^2(1) = .31$, $p = .580$, OR = .93, 95% CI = $[.71, 1.22]$. In addition, there was no significant main effect of culprit presence, $\beta = -.11$, 95% CI = $[-.16, .38]$, Wald's $\chi^2(1) = .65$, $p = .422$, OR = 1.12, 95% CI = $[.85, 1.47]$, and no significant interaction between victim-bystander status and culprit presence, $\beta = .24$, 95% CI = $[-.04, .51]$, Wald's $\chi^2(1) = 2.88$, $p = .090$, OR = 1.27, 95% CI = $[.96, 1.66]$. These results suggest that, when forced to choose between a motivation to avoid an innocent suspect and a motivation to catch the guilty culprit, neither victim-bystander status nor culprit presence significantly influenced self-reported motivation in victims.

Next, a multivariate analysis of variance (MANOVA) was conducted to examine the three remaining continuous motivation measures: motivation to catch the culprit, motivation to avoid an innocent suspect, and the combined measure with both motivations on a single scale. The results for this analysis are presented in Table 5. Victim-bystander status, culprit presence and the interaction between these two factors were entered as independent variables and participants' mean scores on the three continuous motivation measures were entered as dependent variables. Contrary to my predictions, there was no significant main effect of victim-bystander status on self-reported motivations, Wilk's $\Lambda = .98$, $F(3, 286) = 1.57$, $p = .197$, $\eta_p^2 = .02$, 95% CI = $[<.01, .05]$. There was also no significant interaction between victim-bystander status and culprit presence, Wilk's $\Lambda = .99$, $F(3, 286) = .66$, $p = .577$, $\eta_p^2 = .01$, 95% CI = $[<.01, .03]$. However, there was a significant main effect of culprit presence, Wilk's $\Lambda = .96$, $F(3, 286) = 3.978$, $p = .008$, $\eta_p^2 = .04$, 95% CI = $[<.01, .09]$.

Post-hoc ANOVAs revealed that the overall main effect of culprit presence was driven by differences on the individual measures of motivation, with no significant main effect of culprit

presence on the combined motivation measure, $F(1, 288) = 2.21, p = .138$, Cohen's $d = .17$, 95% CI = $[-.06, .40]$. Compared to participants in the culprit-present condition, participants in the culprit-absent condition reported being significantly more focused on avoiding an innocent suspect, $F(1, 288) = 10.32, p = .001$, Cohen's $d = .38$, 95% CI = $[.14, .61]$, and significantly less focused on catching the guilty culprit, $F(1, 288) = 4.20, p = .041$, Cohen's $d = .24$, 95% CI = $[.01, .47]$. In other words, eyewitnesses who viewed a guilty culprit were more motivated to catch the guilty culprit, and eyewitnesses who viewed an innocent suspect were more motivated to avoid an innocent suspect. Overall, these findings suggest that the victim-bystander status manipulation did not influence victims' motivation to catch the guilty culprit.

Primary Analyses

The effects of victim-bystander status and culprit presence on eyewitness decision-making were examined in three parts: effects on decision-making at identification, effects on post-identification judgments by eyewitnesses who aggressed by making a positive identification (i.e., identifiers), and anger as a potential mediator of the relationship between victim-bystander status and decision-making.

Decision-Making at Identification

Identification rates. Table 6 and Figure 1 present the identification rates across culprit presence and victim-bystander status. Eyewitnesses who were victims correctly identified the guilty culprit in 77.5% of cases and falsely identified an innocent suspect in 30.8% of cases. Eyewitnesses who were bystanders correctly identified the guilty culprit in 72.0% of cases and falsely identified an innocent suspect in 30.0% of cases. The following logistic regression results are presented in Table 7. To examine whether victim-bystander status influenced identification rates, eyewitnesses' decision to identify was regressed on victim-bystander status, culprit

presence, and the interaction between the two factors, using binary logistic regression. Non-identifications were coded as 0 and positive identifications were coded as 1.

It was predicted that victims would make more positive identifications of both guilty culprits and innocent suspects than bystanders, resulting in a significant main effect of victim-bystander status. It was also expected that participants who viewed a guilty culprit would make positive identifications more often than eyewitnesses who viewed an innocent suspect. A significant interaction between culprit presence and victim-bystander status would reflect that the victim-bystander status manipulation improved eyewitnesses' ability to distinguish between guilty culprits and innocent suspects. Given that attention and encoding were eliminated as potential mediators and no differences were expected in victims' and bystanders' ability to retrieve the culprit's face from memory, no prediction was made regarding the interaction between victim-bystander status and culprit presence.

As expected, eyewitnesses presented with a guilty culprit were significantly more likely to make a positive identification than eyewitnesses presented with an innocent suspect, $\beta = 1.92$, 95% CI = [1.41, 2.43], Wald's $\chi^2(1) = 55.412$, $p < .001$, OR = 6.82, 95% CI = [4.11, 11.31]. However, neither victim-bystander status, $\beta = .164$, 95% CI = [-.34, .67], Wald's $\chi^2(1) = .406$, $p = .524$, OR = 1.18, 95% CI = [.71, 1.95], nor the interaction between victim-bystander status and culprit presence, $\beta = .256$, 95% CI = [-.76, 1.27], Wald's $\chi^2(1) = .246$, $p = .620$, OR = 1.29, 95% CI = [.47, 3.55], significantly influenced identification rates. Overall, these results indicate that the victim-bystander manipulation did not significantly influence eyewitnesses' identification rates or their ability to distinguish between culprits and innocent suspects. Accordingly, the hypothesis that victims would have higher identification rates than bystanders was not supported.

Signal detection measures. Although eyewitness performance in the current paper was primarily assessed via logistic regression of identification rates, several eyewitness researchers have advocated analysis of eyewitness performance using signal detection measures (Mickes, Moreland, Clark, & Wixted, 2014; Wixted & Mickes, 2012). Accordingly, a parallel analysis of eyewitness performance in the current study was conducted using the signal detection theory measures d' and c . A summary of what these measures represent in eyewitness identification and how to calculate them is presented below.

The signal detection measure d' measures the ability of an eyewitness to distinguish between guilty culprits and an innocent suspects. It is calculated with the following equation: $d' = \Phi^{-1}(H) - \Phi^{-1}(FA)$, where Φ^{-1} represents the standard normal inverse function, H represents the proportion of culprit identifications (i.e., hits) and FA represents the proportion of innocent suspect identifications (i.e., false alarms). Increasingly positive d' values indicate a higher ratio of culprit to innocent suspect identifications. Compared to an analysis of identification rates using binary logistic regression, a significant difference in d' between victims and bystanders is conceptually similar to a significant interaction between victim-bystander status and culprit presence.

The signal detection measure c is a measure of response bias and represents an eyewitness' willingness to make a positive identification. It is calculated with the following equation: $c = -.5 \times (\Phi^{-1}[C] + \Phi^{-1}[FA])$. Negative values of c indicate a tendency toward making an identification and positive values of c indicate a bias toward making a rejection. Compared to an analysis of identification rates using binary logistic regression, a significant difference in c between victims and bystanders is conceptually similar to a significant main effect of victim-bystander status on identification rates.

Signal detection measures are traditionally employed in repeated measures designs, which allow for the calculation of c and d' for each individual participant across multiple trials. As eyewitness identification tasks typically require the use of between-subjects designs, point estimates of c and d' must be calculated by collapsing across participants. To allow for an inferential comparison of c and d' across experimental conditions, the variance around each statistic was estimated using non-parametric bootstrapping. Independent t-tests were then conducted to examine differences in c and d' between victims and bystanders.

Parallel to the prediction that victim-bystander status would evidence a significant main effect in the context of the logistic regression analysis, in the context of the signal detection analysis it was predicted that victims would adopt a more liberal response bias (c) than bystanders. No predictions were made regarding differences in discriminability (d') between victims and bystanders; a significant difference in d' would correspond to a significant interaction between victim-bystander status and culprit presence in the context of the logistic regression analysis. Victims had slightly better discriminability and slightly more liberal response bias ($d' = 1.257$, $c = -.127$) than bystanders ($d' = 1.107$, $c = -.029$). However, consistent with the findings using binary logistic regression, these differences in discriminability, $t(301) = .48$, $p = .629$, Cohen's $d = .028$, 95% CI = [-.085, .140], and response bias, $t(301) = 1.30$, $p = .195$, Cohen's $d = .075$, 95% CI = [-.038, .188], were non-significant.

Immediate confidence judgments. Separate two-way ANOVAs were conducted to examine the effects of the manipulations on immediate confidence ratings for rejections and identifications. Table 8 presents the means and confidence intervals for immediate confidence ratings and response latency, organized by experimental effect. The results of the ANOVA analyses are presented in Table 9, organized by experimental effect and split by identification

decision. Drawing on the frustration-aggression hypothesis, it was predicted that victims who made a positive identification would report higher immediate confidence than bystanders who did not make an identification, in order to increase the effectiveness and potency of the positive identification and improve the likelihood that the cellphone theft would be resolved. No a priori predictions were made regarding the effect of victim-bystander status on confidence ratings for rejections, but analyses were conducted due to the importance of confidence as an outcome in eyewitness identification.

Contrary to expectations, there were no significant differences in immediate confidence judgments for identifications across culprit presence, $F(1, 157) = 2.08, p = .151$, Cohen's $d = .25$, 95% CI = $[-.09, .60]$, victim-bystander status, $F(1, 157) = 1.24, p = .268$, Cohen's $d = .20$, 95% CI = $[-.15, .54]$, or the interaction between culprit presence and victim-bystander status, $F(1, 157) = 2.46, p = .119$, Cohen's $d = .26$, 95% CI $[-.07, .59]$. In addition, there were no significant differences in immediate confidence judgments for rejections across culprit presence, $F(1, 138) = 1.53, p = .218$, Cohen's $d = .23$, 95% CI = $[-.14, .60]$, victim-bystander status, $F(1, 138) = 2.47, p = .119$, Cohen's $d = .30$, 95% CI = $[-.07, .67]$, or the interaction between culprit presence and victim-bystander status, $F(1, 138) = .11, p = .738$, Cohen's $d = .06$, 95% CI $[-.27, .38]$. These findings suggest that, compared to bystanders, victims did not feel a need to increase the potency of their identification decision by bolstering their confidence ratings. In other words, the hypothesis that victims who made a positive identification would report higher immediate confidence than bystanders who made a positive identification was not supported. In addition, these data did not provide evidence of a confidence-accuracy relationship; this unexpected result is discussed further in the next chapter.

Response Latency. As with the immediate confidence judgments, a two-way ANOVA was conducted to examine the effects of the manipulations on response latency for rejections and identifications. The results of the ANOVA analysis are presented in Table 9, organized by experimental effect. The distribution of response latency data in the current study exhibited significant positive skew. Therefore, response latency was log-transformed to meet assumptions of normality required for significance testing. In addition, three outliers were more than three standard deviations from the mean. To address this issue, the outliers were recoded to be 3 standard deviations above the mean, and the data were analyzed both with and without the recoded outliers. The results were nearly identical when outliers were discarded or kept in the analysis. Accordingly, the following section only presents results with the recoded outliers included in the dataset.

It was predicted that victims who made a positive identification would take less time to make an identification than bystanders. However, there were no significant differences in response latency for identifications across culprit presence, $F(1, 155) = .04, p = .956$, Cohen's $d = .04$, 95% CI = $[-.31, .38]$, victim-bystander status, $F(1, 155) = 2.92, p = .093$, Cohen's $d = .27$, 95% CI = $[-.04, .59]$, or the interaction between culprit presence and victim-bystander status, $F(1, 155) < .01, p = .929$, Cohen's $d = .01$, 95% CI $[-.31, .32]$. The lack of a significant main effect for victim-bystander status indicates a failure to support the hypothesis that victims would take less time than bystanders to identify the guilty culprit.

Post-Identification Judgments by Identifiers

This next section examines the effect of victim-bystander status on bolstering of post-identification judgments by eyewitnesses who made a positive identification in the showup procedure. By limiting analyses to eyewitnesses who made a positive identification, this section

focuses on post-identification decision-making in only those eyewitnesses who aggressed by making a positive identification. Importantly, all post-identification judgments were made by eyewitnesses under the belief that they were reporting their judgments of the event and the showup procedure to campus law enforcement. In terms of the frustration-aggression hypothesis (Berkowitz, 1989), bolstering on post-identification judgments reflects an increase in the potency of eyewitnesses' aggression via a positive identification. This increase in potency serves to increase the likelihood that law enforcement perceive victims' identification as valid and reliable, thereby improving the odds that the aversive event (i.e., the cellphone theft) is resolved via capture of the guilty culprit. Therefore, for all post-identification judgments, it was predicted that victims would bolster their responses compared to bystanders.

Examination of post-identification judgments is separated into two sections. The first section examines judgments regarding eyewitnesses' perceived ability to accurately identify the guilty culprit leading up to the showup procedure, whereas the second section examines eyewitnesses' perceived certainty that they accurately identified the guilty culprit during the showup procedure. The final section examines eyewitnesses' self-reported willingness to testify in court about their decision to identify. Tables 10 and 11 present the means and confidence intervals for the post-identification judgments of ability to identify, certainty in identification decision, and willingness to testify in court by eyewitnesses who made a positive identification.

Judgments of ability to identify the culprit. A MANOVA was conducted to examine the effects of culprit presence and victim-bystander status on eyewitnesses' self-perceived view of the culprit, self-perceived ability to make out specific features of the culprit's face, self-perceived attention paid to the culprit's face, self-perceived clarity of the image of the culprit's

face, and self-perceived recognition memory for strangers' faces. Table 12 presents the MANOVA results for these five post-identification judgments, organized by experimental effect.

Although there was no significant main effect of victim-bystander status on post-identification judgments of ability to identify the culprit, Wilk's $\Lambda = .949$, $F(5, 148) = 1.60$, $p = .163$, $\eta_p^2 = .05$, 95% CI = [$<.01$, $.10$], there was a significant interaction between victim-bystander status and culprit presence, Wilk's $\Lambda = .925$, $F(5, 148) = 2.39$, $p = .040$, $\eta_p^2 = .07$, 95% CI = [$<.01$, $.14$], such that victims who viewed an innocent suspect gave significantly higher ratings on the post-identification judgments of ability to identify the culprit than bystanders who viewed an innocent suspect. In addition, there was a significant main effect of culprit presence, Wilk's $\Lambda = .917$, $F(5, 148) = 2.68$, $p = .024$, $\eta_p^2 = .08$, 95% CI = [$<.01$, $.15$], such that participants who viewed a culprit gave significantly higher ratings on the post-identification judgments of ability than participants who viewed an innocent suspect.

Post-hoc ANOVAs revealed one significant main effect of culprit presence, two significant main effects of victim-bystander status and one significant interaction between culprit presence and victim-bystander status. Participants who viewed a culprit reported having a significantly better view of the culprit than participants who viewed an innocent suspect, $F(1, 152) = 7.01$, $p = .009$, Cohen's $d = .47$, 95% CI = [$.12$, $.82$]. Compared to bystanders, victims reporting paying significantly more attention, $F(1, 152) = 4.12$, $p = .044$, Cohen's $d = .33$, 95% CI = [$.01$, $.64$], and having a significantly clearer mental image of the culprit, $F(1, 152) = 5.22$, $p = .024$, Cohen's $d = .37$, 95% CI = [$.05$, $.69$]. Finally, there was a significant interaction between culprit presence and victim-bystander status for number of specific facial features recalled, $F(1, 152) = 6.30$, $p = .013$, Cohen's $d = .40$, 95% CI = [$.08$, $.72$]. I first explored this interaction by examining simple main effects of victim-bystander status on the number of specific facial

features recalled. When the participants viewed an innocent suspect, victims reported paying significantly more attention than bystanders, $t(155) = 2.46, p = .015$, Cohen's $d = .40$, 95% CI = [.08, .71]. However, there was no significant simple main effect of victim-bystander status on perceived number of specific facial features recalled when participants viewed a guilty culprit, $t(155) = -.81, p = .421$, Cohen's $d = .13$, 95% CI = [-.19, .45]. These findings suggest that victims' bolstering of perceived specific facial features recalled may be strongest in cases where the victim identified an innocent suspect. Overall, these findings provide partial support for the hypothesis that victims would bolster judgments of their ability to accurately identify the guilty culprit compared to bystanders.

Next, I examined the simple main effects for culprit presence on the perceived number of specific facial features recalled. When participants were victims, participants who viewed an innocent suspect significantly differed from participants who viewed a culprit in perceived number of specific facial features recalled, $t(155) = 2.68, p = .008$, Cohen's $d = .47$, 95% CI = [.12, .83]. However, when participants were bystanders, participants who viewed an innocent suspect did not significantly differ from participants who viewed a culprit in perceived number of specific facial features recalled, $t(155) = -.80, p = .426$, Cohen's $d = .14$, 95% CI = [-.21, .49]. These results suggest one of two possibilities: either viewing an innocent suspect has a stronger impact on perceived number of specific facial features recalled when participants are bystanders, or being a victim reduces the impact of culprit presence on perceived number of specific facial features recalled.

Judgments of certainty in identification decision. As with the judgments of ability to identify the culprit, a MANOVA was conducted to examine the effects of culprit presence and victim-bystander status on eyewitnesses' delayed confidence ratings, perceived basis to make an

identification, perceived ease of identification, and perceived time needed to make identification. Table 13 presents the MANOVA results for these four post-identification judgments, organized by experimental effect.

Contrary to predictions, there were no significant main effect of victim-bystander status on post-identification judgments of ability to identify the culprit, Wilk's $\Lambda = .977$, $F(4, 149) = .89$, $p = .475$, $\eta_p^2 = .02$, 95% CI = [$<.01$, $.06$]. In addition, there was no significant main effect of culprit presence, Wilk's $\Lambda = .940$, $F(4, 149) = 2.37$, $p = .056$, $\eta_p^2 = .06$, 95% CI = [$<.01$, $.12$], and no significant interaction between victim-bystander status and culprit presence, Wilk's $\Lambda = .984$, $F(4, 149) = .81$, $p = .657$, $\eta_p^2 = .02$, 95% CI = [$<.01$, $.06$]. Due to the lack of significant main effects or a significant interaction, no post-hoc analyses of the individual post-identification judgments of certainty were conducted. Overall, these results indicate a lack of support for the hypothesis that victim-bystander status would lead to bolstering of post-identification judgments of certainty in participants' identifications.

Willingness to testify in court. Finally, a two-way ANOVA was conducted to examine the effects of culprit presence and victim-bystander status on eyewitnesses' willingness to testify in court that the person they identified was the culprit. Table 14 presents the following ANOVA results, organized by experimental effect. As predicted, there was a significant main effect of victim-bystander status on willingness to testify, $F(1, 152) = 10.31$, $p = .002$, Cohen's $d = .52$, 95% CI = [$.20$, $.84$], such that victims reported being significantly more willing than bystanders to testify in court about their decision to identify. There was no significant main effect of culprit presence, $F(1, 152) = 1.83$, $p = .179$, Cohen's $d = .24$, 95% CI = [$-.11$, $.59$], and no significant interaction between culprit presence and victim-bystander status, $F(1, 152) = 2.96$, $p = .087$,

Cohen's $d = .28$, 95% CI = $[-.04, .59]$. These results provide support for the hypothesis that victims would bolster their post-identification judgment of willingness to testify in court.

Anger as a Mediator of Post-Identification Judgments

This next section provides an empirical test of the applicability of Berkowitz's (1989) frustration-aggression hypothesis to the relationship between victim-bystander status and eyewitness decision-making. Under the frustration-aggression hypothesis, aggressive tendencies are mediated by negative affect, and by feelings of anger in particular. If victim-bystander status increases eyewitness aggression in the manner predicted by Berkowitz's frustration-aggression hypothesis, its effect on eyewitness decision-making should be mediated by increased feelings of anger in victims compared to bystanders. Although the frustration-aggression hypothesis allows for other forms of negative affect to increase aggression, anger is considered to be the strongest mediator (1989). Therefore, mediation analyses were limited to effects of victim-bystander status through the potential mediator of anger. In addition, there was no significant effect of victim-bystander status on the other predicted mediator of motivation to catch the guilty culprit. Accordingly, no analyses examining motivation to catch the guilty culprit as a mediator of victim-bystander status were conducted.

Generally, it is only appropriate to examine mediation in the presence of a total effect. However, victim-bystander status only significantly influenced four outcomes in this study: attention paid to the culprit, number of specific facial features of the culprit attended to, clarity of mental image of the culprit's face, and willingness to testify in court. Accordingly, mediation testing was limited to just these four outcomes. Because analysis of post-identification judgments was limited to only participants who chose to aggress via a positive identification, the following mediation analyses were also constrained to identifiers. The indirect effects of victim-

bystander status on these four outcomes through the proposed mediator of anger was assessed using the Preacher & Hayes bootstrap procedure. Per the Preacher and Hayes (2013) guidelines for testing mediation with multiple independent variables, victim-bystander status was entered as the primary independent variable while culprit presence and the interaction between victim-bystander status and culprit presence were entered as covariates. Anger was entered into the model as the mediator.

Tables 15 through 18 present the mediation effects of anger for victim-bystander status on each of the four post-identification judgments. Of these four post-identification judgments, only attention paid to the culprit was significantly mediated by anger. The indirect effect on attention paid to the culprit was estimated to be .165 (Bias-Corrected 95% CI = 0.032, .406). Given that the bias-corrected confidence intervals do not overlap zero, one can infer that the indirect effect is statistically significant ($p < .05$). This result provides support for the hypothesis that victim-bystander status's effect on attention paid to the culprit would be significantly mediated by anger. However, the absence of mediation for the other three post-identification outcomes means that this finding provides only partial support for the eyewitness aggression model predicted by the frustration-aggression hypothesis (Berkowitz, 1989).

CHAPTER 4. DISCUSSION

This study tested whether eyewitnesses' status as either a victim or a bystander influenced their decision-making processes in a showup procedure after eliminating attention and encoding as possible mediators of the victim-bystander status manipulation. Overall, the results of this study indicate that victim-bystander status has a negligible impact on eyewitness decision-making during a showup procedure but influenced eyewitnesses' perceived ability to identify the culprit and eyewitnesses' willingness to testify in court. Participants who were victims of a cellphone theft were not significantly more likely to identify a suspect during a showup procedure than participants who were bystanders to the theft. In addition, victims did not significantly differ from bystanders in their ability to distinguish guilty culprits from innocent suspects. Finally, victims did not significantly differ from bystanders in immediate confidence ratings, response latency, or motivation to catch the guilty culprit.

However, there were several notable findings related to victim-bystander status in this study. First, as predicted, victims reported experiencing significantly higher anger than bystanders at the time that they learned a cellphone theft had occurred. Victims also reported experiencing greater activation, anxiety, dejection, and fatigue than bystanders. Second, victims who viewed an innocent suspect gave significantly higher ratings of their post-identification ability to identify the culprit than bystanders. Specifically, victims who made a positive identification bolstered their responses to four post-identification judgments: how much attention eyewitnesses paid to the culprit's face, how well eyewitnesses could make out specific features of the culprit's face, how clear an image eyewitnesses retained of the culprit. Finally, victims reported being significantly more willing to testify in court about their identification decision

than bystanders. The following section discusses the theoretical implications of these findings in relation to Berkowitz's (1989) revised frustration-aggression hypothesis.

Aggression, Victim-Bystander Status, and Eyewitness Decision-Making

Drawing on Berkowitz's (1989) frustration-aggression hypothesis, it was predicted that, compared to bystanders, victims would experience greater anger and have a greater desire to resolve the aversive event, and that these factors would lead to victims having a higher tendency to aggress than bystanders. This tendency to aggress was predicted to manifest at the time of the identification procedure in the form of identification rates, with victims predicted to make more positive identifications than bystanders. It also was predicted that—due to a higher desire to resolve the aversive event—victims would increase the potency of positive identifications by reporting higher immediate confidence and identifying culprits and innocent suspects faster than bystanders. Finally, it was predicted that, compared to bystanders, victims would increase the potency of positive identifications by bolstering their post-identification judgments of ability to identify, certainty in their identification, and willingness to testify in court. Bolstering by victims on these judgments would give law enforcement a better impression of victims' ability to make an accurate identification of the guilty culprit and improve the odds that the cellphone theft would be resolved, thereby increasing the potency of victims' decision to identify. The theoretical implications and findings for each of these predictions are discussed below.

Negative affect. Consistent with the frustration-aggression hypothesis, victims reported experiencing greater anger than bystanders. However, it is important to note that the victim-bystander manipulation also had small to moderate effects on activation, anxiety, dejection, and fatigue. These findings are consistent with Berkowitz's (1989) revised formulation of the frustration-aggression hypothesis. Although the revised hypothesis highlights anger as the

primary emotion driving aggression, it does not preclude effects of the aversive event on other components of negative affect. Overall, these findings suggest that the cellphone theft was sufficiently aversive to trigger an increase in negative affect among victims, consistent with the frustration-aggression hypothesis' assumption that aversive events are particularly frustrating when perceived as a deliberate personal attack (Berkowitz, 1989). Future studies should address whether these other aspects of negative affect have unique contributions to eyewitness decision-making.

Desire to resolve the aversive event. Desire to resolve the aversive event was assessed indirectly in this study via retrospective motivation to catch the guilty culprit. However, victims did not significantly differ from bystanders on any of the four measures examining eyewitness motivations to catch the guilty culprit or avoid an innocent suspect. These results tentatively suggest that victim-bystander status has a negligible effect on eyewitnesses' retrospective motivations at the time of the identification.

In terms of Berkowitz's (1989) frustration-aggression hypothesis, these findings suggest that victims did not have a higher desire to resolve the aversive event than bystanders. One potential explanation for these results is that the social norms associated with identification procedures caused both victims and bystanders to be equally motivated to resolve the aversive event. As noted in the introduction, Berkowitz (1989) highlighted social norms as one factor that could prohibit aggressive behavior in response to an aversive event. In this instance, it is possible that eyewitnesses considered innocent suspects to be unacceptable targets for aggression via a positive identification, leading them to focus on being accurate rather than on catching the guilty culprit.

It is also possible that the retrospective motivation measures used here failed to capture the effects of victim-bystander status on motivation at the time of the identification. In this paradigm, retrospective motivations were always assessed at the end of the experiment in order to prevent participants' responses to manipulation check questions influencing their decision-making and responses at other points in the study. This decision to delay measuring eyewitnesses' motivation until the end of the procedures was made to protect the internal validity of this study with respect to the primary outcome of identification rates.

However, this decision to delay the measurement of retrospective motivations raises the possibility that the culprit presence manipulation and other post-identification measures occluded the effect of victim-bystander status on eyewitnesses' actual motivations at the time of the identification. That is, victims may have felt a higher desire to resolve the aversive event than bystanders at the time of the identification, and therefore may have reported a higher motivation to catch the guilty culprit, if their motivations were assessed during or prior to the showup procedure. Future studies could address this possibility by measuring motivation immediately prior to the identification procedure. However, it is important to note that doing so could influence subsequent decision-making, including identification performance.

Decision-making at identification. The primary hypothesis of this study—that victims would have higher identification rates than bystanders—was not supported. Indeed, victim-bystander status did not affect any of the decision-making outcomes measured during the showup procedure: That is, victims did not significantly differ from bystanders in identification rates, immediate confidence ratings, or response latency. Overall, these results suggest that if victimization did increase eyewitnesses' tendency to aggress, this tendency did not manifest as differential decision-making during the showup procedure. This suggests that, when attention

and encoding are eliminated as potential mediators, victim-bystander status only has a negligible effect on eyewitness decision-making at the time of an identification procedure.

However, the lack of a relationship between confidence ratings and culprit presence is worth noting, as these findings are contrary to the wealth of research demonstrating a robust confidence-accuracy relationship (Brewer & Wells, 2006; Lindsay, Kalmel, Leung, Bertrand, Sauer, & Sauerland, 2013; Palmer, Brewer & Weber, 2013; Sporer, Penrod, Read, Cutler & Steinberg, 1995; Wixted & Wells, 2017). There are three potential factors that contributed to the weak confidence-accuracy relationship in these data. First, this study employed showups rather than lineups. Second, the nature of the cover story in this paradigm precluded the experimenters from being double-blind. Finally, to maintain low suspicion prior to the post-identification measures, experimenters verbally and informally asked participants to give a rating of confidence in their identification decision on a scale ranging from 1 to 10, rather than on a formal 0 to 100% scale.

Prior research has demonstrated that the confidence-accuracy relationship is greatest when using pristine identification procedures (Wixted & Wells, 2017), such as unbiased lineups and double-blind administration. Due to their suggestive nature and the lack of fillers as distractors, showups have been conceptualized as being an extreme form of a biased lineup (Smith et al., 2017). In addition, the informal presentation of the confidence ratings may have reduced the reliability of the measure compared to previous research. It therefore possible that the methodology in this paradigm resulted in the absence of a confidence-accuracy relationship. However, further research will need to be conducted to test the exact mechanisms that caused the absence of a confidence-accuracy relationship in these data.

Post-identification judgments. However, this does not mean that victim-bystander status had no effect on eyewitness decision-making in this study. When presented with an innocent suspect, victims who made a positive identification bolstered their post-identification judgments of ability to make an identification. In addition, victims were significantly more willing to testify in court than bystanders, regardless of whether they saw a culprit or innocent suspect. In terms of the individual judgments of ability to identify, victims bolstered their responses to three of the five items: how much attention eyewitnesses paid to the culprit's face, how well eyewitnesses could make out specific features of the culprit's face, and how clear an image eyewitnesses retained of the culprit. These findings suggest that victims who aggressed via a positive identification also increased the potency of their aggressive act by inflating their self-reported ability to identify the culprit. Given that participants believed their responses were part of a real police report and would be sent to law enforcement, it is possible that victims' bolstering of these post-identification judgments was caused by a desire to convince law enforcement that their identification was accurate. In doing so, victims would improve the odds that law enforcement followed up on their positive identification and captured the guilty culprit, resulting in resolution of the aversive event.

Notably, willingness to testify is the only item on the list of post-identification judgments influenced by victim-bystander status that is not related to eyewitnesses' ability to identify the culprit or certainty in their identification decision. Instead, the significant differences between victims and bystanders in willingness to testify may reflect a difference in future intentions. In terms of the frustration-aggression hypothesis, this suggests that victimization may affect eyewitnesses' future intention to aggress via other channels of behavior. After all, if one considers a positive identification of a suspect to be an aggressive act due to its potential

negative consequences for said suspect, then direct testimony in court about the guilt of that suspect should also be theoretically conceptualized as an act of aggression by eyewitnesses. Future studies could examine this possibility by asking victims and bystanders about their intention to make a positive identification prior to presenting them with an identification procedure.

These findings are also notable because, due to the victim-bystander manipulation being delayed until immediately prior to the showup procedure, all eyewitnesses in this study had the same quality of attention and encoding. Due to random assignment, victims' bolstered post-identification judgments are unlikely to reflect true differences between victims and bystanders in attention to and encoding of the culprit's face. Therefore, victims' bolstering of post-identification judgments can be attributed to victimization and its corresponding psychological effects. The implications of these results for eyewitness testimony are concerning. They suggest that victims may give the appearance of having a greater ability to accurately identify guilty culprits than bystanders, even in the absence of true differences. Indeed, bolstering on two of the judgments (attention paid to the culprit and ability to make out specific facial features) was most potent when victims had identified an innocent suspect.

One potential explanation for victims' tendency to bolster following false alarms lies in cognitive dissonance theory. Cognitive dissonance theory proposes that one feels tension when two simultaneously accessible cognitions are inconsistent and that this tension leads to the adoption of attitudes that justify one's actions (Cooper, 2007). In this instance, victims who identified an innocent suspect may have felt tension between wanting to "get back" at the culprit and wanting to be an accurate witness and a good citizen. This tension, combined with a suspicion that they identified an innocent person, may have led victims to bolster their responses

to the post-identification judgments in order to justify their positive identification to not only the police, but to themselves. However, this possibility also has troubling implications for the justice system, as it suggests that the tendency for victims to exaggerate their ability to have made an accurate identification may be highest when their testimony could implicate an innocent suspect.

Furthermore, it is possible that victims' bolstering of post-identification judgments could become more potent over time. Previous research has demonstrated that confirming post-identification feedback leads eyewitnesses to inflate estimates of confidence in their identification decision (Stebly, Wells, & Douglass, 2014). It is possible that this effect may occur in other types of post-identification judgments, including the judgments influenced by victim-bystander status in this study. Even in the absence of confirmatory behavior at the time of the identification procedure, eyewitnesses who testify are nearly guaranteed to experience confirmatory feedback. Indeed, even the act of requesting that an eyewitness testify about her or his identification implies that the identification led to the capture of the guilty culprit (Eisen et al., 2018). Accordingly, additional studies are needed to examine the extent to which victims bolster their post-identification judgments and to determine whether interventions can counteract victims' bolstering of post-identification judgments.

Despite these noteworthy findings, the lack of significant differences between victims and bystanders on the goodness of view and self-perceived recognition memory ability items suggest that the effects of victim-bystander status on post-identification judgments requires further qualification. One potential explanation for these conflicting findings concerns the relevancy of the items to eyewitnesses' memory of the criminal event. Specific facial features made out, attention paid to the culprit, and clarity of one's image of the culprit's face are all items related to eyewitnesses' memory for the culprit's face. In other words, these items were

directly relevant to the criminal event. Self-perceived recognition memory ability, on the other hand, focuses on participants' self-concept, rather than on an aspect of the situation. However, this explanation does not account for the lack of differences in the goodness of view item, as at face value this item appears directly relevant to the criminal event. Therefore, exploration of these effects requires further testing.

Implications for victim-bystander status and aggression. These findings provide partial support for victim-bystander status influencing some eyewitness decision-making processes in the manner predicted by Berkowitz's (1989) frustration-aggression hypothesis. However, not all victims' bolstered post-identification judgments were mediated by anger, as one would expect given the frustration-aggression hypothesis. Instead, only the effect of victim-bystander status on attention paid to the culprit was mediated by feelings of anger. In addition, further testing of desire to resolve the aversive event as a mediator was not feasible due to the lack of a relationship between victim-bystander status and motivation to catch the guilty culprit. It is worth noting that the lack of the predicted mediation may have been caused by the decision to delay measurement of retrospective mood and motivation until the end of the procedures. Measuring negative affect and eyewitness motivations after the victim-bystander status manipulation and prior to the identification procedure may provide a more accurate assessment of mediational processes. Given the current data, however, it appears that the frustration-aggression hypothesis has limited utility in explaining the effects of victim-bystander status on eyewitness decision-making.

It is also possible that victim-bystander status does increase aggressive tendencies, but that this increase in tendency to aggress has a limited influence on eyewitness decision-making processes. In other words, victim-bystander status may lead to an increase in aggression that can

be detected via other behavioral outcomes (e.g., the hot sauce paradigm, Lieberman et al., 1999) while at the same time having a negligible impact on eyewitness identification outcomes. Future studies could test this hypothesis by examining the impact of victim-bystander using more traditional aggression paradigms.

Another possible explanation for these results is that eyewitnesses were more concerned with accuracy than aggressing against the perpetrator during the identification procedure. As noted in Berkowitz's revised (1989) frustration-aggression hypothesis, frustrations do not always lead to overt aggression. Social norms, inhibitions, prior learning, and intervening cognitive processes can curtail aggressive reactions, even when an aversive event is frustrating and produces anger. In this study, eyewitnesses presented with the showup procedure may have considered making an accurate identification of the culprit to be a higher priority than "getting back" at the culprit who stole their phone by making a positive identification. To be accurate, an eyewitness must consider the consequences of both misses and false alarms. Therefore, it is possible that eyewitnesses discerned that falsely identifying an innocent suspect would not lead to the resolution of the aversive event. In other words, despite victims experiencing greater anger than bystanders in response to the aversive event, victims' tendency to aggress by making a positive identification may have been curtailed by their desire to make an overall accurate identification.

Culprit Presence and Eyewitnesses Decision-Making

The following section discusses several effects of the culprit presence manipulation on eyewitnesses' retrospective judgments and motivations. No a priori predictions were made regarding the influence of culprit presence on post-identification judgments or retrospective motivations. However, these differences are not unexpected, given that prior research has

demonstrated effects of culprit presence on post-identification judgments (Bradfield & Wells, 2000; Bradfield, Wells, & Olson, 2002).

Post-identification judgments. Culprit presence had a significant impact on participants' post-identification judgments of ability to identify, such that participants who viewed a culprit reported having a significantly better view of the culprit during the criminal event than participants who viewed an innocent suspect. Although culprit presence did not significantly impact participants' overall post-identification judgments of certainty, participants who viewed a culprit reported significantly greater ease of identification and reported needing significantly less time to make an identification. Notably, these judgments of perceived decision-making performance were diagnostic of actual decision-making performance in these data, in that higher ratings on post-identification judgments were associated with more hits than false alarms. Therefore, at first glance, these results suggest that eyewitnesses had some insight into the accuracy of their decision-making performance.

However, it is important to consider why culprit presence influenced these judgments and whether the effects of culprit presence are consistent with eyewitnesses' actual behavior and the true viewing conditions. The greater perceived ease of identification in participants who viewed a guilty culprit can potentially be attributed to euphoric experience, a subjective sense of similarity between a stimulus and a person's memory (Charman & Wells, 2012). Research in this area has demonstrated that eyewitnesses feel a stronger euphoric experience when shown the actual culprit than when shown an innocent suspect and that this feeling of euphoric experience provides a cue that improves recall of the culprit's face and leads to higher identification accuracy (Charman & Wells, 2012). Therefore, the higher ratings for ease of identification by

participants who identified a guilty culprit are understandable, as these ratings may simply reflect greater ease in retrieval of the culprit's face from memory.

However, the effects of culprit presence on perceived time to identification and perceived viewing conditions beg a more complex explanation. Indeed, earlier analyses of decision-making at identification indicated that there were no significant differences in response latency as a function of culprit presence. In other words, participants in the culprit present condition bolstered their judgments of perceived response latency in the bogus campus theft report, and these bolstered judgments were inconsistent with eyewitnesses' actual response latency at the time of the showup procedure. It is possible, however, that participants' perceived response latency is a more accurate measure of the time that they needed to make an identification. The response latency measure used to assess participants' actual time to identification during the showup procedure may have been too unreliable to detect real differences based on culprit presence.

However, it is improbable that participants in the culprit presence condition had a significantly better view of the culprit than participants in the culprit absent condition. The culprit presence manipulation occurred during the showup procedure and, due to random assignment, participants who viewed a guilty culprit during the showup procedure had the same level of attention to and encoding of the guilty culprit as participants who viewed an innocent suspect. In other words, the perceived differences in viewing conditions as a function of culprit presence are inconsistent with the true viewing conditions in this study.

One possible explanation for this inconsistency lies in the selective cue integration framework (Charman, Carlucci, Vallano, & Hyman Gregory, 2010). This framework suggests that eyewitnesses have little or no memory trace for their decision-making performance at the time of identification and must therefore infer their performance based on any available

information. Accordingly, the culprit presence manipulation may have unintentionally generated cues that are diagnostic of accuracy, such as euphoric experience or perceived ease of identification. Eyewitnesses may have then used these cues to inform their post-identification judgments, resulting in judgments that imply diagnosticity but are, in fact, artifacts of the culprit presence manipulation.

One might argue that these effects are benign. After all, exaggerated eyewitness testimony is still a useful tool if it is always an indicator of accuracy. However, euphoric experience does not only occur when a guilty culprit is present. It instead exists on a continuum: The more similar an innocent suspect is to the guilty culprit, the stronger the euphoric experience will be (Bradfield, Wells, & Olson, 2002; Charman & Wells, 2012). In the real world, one can never know if a strong euphoric experience is caused by the presence of the guilty culprit or a highly similar innocent suspect. Therefore, eyewitnesses relying on cues from the identification procedure to inform their post-identification judgments may produce misleading testimony, which may result in wrongful convictions if taken at face value.

Retrospective motivations. Culprit presence also influenced retrospective reports of motivation during the showup procedure. Compared to participants who saw an innocent suspect, participants who saw a guilty culprit reported being significantly more focused on catching the culprit and significantly less focused on avoiding an innocent suspect. As with the retrospective judgments, it is possible that the culprit presence manipulation may have created cues in the form of euphoric experience or ease of identification, and that eyewitnesses may have used these cues to infer their motivation at the time of the showup procedure (Charman et al., 2010; Charman & Wells, 2012). However, given that the motivation measures were assessed at the end of the study, it is impossible to know whether these retrospective motivations match the true

motivations that eyewitnesses experienced going into the showup procedure. Future studies could address this issue by measuring eyewitnesses' motivations prior to an identification procedure.

With that said, there were no significant main effects for culprit presence on the dichotomous motivation measure or on the combined motivation measure. It is possible, however, that the lack of differences on these two measures can be explained by properties of the items. Dichotomizing items reduces statistical power to detect relations between independent and dependent variables (Altman & Royston, 2006). Therefore, the dichotomous eyewitness motivation measure used here may have been too underpowered to detect any effects of culprit presence on eyewitness motivations, whereas the continuous measures had sufficient power to detect these effects.

In addition, combining eyewitnesses' motivation to catch the guilty culprit and avoid an innocent suspect into a single scale on the combined motivation measure may have been inappropriate. Doing so assumes that these two motivations are similar constructs that exist on the same continuum. However, examination of the correlation between the independent "catch guilty culprit" and "avoid innocent suspect" motivation measures revealed only a moderate relationship between the two items ($r = -.38$). This provides some evidence that motivation to avoid an innocent suspect is a separate construct from motivation to catch the guilty culprit and suggests that these two motivations should not be assessed on the same scale. However, direct examination of this hypothesis is needed before definitive conclusions can be reached. Furthermore, given that the effect of culprit presence on eyewitness motivations was not the subject of this study, one should be cautious in interpreting any of these findings.

Limitations

There are four limitations of this study that should be addressed in future examinations of victim-bystander status and eyewitness decision-making. The first limitation is that the culprit presence manipulation may have occluded the effect of victim-bystander status on eyewitnesses' post-identification judgments and retrospective motivations. As noted earlier, culprit presence significantly influenced eyewitnesses' motivations and identifiers' perceived decision-making performance and their perceived view of the culprit. It is possible that the differential difficulty in the culprit-present and culprit-absent showup tasks was more salient to participants than the victim-bystander manipulation. This may have resulted in underestimates of the effects of victim-bystander status on post-identification judgments. In addition, eyewitnesses' motivations were always assessed at the end of the experiment, in order to prevent participants' responses to manipulation check questions influencing their decision-making and responses at other points in the study. This decision to delay measuring eyewitnesses' motivation until the end of the procedures was made to protect the internal validity of this study with respect to the primary outcome of identification rates. However, doing so may have resulted in the culprit presence manipulation and other post-identification measures reducing the effect of victim-bystander status. Future studies may consider measuring eyewitness motivations earlier in the procedures, as doing so may reveal more differences in motivations between victims and bystanders.

A second limitation of this study is that the effect of victim-bystander status may have been weakened by the high likeability and friendliness of the confederate partners. Results from the partner rating survey, administered prior to the victim-bystander manipulation, indicate that participants generally viewed their partners as extremely friendly and likeable. However, the means and distribution of responses on these items were extremely close to the maximum rating

of 5, creating a ceiling effect. It is therefore possible that bystanders in this study experienced high empathy for their victimized partners and were victimized by proxy. In other words, bystanders may have been just as motivated as victims to catch the guilty culprit, because they could vividly imagine the theft happening to them. In other words, true differences may exist between victims and bystanders, but only when bystanders have a less amiable relationship with their partners.

Due to the ceiling effect and the lack of variance among responses in the current sample, it was not feasible to test whether perceived friendliness and likeability mediated the relationship between victim-bystander status and identification rates. To address this limitation, follow-up studies should examine whether manipulating likeability and friendliness of the confederate partner moderates the impact of victim-bystander status on identification rates. Alternatively, future studies could consider using a non-person entity as a “victim”, such as the federal government or a university. Doing so could help address the issue of bystanders experiencing victimization by proxy and could reveal differences in victims’ decision-making that cannot be accounted for here.

A third limitation of this study concerns the timing of the victim-bystander manipulation. Although the victim-bystander status manipulation was intentionally delayed to eliminate attention and encoding as possible mediators, it is possible that victims could significantly differ from bystanders in both the amount of attention paid to the culprit and quality of encoding for the culprit’s face. Given that victims experienced greater negative affect than bystanders, there is also theoretical reason to believe that victims would be less accurate than bystanders in an identification procedure. Prior research has shown that eyewitnesses who experience negative affect during a criminal event are less able to recognize a perpetrator from a photographic lineup

than eyewitnesses who experience neutral affect (Houston, Clifford, Phillips, & Memon, 2013). The lack of significant differences in victims' and bystanders' ability to distinguish between guilty culprits and innocent suspects in the current paradigm suggest that this detrimental effect of negative emotion may be negligible when attention and encoding are removed as potential mediators of the victim-bystander status manipulation. However, examining the full impact of victim-bystander status on recognition performance will require that participants be aware of their victim-bystander status at the same time that they observe the culprit and crime. Doing so will allow for examination of the effect of victim-bystander status on attention and encoding processes, which could result in differential performance during the showup procedure.

A final limitation of this study is that its findings can only be generalized to decision-making in showups, despite lineups being the most frequently-used identification procedure in the United States (Police Executive Research Forum, 2013). It should be noted that the decision to use showups in this study rather than lineups was a conscious one. In showups, eyewitnesses are presented with a single suspect and can either make an identification or reject the showup. This means that in showups, positive identifications map onto hits (in the culprit-present condition) and false alarms (in the culprit-absent condition). In lineups, however, eyewitnesses must also contend with fillers. Therefore, positive identification in culprit-present lineups are associated not only with culprit identifications, but with filler identifications. This means that, in lineups, false alarms can occur in both the culprit-present and culprit-absent conditions. Therefore, it was determined that using showups would allow for a cleaner interpretation of identification rates. Although it is unlikely that the findings in this study would change dramatically if lineups were used in place of showups, future studies may consider using lineups to allow for better generalizability of findings to the criminal justice system.

Conclusion

The results of this study indicate that, while victim-bystander status may only have a negligible impact on eyewitness decision-making during showup procedures, victim-bystander status can significantly influence eyewitnesses' perceived ability to identify a culprit and their willingness to testify in court. These findings suggest that eyewitnesses may bolster their retrospective judgments of the crime, even in the absence of true differences in performance. Overall, these findings add to the growing number of studies demonstrating the malleability of eyewitness testimony.

This study had originally aimed to resolve the conflicting findings in earlier research (Hosch & Cooper, 1982; Kassin, 1984) by developing a victim-bystander status paradigm that addressed the limitations of these early studies. Although this study still leaves many questions regarding victim-bystander status unanswered, it does provide a small advance in methods and knowledge over previous victim-bystander status research. Specifically, two facets of the paradigm developed for this study reflect strengths that can be applied not only to future victim-bystander research, but to eyewitness identification research in general.

First, this paradigm eliminated attention and encoding as possible mediators by delaying the victim-bystander status manipulation until immediately prior to the showup procedure. This ensured that no participants saw the actual theft occur and that participants became aware of the theft at the same time that they became aware of their status as a victim or bystander to the cellphone theft. One benefit of this approach is that one can disentangle effects of estimator variables on eyewitness memory and decision-making. Although one cannot rule out effects on recall processes at the time of identification, it is useful from an experimental perspective to

account for attention and encoding when examining the effects on eyewitness decision-making and performance.

Second, participants in the current paradigm were debriefed only after they made an identification decision and completed all post-identification measures. Accordingly, participants' decision-making occurred under the belief that their decisions could have real consequences for both the culprit and the resolution of the cellphone theft. In addition, post-identification measures were completed under the guise of a campus theft report, accessed via a series of bogus university webpages. This ensured that eyewitnesses continued to believe that their decision-making could have real consequences, even after the showup procedure had concluded. Accordingly, this study provides the field with a paradigm that allows researchers to maintain both high internal and ecological validity, even after an identification procedure occurs.

This second facet in particular makes the current paradigm promising for use in future research. Existing experimental paradigms have concentrated on eyewitness decision-making in situations where the identification outcome has little to no risk. The paradigm employed in this study can potentially be used to examine other aspects of eyewitness identification (e.g., comparing showups and lineups) in a context in which eyewitnesses believe that the consequences of their identification decision could have real consequences. This opens up several avenues for future research, including the follow-up studies mentioned in the discussion above. Accordingly, the paradigm developed in this study has the potential to contribute to the field in a manner that extends beyond the results of this single study.

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Table 1
Means for Self-Reported Retrospective Negative Affect, $N = 292$

	Culprit Absent		Culprit Present	
	<i>M (SD)</i>	95% CI	<i>M (SD)</i>	95% CI
Bystander				
Activation	1.42 (0.53)	[1.27, 1.56]	1.47 (0.56)	[1.33, 1.62]
Anger	2.10 (0.91)	[2.10, 2.36]	2.63 (1.18)	[1.83, 2.34]
Anxiety	2.47 (0.96)	[2.20, 2.73]	2.37 (1.01)	[2.11, 2.64]
Confusion	2.61 (0.85)	[2.39, 2.83]	2.57 (0.86)	[2.35, 2.78]
Dejection	1.89 (0.81)	[1.68, 2.11]	1.91 (0.81)	[1.69, 2.12]
Fatigue	1.51 (0.63)	[1.33, 1.69]	1.45 (0.60)	[1.27, 1.62]
Victim				
Activation	1.67 (0.74)	[1.53, 1.81]	1.53 (0.60)	[1.39, 1.67]
Anger	2.76 (1.27)	[2.51, 3.00]	2.63 (1.18)	[2.39, 2.88]
Anxiety	2.92 (1.27)	[2.67, 3.18]	2.81 (1.20)	[2.56, 3.06]
Confusion	2.64 (0.99)	[2.44, 2.85]	2.58 (0.95)	[2.37, 2.79]
Dejection	2.25 (0.99)	[2.05, 2.46]	2.18 (1.00)	[1.98, 2.39]
Fatigue	1.77 (0.91)	[1.60, 1.94]	1.60 (0.74)	[1.58, 1.92]

Note. *M* = mean, *SD* = standard deviation, CI = confidence interval.

Table 2
MANOVA Analysis of Effects of Manipulations on Retrospective Negative Affect, N = 292

	Wilk's Λ (<i>F</i>)	df	<i>p</i>	<i>d</i> (η_p^2)	LL	UL
Intercepts	.084 (514.28)	6, 283	<.001			
Activation	(1768.87)	3, 288	<.001			
Anger	(1401.23)	3, 288	<.001			
Anxiety	(1615.22)	3, 288	<.001			
Confusion	(2343.57)	3, 288	<.001			
Dejection	(1479.11)	3, 288	<.001			
Fatigue	(1327.55)	3, 288	<.001			
CP	.996 (.19)	6, 283	.979	(<.01)	<.01	<.01
Activation	(.31)	3, 288	.581	.07	-.16	.29
Anger	(.30)	3, 288	.582	.06	-.17	.29
Anxiety	(.64)	3, 288	.426	.09	-.14	.32
Confusion	(.24)	3, 288	.624	.06	-.17	.29
Dejection	(.07)	3, 288	.791	.03	-.20	.26
Fatigue	(.25)	3, 288	.619	.06	-.17	.29
VBS	.864 (7.44)	6, 283	<.001	(.13)	.06	.19
Activation	(4.73)	3, 288	.030	.25	.02	.49
Anger	(22.28)	3, 288	<.001	.55	.32	.79
Anxiety	(14.61)	3, 288	.001	.45	.22	.68
Confusion	(.04)	3, 288	.831	.02	-.21	.25
Dejection	(7.35)	3, 288	.003	.32	.09	.55
Fatigue	(5.77)	3, 288	.002	.28	.05	.51
CP * VBS	.989 (.51)	6, 283	.801	(.01)	<.01	.02
Activation	(1.76)	3, 288	.186	.16	-.07	.39
Anger	(.18)	3, 288	.669	.05	-.18	.28
Anxiety	(.01)	3, 288	.939	.01	-.22	.24
Confusion	(.01)	3, 288	.907	.01	-.22	.24
Dejection	(.14)	3, 288	.705	.04	-.19	.27
Fatigue	(.05)	3, 288	.820	.03	-.20	.26

Note. Cronbach's $\alpha = .96$. CP = culprit presence; VBS = victim-bystander status; *d* = Cohen's *d*; CI = confidence interval; LL = lower limit of Cohen's *d* for 95% CI; UL = upper limit of Cohen's *d* for 95% CI. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1). Estimates for Cohen's *d* and partial eta-squared (η_p^2) were calculated with a script developed by Wuensch (2012).

Table 3
Frequencies and Means for Self-Reported Retrospective Motivations to Avoid Identification Errors, N = 292

	Culprit Absent		Culprit Present	
	<i>M (SD)</i>	95% CI	<i>M (SD)</i>	95% CI
Bystander				
Dichotomous Motivation Measure	0.28 (0.45)	[0.17, 0.39]	0.23 (0.42)	[0.13, 0.33]
Motivation to Avoid Innocent Suspect	4.68 (1.18)	[4.39, 4.97]	4.36 (1.34)	[4.07, 4.65]
Motivation to Catch Guilty Culprit	3.75 (1.33)	[3.43, 4.08]	4.01 (1.25)	[3.69, 4.34]
Combined Motivation Measure	3.32 (1.99)	[2.80, 3.84]	3.74 (2.24)	[3.23, 4.26]
Victim				
Dichotomous Motivation Measure	0.17 (0.38)	[0.09, 0.25]	0.29 (0.46)	[0.21, 0.37]
Motivation to Avoid Innocent Suspect	4.84 (1.10)	[4.57, 5.12]	4.24 (1.32)	[3.96, 4.52]
Motivation to Catch Guilty Culprit	3.43 (1.52)	[3.12, 3.74]	3.83 (1.38)	[3.52, 4.14]
Combined Motivation Measure	3.44 (2.26)	[2.95, 3.93]	3.78 (2.20)	[3.29, 4.27]

Note. *M* = mean, *SD* = standard deviation, CI = confidence interval. Mean values for the dichotomous motivation measure represent the proportion of participants who reported that it was more important to catch the guilty culprit than to avoid an innocent suspect.

Table 4
Using Logistic Regression to Test Effects of Manipulations on Dichotomous Motivation Measure, N = 292

	β	95% CI	Wald	<i>p</i>	OR	95% CI
Intercept	-1.17	[-1.44, -.90]				
CP	.22	[-.33, .77]	.65	.422	1.25	[.72, 2.16]
VBS	-.15	[-.70, .40]	.31	.580	.86	[.50, 1.49]
CP * VBS	.95	[-.15, 2.05]	2.88	.090	2.56	[.62, 6.58]

Note. CP = culprit presence; VBS = victim-bystander status; SE = standard error; OR = odds ratio. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1). ORs for main effects calculated as $\exp(2b)$ and represent differences between factor levels, which were effect coded at -1 and +1. OR for interaction calculated as $\exp(4b)$ and represents the ratio of ORs associated with the constituent simple main effects.

Table 5
MANOVA Analysis of Effects of Manipulations on Continuous Motivation Measures, N = 156

	Wilk's Λ (F)	df	p	d (η_p^2)	LL	UL
Intercepts	.025 (3782.63)	3, 286	<.001			
Motivation to catch guilty culprit	(782.43)	1, 288	<.001			
Motivation to avoid innocent suspect	(3904.40)	1, 288	<.001			
Combined motivation measure	(2170.45)	1, 288	<.001			
CP	.960 (3.98)	3, 286	.008	(.04)	<.01	.09
Motivation to catch guilty culprit	(4.20)	1, 288	.041	.24	.01	.47
Motivation to avoid innocent suspect	(10.32)	1, 288	.001	.38	.14	.61
Combined motivation measure	(2.21)	1, 288	.138	.17	-.06	.40
VBS	.984 (1.57)	3, 286	.197	(.02)	<.01	.05
Motivation to catch guilty culprit	(2.50)	1, 288	.115	.19	-.04	.42
Motivation to avoid innocent suspect	(.022)	1, 288	.883	.02	-.21	.25
Combined motivation measure	(.094)	1, 288	.760	.04	-.19	.27
CP*VBS	.993 (.66)	3, 286	.577	(.01)	<.01	.03
Motivation to catch guilty culprit	(.188)	1, 288	.665	.05	-.18	.28
Motivation to avoid innocent suspect	(.954)	1, 288	.329	.11	-.12	.34
Combined motivation measure	(.031)	1, 288	.861	.02	-.21	.25

Note. CP = culprit presence; VBS = victim-bystander status; d = Cohen's d ; CI = confidence interval; LL = lower limit of Cohen's d for 95% CI; UL = upper limit of Cohen's d for 95% CI. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1). Estimates and corresponding confidence intervals for Cohen's d and partial eta squared (η_p^2) were calculated with a script developed by Wuensch (2012).

Table 6
Identification Rates and Signal Detection Measures.

	Culprit IDs	Innocent IDs	d'	c
Victims	77.5% (80)	30.8% (78)	1.257	-.127
Bystanders	72.0% (75)	30.0% (70)	1.107	-.029
Overall	74.8% (155)	30.4% (148)	1.180	-.077

Note. Values in parentheses refer to the number of participants in that condition. d' = discriminability index, c = response bias index. Differences between victims and bystanders in d' ($p = .629$) and c ($p = .195$) were nonsignificant.

Table 7
Using Logistic Regression to Test Effects of Manipulations on Identification Rates, N = 303

	β	95% CI	Wald	<i>p</i>	OR	95% CI
Intercept	.13	[-.12, .38]				
CP	1.92	[1.41, 2.43]	1.18	<.001	6.82	[4.11, 11.31]
VBS	.16	[-.34, .67]	1.29	.524	1.18	[.71, 1.95]
CP * VBS	.26	[-.76, 1.27]	.246	.620	1.29	[.47, 3.55]

Note. CP = culprit presence; VBS = victim-bystander status; SE = standard error; OR = odds ratio. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1). ORs for main effects calculated as $\exp(2b)$ and represent differences between factor levels, which were effect coded at -1 and +1. OR for interaction calculated as $\exp(4b)$ and represents the ratio of ORs associated with the constituent simple main effects.

Table 8

Descriptive Statistics for Immediate Confidence Ratings and Response Latency (N = 303)

	Culprit-absent				Culprit-present			
	Bystanders		Victims		Bystanders		Victims	
	<i>M</i>	95% CI	<i>M</i>	95% CI	<i>M</i>	95% CI	<i>M</i>	95% CI
Immediate confidence								
Identifiers	6.43	[5.57, 7.29]	7.33	[6.69, 7.98]	7.44	[7.03, 7.86]	7.29	[6.70, 7.88]
Non-identifiers	7.25	[6.59, 7.90]	6.65	[5.84, 7.46]	6.81	[5.69, 7.93]	5.89	[4.87, 6.91]
Response latency								
Identifiers	34.89	[28.00, 41.78]	25.13	[21.91, 28.35]	39.60	[33.36, 45.84]	30.58	[26.06, 35.10]
Non-identifiers	24.42	[21.00, 27.84]	28.76	[24.95, 32.57]	37.82	[28.63, 46.99]	22.53	[18.69, 26.37]

Note. CI = confidence interval. Response latency is measured in seconds.

Table 9
Two-Way ANOVAs Examining Effects of Manipulations on Immediate Confidence Ratings
and Response Latency for Identifications and Rejections

	<i>F</i>	<i>df</i>	<i>p</i>	<i>d</i>	LL	UL
Immediate confidence						
(Identifications, <i>n</i> = 161)						
Intercept	1784.18	1, 157	<.001			
CP	2.08	1, 157	.151	.25	-.09	.60
VBS	1.24	1, 157	.268	.20	-.15	.54
CP * VBS	2.46	1, 157	.119	.26	-.07	.59
Immediate confidence						
(Rejections, <i>n</i> = 142)						
Intercept	757.62	1, 138	<.001			
CP	1.53	1, 138	.218	.23	-.14	.60
VBS	2.47	1, 138	.119	.30	-.07	.67
CP * VBS	.11	1, 138	.738	.06	-.27	.38
Response latency ^a						
(Identifications, <i>n</i> = 159)						
Intercept	890.93	1, 155	<.001			
CP	.04	1, 155	.956	.04	-.31	.38
VBS	2.92	1, 155	.093	.27	-.04	.59
CP * VBS	<.01	1, 155	.929	.01	-.31	.32
Response latency ^a						
(Rejections, <i>n</i> = 139)						
Intercept	974.06	1, 135	<.001			
CP	.33	1, 135	.567	.11	-.26	.48
VBS	.17	1, 135	.678	.08	-.29	.45
CP * VBS	2.97	1, 135	.087	.29	-.04	.63

Note. CP = culprit presence; VBS = victim-bystander status; *d* = Cohen's *d*; CI = confidence interval; LL = lower limit of Cohen's *d* for 95% CI; UL = upper limit of Cohen's *d* for 95% CI. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1). Cohen's *d* and the corresponding confidence intervals were calculated with a script developed by Wuensch (2012).

^aResponse latency was log-transformed to reduce positive skew in the data.

Table 10
Means for Post-Identification Judgments of Ability to Identify the Culprit by Eyewitnesses Who Made a Positive Identification, N = 156

	Culprit Absent		Culprit Present	
	<i>M (SD)</i>	95% CI	<i>M (SD)</i>	95% CI
Bystander				
Viewing quality	4.76 (2.41)	[3.61, 5.92]	6.78 (2.80)	[6.03, 7.53]
Specific facial features	3.57 (1.83)	[2.49, 4.65]	5.32 (2.64)	[4.62, 6.02]
Attention paid	3.19 (1.91)	[2.06, 4.32]	4.00 (2.46)	[3.27, 4.73]
Clarity of image	4.67 (1.83)	[3.59, 5.74]	5.38 (2.47)	[4.68, 6.08]
Recognition memory	6.52 (2.27)	[5.49, 7.56]	6.08 (2.36)	[5.41, 6.75]
Victim				
Viewing quality	6.29 (3.01)	[5.21, 7.37]	6.79 (2.52)	[6.11, 7.46]
Specific facial features	5.42 (2.59)	[4.41, 6.43]	4.93 (2.56)	[4.62, 6.02]
Attention paid	4.96 (2.82)	[3.90, 6.01]	4.11 (2.85)	[3.45, 4.78]
Clarity of image	6.17 (2.57)	[5.16, 7.17]	5.90 (2.68)	[5.27, 6.53]
Recognition memory	6.46 (2.30)	[5.49, 7.42]	6.39 (2.49)	[5.79, 7.00]

Note. *M* = mean, *SD* = standard deviation, CI = confidence interval.

Table 11
Means for Post-Identification Judgments of Perceived Decision-Making Performance and Willingness to Testify by Eyewitnesses Who Made a Positive Identification. N = 156

	Culprit Absent		Culprit Present	
	<i>M (SD)</i>	95% CI	<i>M (SD)</i>	95% CI
Bystander				
Delayed Confidence	56.10 (22.24)	[46.02, 66.17]	67.94 (21.28)	[61.41, 74.47]
Basis for ID	5.67 (2.20)	[4.64, 6.70]	6.18 (2.84)	[5.51, 6.85]
Ease of ID	4.76 (2.19)	[3.61, 5.91]	6.12 (2.58)	[5.37, 6.87]
Time to ID	5.19 (2.68)	[3.99, 6.39]	3.60 (2.75)	[2.82, 4.28]
Willingness to Testify	3.86 (2.52)	[2.64, 5.08]	5.40 (2.84)	[4.61, 6.19]
Victim				
Delayed Confidence	67.25 (22.70)	[57.83, 76.67]	70.89 (25.50)	[64.98, 76.80]
Basis for ID	6.17 (2.84)	[5.20, 7.13]	6.59 (2.36)	[5.99, 7.20]
Ease of ID	5.79 (2.83)	[4.72, 6.87]	6.39 (2.82)	[5.72, 7.07]
Time to ID	4.25 (3.05)	[3.12, 5.38]	2.87 (2.76)	[2.16, 3.58]
Willingness to Testify	6.33 (2.62)	[5.19, 7.48]	6.15 (3.00)	[5.43, 6.86]

Note. *M* = mean, *SD* = standard deviation, CI = confidence interval.

Table 12
MANOVA Analysis of Post-Identification Judgments of Ability to Identify the Culprit by Eyewitnesses Who Made a Positive Identification, N = 156

	Wilk's Λ (F)	df	p	d (η_p^2)	LL	UL
Intercepts	.117 (223.25)	5, 148	<.001			
Viewing quality	(672.84)	1, 152	<.001			
Specific facial features	(468.63)	1, 152	<.001			
Attention paid	(307.48)	1, 152	<.001			
Clarity of image	(624.48)	1, 152	<.001			
Recognition memory	(901.38)	1, 152	<.001			
CP	.917 (2.68)	5, 148	.024	(.08)	<.01	.15
Viewing quality	(7.01)	1, 152	.009	.47	.12	.82
Specific facial features	(2.03)	1, 152	.156	.25	-.10	.60
Attention paid	(<.01)	1, 152	.971	.01	-.34	.35
Clarity of image	(.26)	1, 152	.613	.09	-.26	.44
Recognition memory	(.36)	1, 152	.549	.11	-.24	.45
VBS	.949 (1.60)	5, 148	.163	(.05)	<.01	.10
Viewing quality	(2.62)	1, 152	.108	.26	-.06	.58
Specific facial features	(2.69)	1, 152	.103	.26	-.05	.58
Attention paid	(4.12)	1, 152	.044	.33	.01	.64
Clarity of image	(5.22)	1, 152	.024	.37	.05	.69
Recognition memory	(.09)	1, 152	.770	.05	-.27	.36
CP*VBS	.925 (2.39)	5, 148	.040	(.07)	<.01	.14
Viewing quality	(2.57)	1, 152	.111	.26	-.06	.57
Specific facial features	(6.30)	1, 152	.013	.40	.08	.72
Attention paid	(3.18)	1, 152	.077	.29	-.03	.60
Clarity of image	(1.22)	1, 152	.271	.18	-.14	.49
Recognition memory	(.20)	1, 152	.656	.07	-.24	.39

Note. CP = culprit presence; VBS = victim-bystander status; d = Cohen's d ; CI = confidence interval; LL = lower limit of Cohen's d for 95% CI; UL = upper limit of Cohen's d for 95% CI. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1). Estimates and corresponding confidence intervals for Cohen's d and partial eta squared (η_p^2) were calculated with a script developed by Wuensch (2012).

Table 13
 MANOVA Analysis of Post-Identification Judgments of Perceived Decision-Making
 Performance by Eyewitnesses Who Made a Positive Identification, $N = 156$

	Wilk's Λ (F)	df	p	d (η_p^2)	LL	UL
Intercepts	.037 (972.42)	4, 149	<.001			
Delayed Confidence	(1002.06)	1, 152	<.001			
Basis for ID	(841.37)	1, 152	<.001			
Ease of ID	(593.87)	1, 152	<.001			
Time to ID	(258.39)	1, 152	<.001			
CP	.940 (2.37)	4, 149	.056	(.06)	<.01	.12
Delayed Confidence	(3.49)	1, 152	.064	.33	-.02	.68
Basis for ID	(1.22)	1, 152	.271	.20	-.15	.54
Ease of ID	(4.28)	1, 152	.040	.37	.02	.71
Time to ID	(9.02)	1, 152	.003	.53	.18	.88
VBS	.977 (.89)	4, 149	.475	(.02)	<.01	.06
Delayed Confidence	(2.90)	1, 152	.091	.27	-.04	.59
Basis for ID	(1.15)	1, 152	.285	.17	-.14	.49
Ease of ID	(1.90)	1, 152	.171	.22	-.09	.54
Time to ID	(2.85)	1, 152	.093	.27	-.05	.59
CP*VBS	.984 (.81)	4, 149	.657	(.02)	<.01	.06
Delayed Confidence	(.98)	1, 152	.323	.16	-.16	.47
Basis for ID	(.01)	1, 152	.916	.02	-.30	.33
Ease of ID	(.64)	1, 152	.426	.13	-.19	.44
Time to ID	(.05)	1, 152	.833	.04	-.28	.35

Note. CP = culprit presence; VBS = victim-bystander status; d = Cohen's d ; CI = confidence interval; LL = lower limit of Cohen's d for 95% CI; UL = upper limit of Cohen's d for 95% CI. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1). Estimates and corresponding confidence intervals for Cohen's d and partial eta squared (η_p^2) were calculated with a script developed by Wuensch (2012).

Table 14
 ANOVA Analysis of Post-Identification Willingness to Testify by Eyewitnesses Who Made a Positive Identification, $N = 156$

	<i>F</i>	df	<i>p</i>	<i>d</i>	LL	UL
Intercepts	486.61	1, 152	.009			
CP	1.83	1, 152	.179	.24	-.11	.59
VBS	10.31	1, 152	.002	.52	.20	.84
CP*VBS	2.96	1, 152	.087	.28	-.04	.59

Note. CP = culprit presence; VBS = victim-bystander status; *d* = Cohen's *d*; CI = confidence interval; LL = lower limit of Cohen's *d* for 95% CI; UL = upper limit of Cohen's *d* for 95% CI. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1). Estimates and confidence intervals for Cohen's *d* were calculated with a script developed by Wuensch (2012).

Table 15
Mediation Effects of Anger on the Relationship between Experimental Effects and Attention Paid to the Culprit, N = 156

Effect	β	95% CI		<i>p</i>
		Lower	Upper	
Total				
Intercept	5.07	4.61	5.52	<.001
CP	-.01	-.47	.45	.971
VBS	.47	.01	.93	.044
CP * VBS	-.41	-.87	.04	.077
Direct				
Intercept	3.82	2.79	4.85	<.001
Anger	.07	.02	.13	.009
CP	.06	-.39	.51	.787
VBS	.30	-.16	.77	.197
CP * VBS	-.36	-.81	.09	.119
Indirect (mediation)				
Anger	.16	.03	.41	<.050

Note. CP = culprit presence; VBS = victim-bystander status; SE = standard error. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1).

Table 16
Mediation Effects of Anger on the Relationship between Experimental Effects and Number of Specific Facial Features of the Culprit Attended To, N = 156

Effect	β	95% CI		<i>p</i>
		Lower	Upper	
Total				
Intercept	5.85	5.39	6.30	<.001
CP	.33	-.12	.79	.108
VBS	.37	-.08	.83	.150
CP * VBS	-.57	-1.03	-.12	.014
Direct				
Intercept	5.67	4.62	6.72	<.001
Anger	.01	-.04	.06	.715
CP	.34	-.12	.80	.143
VBS	.35	-.12	.82	.147
CP * VBS	-.56	-1.02	-.10	.017
Indirect (mediation)				
Anger	.02	-.13	.18	>.050

Note. CP = culprit presence; VBS = victim-bystander status; SE = standard error. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1).

Table 17
*Mediation Effects of Anger on the Relationship between Experimental Effects and Clarity of
 Culprit's Face, N = 156*

Effect	β	95% CI		<i>p</i>
		Lower	Upper	
Total				
Intercept	6.53	6.09	6.97	<.001
CP	.11	-.33	.55	.613
VBS	.51	.07	.94	.024
CP * VBS	-.24	-.68	.19	.271
Direct				
Intercept	5.99	4.98	6.99	<.001
Anger	.03	-.02	.08	.237
CP	.14	-.30	.58	.522
VBS	.43	-.02	.89	.060
CP * VBS	-.22	-.66	.22	.321
Indirect (mediation)				
Anger	.07	-.04	.25	>.050

Note. CP = culprit presence; VBS = victim-bystander status; SE = standard error.
 Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1,
 bystander = -1).

Table 18
Mediation Effects of Anger on the Relationship between Experimental Effects and Willingness to Testify in Court About Identification Decision, N = 156

Effect	β	95% CI		<i>p</i>
		Lower	Upper	
Total				
Intercept	6.43	5.94	6.93	<.001
CP	.34	-.16	.84	.179
VBS	.81	.31	1.30	.002
CP * VBS	-.43	-.93	.06	.087
Direct				
Intercept	5.91	4.77	7.05	<.001
Anger	.03	-.03	.09	.317
CP	.37	-.13	.87	.147
VBS	.74	.22	1.25	.005
CP * VBS	-.41	-.91	.09	.107
Indirect (mediation)				
Anger	.07	-.06	.26	>.050

Note. CP = culprit presence; VBS = victim-bystander status; SE = standard error. Manipulations were effect-coded (culprit-present = +1, culprit-absent = -1; victim = +1, bystander = -1).

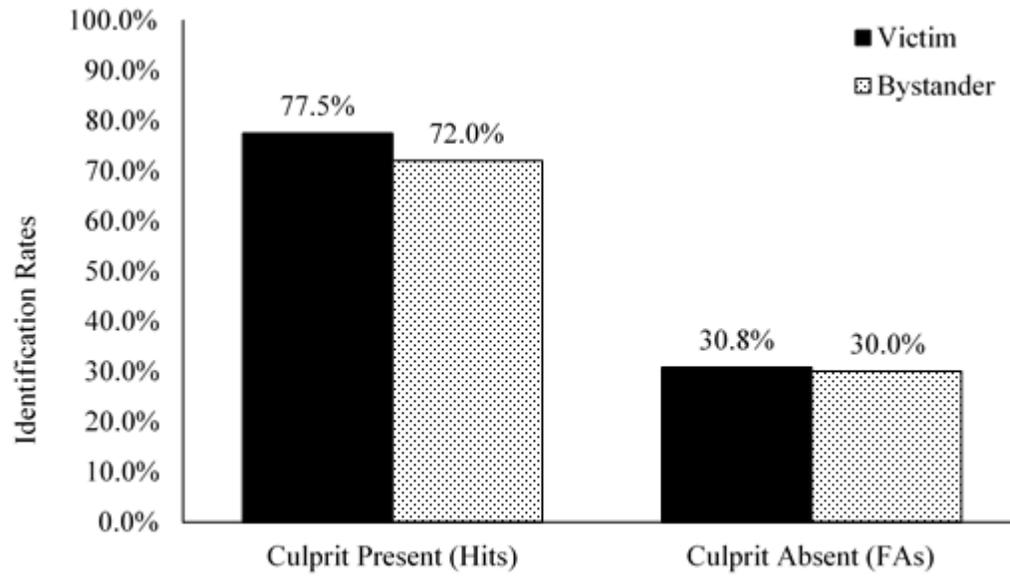
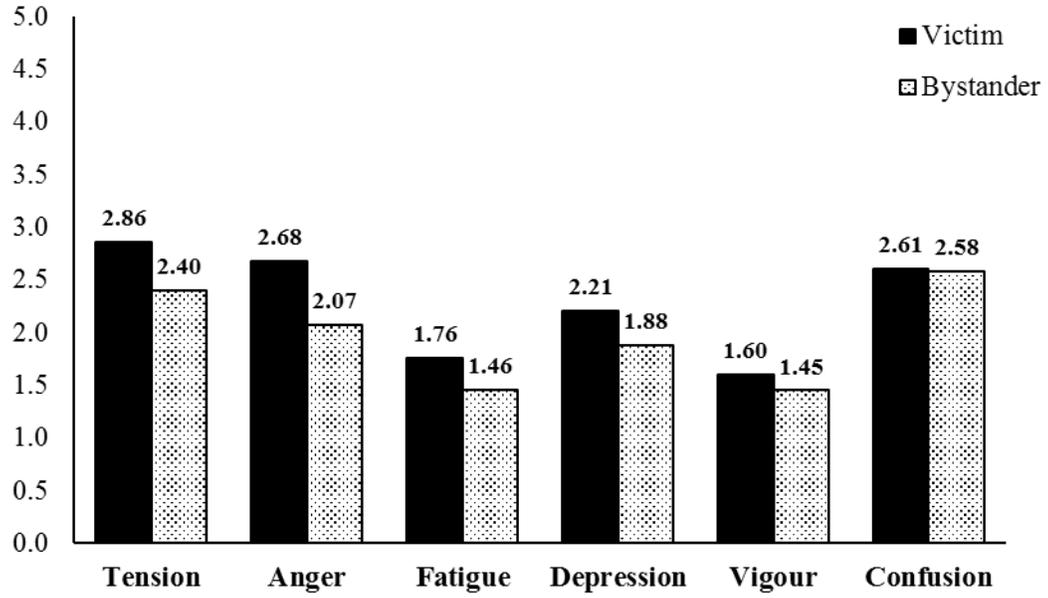


Figure 1. Identification rates across culprit presence and victim-bystander status.



Shortened Profile of Mood States Scores

APPENDIX A
DEMOGRAPHICS QUESTIONNAIRE

Please answer the following questions about yourself.

1. Age (in years): _____
2. Sex: Female Male
3. Ethnicity: European American
 African American
 Native American
 Latin American, Hispanic, or Latina/o
 Middle Eastern
 Asian or Asian-American
 Multi-ethnic (please specify) _____

APPENDIX B

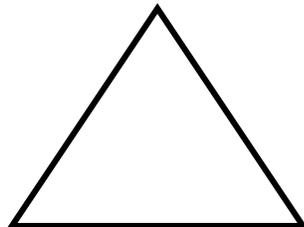
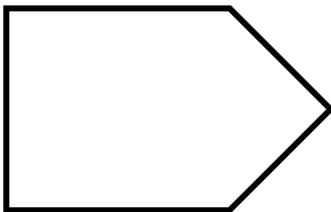
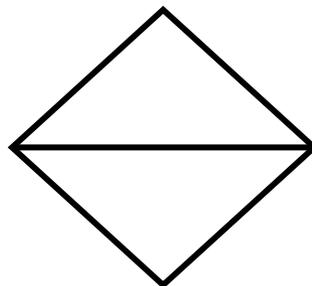
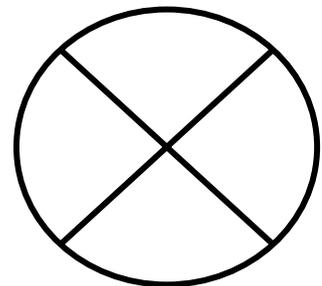
BOGUS COMMUNICATION TASK

Back-to-Back Communication Task Participant Instructions and Shapes

Prior to starting the task, the experimenter will give the following instruction to the participant and her or his partner. The experimenter will also give the participant a pad of paper and a pencil. This task serves as a retention interval filler task and as part of the cover story.

Instruction: In this task, you and your partner will pair up back-to-back and attempt to re-create a drawing with only limited verbal instructions. (*To participant*) Your partner will give you verbal instructions on how to draw the image or shape, without actually telling you what the shape is. I have already explained the rules to your partner. You will have 5 minutes to get through as many of the shapes as you can and 5 minutes to complete the partner rating survey.

Below are the shapes that will be used as part of the task.

Square:**Triangle:****Thin Rectangle:****Sideways Pentagon:****Diamond:****Circle with "X" Inside:**

Back-to-Back Communication Task Confederate Instructions

The following instructions will be read to the participant by her or his partner.

Easy Shapes:

1. Square
 - Draw a vertical line. From where you ended the vertical line, draw a horizontal line to the right that is the same length as the vertical line. From where you ended the horizontal line, draw a vertical line going up that is the same length as the other vertical line. Draw a line connecting the tops of the vertical lines.
2. Triangle
 - Draw a vertical line. From where you ended the vertical line, draw a horizontal line to the right. Draw a line connecting the two ends.
3. Thin rectangle
 - Draw two, long, parallel lines horizontally of the same length. Connect the two right ends. Connect the two left ends.

Medium Shapes:

1. Sideways pentagon
 - Draw a horizontal line to the left. From where you ended the horizontal line, draw a vertical line of the same length, going down. From where you ended the vertical line, draw a horizontal line to the right that is the same length. Draw a diagonal line up and to the right, that ends at the halfway point of the vertical line. Connect the end of the diagonal line to the start of the first horizontal line.
2. Diamond:
 - Draw a horizontal line to the right. Draw a diagonal line up and to the left that ends at the halfway point of the horizontal line. Connect the end of the diagonal line to the start of the first horizontal line. From the start of the horizontal line, draw a diagonal line down and to the right that ends at the halfway point of the horizontal line. Connect the end of that diagonal line to the end of the horizontal line.
3. Circle with 'X' inside
 - Draw a diagonal line down, to the right. Draw another diagonal line down and to the left of the same length that crosses at the middle of the first line. Draw another line of the same length that crosses at the middle of the first line. At the starting point of the first line, draw a curved line to the right that encompasses both lines and ends where you started.

Back-to-Back Communication Task Partner Rating Survey

1. Please rate your partner on the following characteristics:

unfriendly	1	2	3	4	5	friendly
quiet	1	2	3	4	5	talkative
dependent	1	2	3	4	5	independent
unintelligent	1	2	3	4	5	intelligent
needy	1	2	3	4	5	self-reliant
unlikeable	1	2	3	4	5	likeable
gave directions poorly	1	2	3	4	5	gave directions well

2. What did you like best about your partner? _____

3. What did you like least about your partner? _____

4. If presented with additional communication tasks, would you prefer to continue working with the same partner or be assigned to a different partner? Please respond on the following scale.

1	2	3	4	5	6
Strong preference for a <u>different</u> partner	Moderate preference for a <u>different</u> partner	Slight preference for a <u>different</u> partner	Slight preference for the <u>same</u> partner	Moderate preference for the <u>same</u> partner	Strong preference for the <u>same</u> partner

APPENDIX C

CULPRIT AND INNOCENT SUSPECT PHOTOGRAPHS

Photographs used in the showup procedure will be taken using a Digital Single Lens Reflex (DSLR) camera with the consent of Iowa State students. Each photograph will have no other identifying information attached to it. Permission to use these photographs will be acquired before their use in the experiment. After the experiment, participants will be informed that the subjects of the photograph committed no crimes, and were merely a part of the experiment

For each “thief”, there will be one culprit photograph and three innocent suspect photographs. Each photograph will be of an individual against a vertical white background with a towel covering up their clothing. Each participant will be shown a single photograph of either the guilty culprit or an innocent suspect. Upon viewing the photograph on a lab computer, the experimenter will verbally ask participants to confirm whether the person in the photograph is the “thief” that they saw earlier. The experimenter may also verbally ask the participant to give a confidence rating (e.g., so...on a scale of 1-10, how confident are you that this is/is not the thief?).

APPENDIX D
SUSPICION CHECK FORM

1. Please indicate what you knew about this study before participating.

2. Sometimes the true purpose of a study is not obvious, and researchers are investigating something that is very different from what they tell the participant. Do you believe that this was the case in this study?

Yes: _____ No: _____

3. If “Yes”, please indicate what you think the true purpose of this study was.

APPENDIX E

BOGUS CAMPUS THEFT REPORT

The following questions will be presented as an official campus theft report form available on the Dean of Students Office webpage. They will be presented via Qualtrics.

1. At approximately what time did the incident occur?

2. Please provide a description of the incident in as much detail as you can.

3. Did you witness the incident occur?

- Yes
 No

4. Did you see the person who committed the crime (i.e., the perpetrator)?

- Yes
 No

If you answered "Yes" to Question 4, please answer the following questions.

5. Please provide a description of the perpetrator in as much detail as you can.

6. Were you an acquaintance, friend, or relative of the perpetrator?

- Yes
 No

7. Were you asked to identify the perpetrator from a photograph, showup, or lineup?

- Yes
 No

8. At the time you identified the person in the photograph, showup, or lineup, how certain were you that the person you identified was the perpetrator?

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Not at all certain										Totally Certain

9. At the time of the incident, how good a view did you get of the perpetrator?

0	1	2	3	4	5	6	7	8	9	10
Very poor										Very good

10. At the time of the incident, how well were you able to make out specific features of the perpetrator's face?

0	1	2	3	4	5	6	7	8	9	10
Not at all										Very well

11. At the time of the incident, how much attention were you paying to the face of the perpetrator?

0	1	2	3	4	5	6	7	8	9	10
None										My total attention

12. To what extent do you feel that you had a good basis to make an identification?

0	1	2	3	4	5	6	7	8	9	10
No basis at all										A very good basis

13. How easy was it for you to figure out whether the person in the photograph, showup, or lineup was the perpetrator?

0	1	2	3	4	5	6	7	8	9	10
Extremely difficult										Extremely easy

14. From the time that you were first shown a photograph of the suspected perpetrator, how much time do you estimate it took you to make an identification?

0	1	2	3	4	5	6	7	8	9	10
I needed almost no time										I had to think about the lineup for a long time

15. On the basis of your memory of the culprit, how willing would you have been to testify in court that the person you identified was the same person you commit the crime?

0	1	2	3	4	5	6	7	8	9	10
Not at all willing										Totally willing

16. Generally, how good is your recognition memory for faces of strangers you have encountered on only one prior occasion?

0	1	2	3	4	5	6	7	8	9	10
Very poor										Excellent

17. How clear is the image you have in your memory of the person you saw?

0	1	2	3	4	5	6	7	8	9	10
Not at all clear										Very clear

18. Have you ever been a victim of a crime prior to this incident?

- Yes
 No

19. (If "Yes" on Question 18) Have you ever been a victim of the *same type of crime* as the current incident?

- Yes
 No

APPENDIX F

SHORTENED PROFILE OF MOOD STATES

Directions: Below is a list of words that describe feelings people have. Please read each feeling carefully, and mark the answer that best describes how you felt **RIGHT AFTER** you **discovered [your/your partner's] cellphone was missing.**

	Not at all	A little	Moderately	Quite a bit	Extremely
Tense					
Angry					
Worn Out					
Unhappy					
Lively					
Confused					
Peeved					
Sad					
Active					
On edge					
Grouchy					
Blue					
Energetic					
Hopeless					
Uneasy					
Restless					
Unable to concentrate					
Fatigued					
Annoyed					
Discouraged					
Resentful					
Nervous					
Miserable					
Cheerful					
Bitter					
Exhausted					
Anxious					
Helpless					
Weary					
Bewildered					
Furious					
Full of pep					
Worthless					
Forgetful					
Vigorous					
Uncertain about things					
Bushed					

APPENDIX G

MANIPULATION CHECKS

- Which of the following did you consider to be **most important** when you were asked to decide whether the photograph was of the actual thief? (*Select only one*)
 - Making sure the guilty culprit didn't get away
 - Not accusing an innocent person of a crime
- When you were asked to decide whether the photograph was of the actual thief, were you more concerned about the possibility of identifying an innocent person, or about letting the guilty culprit get away with the crime?

1	2	3	4	5	6	7	8
Much more concerned about identifying an innocent person	Moderately more concerned about identifying an innocent person	Somewhat more concerned about identifying an innocent person	A bit more concerned about identifying an innocent person	A bit more concerned about letting the guilty culprit get away with the crime	Somewhat more concerned about letting the guilty culprit get away with the crime	Moderately more concerned about letting the guilty culprit get away with the crime	Much more concerned about letting the guilty culprit get away with the crime

- When I was asked to identify the person in the photograph, I was most focused on ensuring that the guilty culprit didn't get away.

1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

- When I was asked to identify the person in the photograph, I was most focused on ensuring that I did not accuse an innocent suspect of a crime.

1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

APPENDIX H

DEBRIEFING

At this point, I'd like to tell you about the experiment. It's very important that you not share this information with others who might participate in our study in the future. If a participant knew the study's purpose before participating, their data would be invalid and our findings would be invalid as a result.

This study was designed to examine how being a victim or bystander to a crime can affect eyewitnesses' ability to accurately identify suspects. All participants were told that they were going to be part of a communication study in which they work with a partner both in person and via cellphones. In addition, all participants saw a person walk into the room with cellphones at the beginning of the experiment, and were later told that a cellphone was missing. This is not true. We manipulated victim-bystander status by telling some participants that their cellphone was missing, and telling other participants that their partner's cellphone was missing. In reality, the cellphone was never moved out of the room, and the thief is actually a confederate working with the research team. ***(If in Victim Condition) Your cellphone is safe in the room next door, and we will be giving it back to you in just a couple of minutes.*** We also want to let you know that if you feel upset by today's study, we have information on how to contact the Student Counseling Center, if you would like to have it.

All participants were then asked to identify the fake thief from a photograph on the computer. The photographs that were taken at the beginning of the study were used as a cover story for why we had a photograph of the potential suspect; your photograph was never intended to be used as part of this study and will be deleted without further use. Half the participants were shown a photo of the "thief" that they saw enter the room earlier, while the other half of participants were shown a photo of someone matching the thief's description.

In addition to the above procedures, all participants filled out a Campus Theft Report. However, this form is not real, and was created for the purpose of this experiment. Your responses to the form are anonymous, and there will be no consequences for any of your responses. Finally, throughout the experiment, all participants in the study completed a battery of surveys that may have assessed demographics, academic achievement, memory, and personality, etc.

I also want to explain why we did all of this. Eyewitness misidentification is the leading cause of wrongful conviction in the United States. The accuracy of identification is determined by how well you remember the culprit's face, but is also determined by your decision to choose or not choose a suspect in a lineup. Sometimes a person's memory for a culprit's face is strong, but they decide not pick him or her. Other times, a person's memory for a culprit's face is weak, but they decide to identify him or her anyway.

The underlying purpose of this research is to understand how eyewitnesses who are victims or bystanders decide whether or not to identify a suspect. Since many eyewitnesses are also the victims in a crime, it is important to understand whether these eyewitnesses make identification decisions differently than eyewitnesses who are simply bystanders.

We didn't tell you this up front because sometimes people will consciously or unconsciously change their behavior if they know what the true purpose of a study is about. Because of this, it's very important that you not share this information with others who might participate in our study in the future. If a participant knew what the study was about before participating, their data would be invalid and our study would be ruined. Do you promise not to tell? If somebody asks you what the study is about, you can tell them it's about cellphone communication, and that during the experiment you answered surveys and worked with a partner on some communication games.

APPENDIX I

IRB APPROVAL LETTER

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
2420 Lincoln Way, Suite 202
Ames, Iowa 50014
515 294-4566

Date: 5/22/2017

To: Ryan Ditchfield
W112 Lagomarcino

CC: Dr. Stephanie Madon
W112 Lagomarcino Hall
Dr. Max Guyll
W112 Lagomarcino

From: Office for Responsible Research

Title: Victim-Bystander Status Effects on Eyewitness Decision-Making

IRB ID: 17-189

Approval Date: 5/22/2017 **Date for Continuing Review:** 5/15/2019

Submission Type: New **Review Type:** Full Committee

The project referenced above has received approval from the Institutional Review Board (IRB) at Iowa State University according to the dates shown above. Please refer to the IRB ID number shown above in all correspondence regarding this study.

To ensure compliance with federal regulations (45 CFR 46 & 21 CFR 56), please be sure to:

- Use only the approved study materials in your research, including the recruitment materials and informed consent documents that have the IRB approval stamp.
- Retain signed informed consent documents for 3 years after the close of the study, when documented consent is required.
- Obtain IRB approval prior to implementing any changes to the study by submitting a Modification Form for Non-Exempt Research or Amendment for Personnel Changes form, as necessary.
- Immediately inform the IRB of (1) all serious and/or unexpected adverse experiences involving risks to subjects or others; and (2) any other unanticipated problems involving risks to subjects or others.
- Stop all research activity if IRB approval lapses, unless continuation is necessary to prevent harm to research participants. Research activity can resume once IRB approval is reestablished.
- Complete a new continuing review form at least three to four weeks prior to the date for continuing review as noted above to provide sufficient time for the IRB to review and approve continuation of the study. We will send a courtesy reminder as this date approaches.

Please be aware that IRB approval means that you have met the requirements of federal regulations and ISU policies governing human subjects research. Approval from other entities may also be needed. For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. IRB approval in no way implies or guarantees that permission from these other entities will be granted.

Upon completion of the project, please submit a Project Closure Form to the Office for Responsible Research, 202 Kingland, to officially close the project.

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.