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Abstract

This research investigated implicit attitudes toward police among civilians. Two preliminary studies served as an empirical foundation for the current study, as both assessed the implicit construct activation of safety and fear when participants were primed with police using a modified version of the Word Fragment Completion Task (e.g., Johnson & Lord, 2010). The findings were counter-intuitive, such that in a college sample safety construct activation increased and fear decreased when primed with police, whereas in an online sample safety and fear construct activation increased. The current study sought to clarify these trends by utilizing four modified versions of the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) to assess the comparative positive and negative implicit associations individuals have with police officers. Findings indicated stronger negative implicit associations (i.e., associating police with fear/bad) than positive implicit associations (i.e., associating police with safety/good) across all four versions of the police officer IAT. The predictive validity of the implicit associations and magnitude of D scores varied across IAT version, such that the versions involving categorization of police-related (versus everyday) symbols were most sensitive (i.e., had the strongest D scores) and the versions involving categorization of police (versus civilian) models had the most predictive validity. Various individual difference variables, including race and political affiliation, were tested as possible moderating variables. The use of implicit measures in the assessment of civilian perceptions of police is a novel approach, as previous research has solely used explicit measures (or examined police officers' implicit reactions to civilians). The findings from this area of research prompt the need to further assess the underlying cognitive components of civilian attitudes toward police officers.

Keywords: implicit attitude, implicit association, construct activation, police officers

AN INVESTIGATION OF CIVILIAN IMPLICIT ATTITUDES TOWARD POLICE
OFFICERS

by

Rikki H. Sargent

B.A., Shippensburg University of Pennsylvania, 2016

Master's Thesis

Submitted in partial fulfillment of the requirements for the degree of
Master of Science in Psychology

Syracuse University
December 2018

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An Investigation of Civilian Implicit Attitudes Toward Police Officers

Police officers are expected to protect civilians. Starting at a young age, many children are taught to reach out to police officers for help. However, tension between the police and civilian populations is on the rise. This comes in part from the widespread discussion of alleged police brutality, where numerous unarmed civilians have been killed by police officers (e.g., Eric Garner-New York City, NY, Michael Brown Jr.-Ferguson, MO, Dante Parker-Victorville, CA, Tamir Rice-Cleveland, OH, Walter Scott-North Charleston, SC, Freddie Gray-Baltimore, MD; Kindy, Lowery, Rich, Tate, & Jenkins, 2016; Quah & Davis, 2015). Police officers, while expected to protect the community, may also be perceived as a threat (Chaney & Robertson, 2013). It is crucial to empirically assess civilian attitudes toward police officers, as this knowledge will lead to further investigation of police-civilian relations. Although there is research assessing explicit attitudes toward police officers—that is, attitudes that are consciously available—there has been an absence of research assessing implicit attitudes toward police officers—that is, attitudes that are not consciously available, but nonetheless affect behavior.

Considering the job description of police officers (i.e., to protect the community; e.g., “How to Become a Police Officer,” 2017) and the current police-civilian climate (e.g., increased visibility of instances of police brutality and misconduct, increased distrust in law enforcement; Chaney & Robertson, 2013; Packman, 2011), the specific emotional constructs of safety and fear as well as the evaluative constructs of good and bad were assessed in relation to implicit attitudes toward police officers. Furthermore, the safety-fear dimension was of particular interest due to the role of fear in emotional processing theory (Foa & Kozak, 1986). According to this theory, individuals can experience fear as a result of the construction of a cognitive representation of an attitude object. This representation includes information about (1) the attitude object, (2) the

most adaptive response to the attitude object (e.g., escape), and (3) the reason for experiencing fear (e.g., the attitude object is dangerous). This information can induce fear and subsequently influence behavior without conscious awareness. If individuals implicitly associate police with fear (as opposed to safety), they might react to this implicit “danger” activation. In turn, this spontaneous reaction (e.g., running) could be construed by a police officer as threatening, an indication of guilt, etc. Because of these potential implications, the predictive validity of the implicit associations was assessed, specifically in relation to anticipated civilian behavior and police misconduct. The constructs of safety and good are the positive constructs that could be associated with police officers due to the duties of the job (i.e., to protect civilians), whereas the constructs of fear and bad are the negative constructs that could be implicitly associated with police due to the accounts of police brutality and misconduct.

The following introduction will first highlight how police have been portrayed in the media (both positively and negatively), as it is arguable that these representations influence attitudes toward police. Next, a comprehensive review of the current state of the literature on attitudes toward police will be provided. Finally, a case for the importance of studying implicit attitudes toward police (and using implicit attitude measures) will be made.

Police in the Media

Positive Representation of Police

Police officers have been historically represented on television in a positive light. Numerous televised police procedural dramas (e.g., Law & Order, Hawaii Five-O, NCIS, Blue Bloods) depict the lives of American police officers. Writers, producers, sponsors, etc., want their shows to succeed, and because the police are often central characters, they need to (1) be long-term protagonists and (2) be portrayed in a way that encourages repeat viewership (i.e., the

police need to be likable to some capacity). Thus, it is reasonable to expect the subscribers of these series (particularly civilians) to modify attitudes toward police and the justice system based on the overwhelmingly positive television portrayals.

Several researchers have attributed the manifestation of a positive police prototype to television exposure. Early work on this topic looked specifically at how police, criminals, the justice system, etc., were portrayed on television, and through content analysis techniques found that enforcers of the law (i.e., police) were portrayed as being “honest and law-abiding characters” (Dominick, 1973, p. 247). More recent empirical work has highlighted a relationship between increased crime drama viewership and positive attitudes toward police, specifically identifying police as avoiding misconduct/undue use of force and capable of lowering crime and (Donovan & Klahm, 2015). Unless an individual has a close relationship with a police officer, interactions with police very well could be limited. Because of this, it is reasonable to assume that individuals place increased weight on television-depictions of police when formulating impressions of police. This notion has been similarly shown in work on the CIS effect, wherein attitudes toward forensic science have been glorified by depictions on television programming (Schweitzer & Saks, 2007). In all, televised procedural dramas have consistently portrayed police in a positive light, which have influenced explicit perceptions of police.

Negative Representation of Police

There is also reason to believe that individuals living in the United States would harbor negative implicit attitudes toward American police officers. Aside from empirical work on the explicit attitudes toward police officers (summarized below), the presence of negative attitudes toward police and indications of negative implicit attitudes toward police in media outlets (e.g., social networking sites, online publication outlets, newspapers, television programming) are

overwhelming. The accessibility of the stories related to negative police-civilian interactions is increasing in a swiftly-changing culture, where individuals are encouraged and praised for spreading awareness regarding instances of social injustice on social media outlets (e.g., using hashtags to convey the social issue being addressed, such as #policebrutality, #police, #metoo for instances of sexual violence).

Focusing on written representations of these attitudes, there are numerous indicators of negative associations with police, with online article titles mirroring the sentiment that police officers instill fear and reduce feelings of safety among civilians. More explicitly, titles range from clear (e.g., “I Do Not Feel Safe Around Police”; Harris, 2016) to clarifying (e.g., “The Police Can’t Police Themselves. And Now the Public Is Too Scared to Cooperate with Them.”; Kendall, 2015), from broad to specific (e.g., “I am a Law-Abiding White Woman and I Fear the Police”; Taylor, 2017). Empirical work on this topic has identified news consumption as having a negative influence on beliefs of police legitimacy (Intravia, Wolff, & Piquero, 2018), likely due to increased exposure to coverage related to police brutality and misconduct. Interestingly, and counter to the previously discussed work on television depictions of police, Intravia et al. (2018) did not find crime show consumption to be a predictor of police legitimacy. Relatedly, attitudes toward police change (and become more negative) after publicizing high-profile accounts of police misconduct (Weitzer, 2002). Thus, there is a disconnect between the occupational role of police officers and how (at least some) people feel toward police officers. The continued discussion highlighting negative representations of police (e.g., accounts of police brutality) influences attitudes among media consumers.

Evaluative Conditioning through Media Representation

As previously reviewed, the media has represented police officers in two ways: in a positive light through police procedural television and in a negative light through news coverage and social networking site discussions. These dual depictions of police become increasingly important when one considers the role of evaluative conditioning (EC)—that is, an (often implicit) attitude development process that results from pairing an attitude object, in this case police officers, with valenced (positive or negative) stimuli (Jones, Olson, & Fazio, 2010; Staats & Staats, 1958; Zanna, Kiesler, & Pilkonis, 1970). When considering the positive representations of police in the media in relation to EC, one would expect consumers of this programming to pair police with a positive valence, both implicitly and explicitly, over time. On the other hand, when considering the negative representations of police in the media in relation to EC, one would expect consumers of the news outlets, social networking sites, etc., to pair police with a negative valence, both implicitly and explicitly, over time. Importantly, it is a reasonable expectation that consumers of one type of media would also be consumers of (or at least exposed to) the other type. This divide requires further consideration regarding the relative influence of both representations.

There are two primary reasons for the expectation that the negative representations have a stronger influence on attitudes toward police compared to the positive representations. First, negative experiences have been found to be more influential than positive experiences (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Rozin & Royzman, 2001; Skowronski & Carlston, 1989). This trend has been replicated regarding police-related experiences—that is, negative experiences with police have been found to have a greater impact on perceptions of police than positive experiences (Skogan, 2006). Concerning media representations of police,

experimental research exists (albeit in the form of a recently completed doctoral dissertation) indicating that negative media portrayals of police are more influential on explicit attitudes toward police than positive media portrayals (Choi, 2018). Second, there is an important confound between the prominent positive portrayals (police procedural dramas) and prominent negative portrayals (e.g., news coverage, discussions on social networking sites)—that is, that the positive portrayals are fiction and the negative portrayals are nonfiction. Research on perceived reality of television programming as a moderator of the influence of television viewership (i.e., the cultivation hypothesis) found a positive relationship—such that, people who perceived the television programming to be more real were more likely to perceive the programming as a reflection of reality (Potter, 1986). Furthermore, a review of the literature assessing the impact of genre-specific television concluded different genres (e.g., news, entertainment) have varying effects on viewer perceptions (Record, 2018). Thus, there is reason to believe that positive portrayal of police, mainly depicted through fictional television entertainment programming, will be less influential with regard to attitude formation than negative portrayal of police, primarily depicted through television news programming, social media discussion, etc.

Explicit Attitudes

Explicit Attitudes and Police

Researchers investigating civilian attitudes toward police officers have utilized explicit measures, or measures that assess conscious attitudes (e.g., self-report measures). Various elements of civilian attitudes toward police officers have been examined, including the impact of individual difference variables (e.g., demographic information) and prior police-civilian interaction on evaluations of police (Bates, Antrobus, Bennett, & Martin, 2015; Brandl, Frank,

Worden, & Bynum, 1994; Cheurprakobkit, 2006; Lai & Zhao, 2010; Rosenbaum, Schuck, Costello, Hawkins, & Ring, 2005). Research investigating explicit feelings of fear toward police officers suggest a racial disparity, such that Black civilians report being more fearful of police than White civilians (Schuck, Rosenbaum, & Hawkins, 2008). Similarly, an investigation of racial disparity in general attitudes toward police found Black civilians to harbor more negative attitudes than White and Hispanic civilians (Nadal, Davidoff, Allicock, Serpe, & Erazo, 2017). These empirical findings are in line with the non-empirical written expressions of such negative sentiments. For example, Dyson (2017) writes in his article, “America’s Blue Wall of Terror”, of a time where he had been racially profiled by a police officer. In his discussion, he notes:

We [Black individuals] learn to modify our speech in the face of cops. We temper our passion and modulate our tone so that we barely register as being there. If you’re old enough, and your birth certificate says “Negro” like mine does—from the early 1900s to the early 1980s all African American birth certificates labeled us as such—you’ll know it’s the same way we were taught to speak to white folk in the south. You make sure to lower your eyes, say yes sir, no smart mouthing, no anger, no resentment, just complete, total compliance. Ever had to endure that humiliation, my friends? We must believe that cops are gods; we are nothing. And the more we remember our nothingness, become experts in the philosophy of nothingness, the better chance we have to survive. Does any of this sound familiar to you? It is our routine, our daily ritual of survival. (para. 5)

Black civilians in particular experience declines in positive attitudes toward police after publicized instances of police brutality, whereas non-Black civilians do not (Kochel, 2017a). In fact, several online databases have been developed in the recent years to specifically track

instances of police brutality (e.g., Mapping Police Violence, 2018), some of which are explicitly designed to look at racial differences in such accounts (e.g., The Washington Post, 2018).

Whereas general explicit attitudes toward police may be influenced by civilian race, more specific attitudes toward police (e.g., trust in police department accountability) do not reveal racial differences (Lai & Zhao, 2010); thus, individual differences in attitudes toward police are likely to differ based on the specific attitude assessed (e.g., trust in police, willingness to cooperate with police). Recent research indicates that exposure to increased police presence decreases feelings of safety in communities that are characterized as being “safe,” especially among men, indicating that racial disparities in attitudes toward police may be moderated by other factors, such as police exposure, socioeconomic status, and gender (van de Veer, de Lange, van der Haar, & Karremans, 2012). The studies utilizing explicit measures have been effective in revealing the distinct overt attitudes that civilians have toward police officers, mostly indicating that explicit attitudes toward police are moderated by several individual difference variables, including race, age, neighborhood, and prior contact with police (for a review see Brown & Benedict, 2002).

Explicit Attitudes and Behavioral Implications

Explicit measures have been utilized to assess civilian behavioral intentions in the presence of police officers. Interestingly and somewhat counter to Dyson’s (2017) statement of compliance, researchers have established racial differences regarding intentions to cooperate with police, such that Black individuals report less anticipated cooperation than White individuals, and this racial disparity is moderated by previous unpleasant experience with police officers (Viki, Culmer, Eller, & Abrams, 2006). Trust in police officers has also been found to predict civilian willingness to cooperate (Murphy, Mazerolle, & Bennet, 2014). Unpleasant

experiences with police officers facilitate a lack of trust among civilians, ultimately leading to a reduced anticipation of cooperation. Several studies have focused on procedural justice (e.g., being fair) as a predictor of willingness to cooperate, and indicate that perceptions of procedural injustice (e.g., police brutality or misconduct) reduce willingness to cooperate with police (e.g., Sargeant & Kochel, 2018). However, perceptions of procedural justice have negative consequences for minority group members who perceive the law as illegitimate and are disengaged from law enforcement (e.g., *I don't really know what the police expect of me and I'm not about to ask*), resulting in reduced anticipated cooperation with police (Murphy & Cherney, 2012). This finding provides a possible explanation for why Black individuals would comply with police in an interpersonal interaction (as Dyson suggests) but have less anticipation of cooperating with police in the future. In all, it is plausible to assume that individuals who more readily recognize accounts of injustice and discrimination (e.g., those with more liberal ideologies) would also report less anticipated cooperation with police.

While explicit measures have provided a greater understanding of anticipated civilian behaviors regarding police officers (specifically cooperation), implicit measures will provide further insight into how positivity and negativity (e.g., good/safety and bad/fear) may manifest at the unconscious level. This knowledge can then be applied to research assessing civilian behavioral intentions and anticipated officer behavior during police-civilian interactions. There are various limitations to relying solely on explicit measures. Increased vulnerability to the social desirability bias is often noted as a criticism of explicit measures. This is of concern because experiencing the bias might motivate individuals to falsify responses (e.g., Morgenson et al., 2007). Furthermore, implicit attitudes can provide information not readily available through investigation of explicit attitudes, and consequently can predict different outcomes, making them

a meaningful unit of analysis (e.g., Bing, LeBreton, Davison, Migetz, & James, 2007; Johnson & Steinman, 2009; Haines & Sumner, 2006).

Implicit Attitudes

Implicit Attitudes and Police

To date, there is a lack of published research investigating civilian perceptions of police officers using implicit measures—that is, there are no known peer-reviewed publications assessing implicit attitudes toward police officers. Thus, any hypotheses regarding implicit attitudes toward police officers must be informed by (1) the literature on explicit attitudes toward police, (2) the occupational role of police, and (3) the media representations of police officers (e.g., television programming, written statements, spreading of videos of police-civilian encounters on social networking sites, development of activist groups). However, implicit associations with different social groups among police officers have been assessed, and most of these investigations have focused on racial biases and the shooter bias (e.g., Correll, Hudson, Guillermo, & Ma, 2014; Correll, Park, Judd, & Wittenbrink, 2002; Eberhardt, Goff, Purdie, & Davies, 2004; Fridell & Lim, 2016; Peruche & Plant, 2006; Plant & Peruche, 2005). Assessment of implicit biases in relation to policing behavior has led to various intervention initiatives, including additional training of officers and the use of advanced technologies (e.g., body cams), to improve police-civilian relations (Spencer, Charbonneau, & Glaser, 2016). While the investigation of implicit associations and subsequent behavior among police officers is important, it is necessary to acknowledge that interactions between police officers and civilians are dyadic. Therefore, civilian implicit associations with police officers and subsequent behavior among civilians is an equally important area of research that requires investigation.

Like the intervention initiatives that arose from research investigating implicit associations among police officers, research investigating implicit associations among civilians could also result in intervention initiatives on the state's behalf. The knowledge to be gained from this research will allow for tailoring of police training programs to address specific implicit associations present in communities. For example, some demographic populations (e.g., groups with lower socioeconomic status, males, racial minorities) may have stronger negative (i.e., fear/bad as opposed to safety/good) implicit associations with police officers. Once these distinctions are determined, interventions can be tailored to focus on the police procedures in those communities at risk. Meanwhile, steps can be taken to maintain cooperative police-civilian relations in communities that have strong positive (i.e., safety/good as opposed to fear/bad) implicit associations with police officers, as the overall goal of this line of research is to improve and/or maintain positive police-civilian relations. Investigating implicit associations with police officers among civilians will provide a better understanding of where police-civilian relations may be strained and can help guide intervention programs in addressing those issues.

Implicit Attitudes and Behavioral Implications

Several lines of research have demonstrated the importance of measuring implicit attitudes. Implicit attitudes have been associated with behavior, and these behavioral reactions can manifest outside of one's awareness (e.g., job discrimination, nonverbal behavior, aggression). One measure of implicit attitudes, the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) has been found to have better predictive validity than explicit attitude measures when assessing socially sensitive topics, such as interracial and intergroup attitudes and behavior (Greenwald, Banaji, Nosek, 2015; Greenwald, Poehlman, Uhlmann, & Banaji, 2009; for a criticism of this argument see Oswald, Mitchell, Blanton, Jaccard, & Tetlock,

2015). Implications of implicit biases can be seen in several studies exhibiting the shooter bias, a demonstration where civilians and police officers wrongly shoot unarmed Black targets more often than White targets due to their implicit racial biases (e.g., Correll et al., 2007; Plant & Peruche, 2005). Additional research on the shooter bias has found that the bias is influenced by threat construct activation (Miller, Zielaskowski, & Plant, 2012). These findings indicate that the induction of threat magnifies the shooter bias toward novel, previously unthreatening groups, as well as groups that are culturally associated with threat. A recent study assessing police brutality found that community racial biases were predictive of disproportionate lethal force by police toward Black civilians (Herman et al., 2018). With the current police-civilian climate, it is possible that the widespread discussion of police brutality and misconduct, and the research regarding it, has induced implicit threat associations with police among civilians.

Implications of negative biases are often addressed in research focusing on discriminatory behavior toward stigmatized groups (e.g., minorities, individuals who are overweight, people with disabilities). Numerous researchers have assessed implicit racial biases and interracial behavior, revealing that those with stronger negative implicit racial biases have more negative interactions with Black confederates (e.g., Amodio & Devine, 2006; McConnell & Leibold, 2001). Those with more negative implicit racial biases tend to smile less, make fewer social comments, sit further away, etc., when interacting with a Black confederate compared to those with less negative biases. When assessing the relation between implicit attitudes and past negative behavior, findings suggest that negative implicit attitudes toward Black people are associated with previous verbal discrimination (e.g., offensive jokes and comments; Rudman & Ashmore, 2007). Negative implicit attitudes toward Jewish and Asian

people have also been assessed and have been associated with economic discrimination (i.e., support for cutting funding for the social group; Rudman & Ashmore, 2007).

Moving beyond controlled behaviors, implicit associations have been found to be predictive of automatic/impulsive behaviors (i.e., quickly expressed behavior without implementing self-control or deliberate thought). For example, implicit attitudes toward the self have been found to predict spontaneous negative affect in everyday life (Conner & Barrett, 2005). In a study assessing implicit attitudes toward individuals with Acquired Immune Deficiency Syndrome (AIDS), results revealed implicit attitudes to be associated with automatic approach and avoidance behavior (Neumann, Hülsebeck, & Seibt, 2004). People with negative implicit attitudes toward people with AIDS showed more automatic avoidant behavior (i.e., pushing a computer mouse away from themselves when primed with a person with AIDS) than people with weaker negative implicit associations. Thus, there are various ways in which implicit attitudes can affect behavior.

Many of the nonverbal behaviors that arise from implicit biases may be outside a person's awareness. Once the current climate of implicit associations with police officers is exposed, the field can move forward in using this information to predict future police-civilian interactions, inform police departments about the possible implications of implicit associations that may be present in their communities (e.g., some civilians might experience implicit fear activation, leading them to act impulsively in the presence of anticipated danger), and advise intervention programs striving to address any implicit associations that may exist among civilians through detailed exploration of policing procedures, police-civilian interactions, etc.

Measures of Implicit Attitudes

The studies described in this paper utilize two measures designed to assess implicit associations toward an attitude object (i.e., police officers). There are several benefits that come from utilizing implicit measures to investigate attitudes toward and associations with social groups (for a review of implicit measures, see De Houwer, Teige-Mocigemba, Spruyt, & Moors, 2009; Wittenbrink & Schwarz, 2007). During a study, participants may be hyperaware of how they are perceived by others, including experimenters. This concern facilitates the social desirability bias, which ultimately results in response falsification (e.g., Morgenson et al., 2007). The use of implicit measures counteracts the impact of the social desirability bias. Additionally, some mental content may operate outside of conscious awareness and using implicit measures helps to reveal the unconscious associations (e.g., Barsade, Ramarajan, & Westen, 2009; Johnson & Tan, 2009).

Of the measures that have been created to gauge implicit attitudes toward social groups, two have been widely utilized and acknowledged—the Word Fragment Completion Task (e.g., Johnson & Lord, 2010; Vargas, Sekaquaptewa, & von Hippel, 2007) and the IAT (Greenwald et al., 1998). The Word Fragment Completion Task calls for participants to complete word fragments after being primed to think of relevant constructs/groups (e.g., images of police officers or civilians), and the completions indicate which cognitive constructs are accessible to the participant. For example, if a word fragment could be completed as “safety” or “surety,” a researcher might first prime the participant with an image of either a civilian or police officer, then provide the participant with the fragment to complete, and note which completion occurred more often depending on the prime. If “safety” was completed more often in the police condition than the civilian condition, it could be argued that the construct of safety was implicitly

activated when primed with police. The IAT measures implicit associations by evaluating response times to accurately categorize various stimuli (e.g., images of police officers or civilians and words associated with safety and fear constructs; for a review of the IAT see Nosek, Greenwald, & Banaji, 2007; for a review of the criticisms of the IAT see Fiedler, Messner, & Bluemke, 2006; for a review of two opposing meta-analyses on the predictive validity of the IAT (i.e., Greenwald et al., 2009; Oswald, Mitchell, Blanton, Jaccard, & Tetlock, 2013) see Greenwald et al., 2015). Shorter response latencies to correctly categorize two constructs indicate a stronger implicit link. For example, if it is easier for a participant to quickly categorize police and safety as opposed to police and fear, it would be argued that police and safety have a stronger implicit link. Detailed explanations of the modified Word Fragment Completion Task (used in the previous studies) and the IAT (used in the current study) are provided in the following method sections.

The current manuscript operationally defines implicit attitudes in two ways. Two preliminary studies (noted as previous studies in this manuscript) defined implicit attitudes as increased construct accessibility using a modified version of the Word Fragment Completion Task (e.g., Johnson & Lord, 2010; Vargas et al., 2007; preliminary results presented in Sargent & Newman, 2018; results presented below). A third study (noted as the current study in this manuscript) defined implicit attitudes as unconscious associations using several modified versions of the IAT (Greenwald et al., 1998). Regardless of definition and measurement, patterns in implicit attitudes were expected to vary based on several individual difference variables (e.g., race, gender, socioeconomic status, political affiliation). Of particular interest were racial differences (specifically assessed in the second previous study and addressed in the current study) and political affiliation differences (assessed in the second previous study and

current study) in implicit attitudes. Police brutality has been linked to a disproportionate targeting of racial minorities, specifically Black individuals (Herman, Flake, & Calanchini, 2018), and awareness of this issue has led to the development of various activist groups (e.g., Black Lives Matter, COPWATCH, the American Civil Liberties Union's project on improving police practice, the National Police Accountability Project). Furthermore, these types of activist movements have been found to be associated with more liberal ideologies (Janoff-Bulman, 2009; Janoff-Bulman, Sheikh, & Baldacci, 2008).

Previous Studies

This line of research was the first to assess civilian implicit attitudes towards police officers. The two previous studies conducted provided a primarily exploratory basis for the development of the current study. The previous studies combined with the current study will provide a foundation for future research assessing the implications of positive (i.e., safety/good) and negative (i.e., fear/bad) implicit attitudes (e.g., anticipated behavioral responses to interactions with police), and will highlight the importance of various individual difference variables (e.g., race, socioeconomic status, political affiliation) in the development of implicit biases toward a specific social group, police officers.

In the first study, a modified Word Fragment Completion Task (e.g., Johnson & Lord, 2010) was created and administered to investigate implicit safety and fear construct activation among a college student population. In the second study, the same Word Fragment Completion Task was administered using an online recruitment system (Amazon's Mechanical Turk Prime) to compare implicit associations with police officers among White and Black civilians located in the United States.

Study 1: Implicit Construct Activation

In Study 1, a measure was created to assess the implicit activation of safety and fear constructs when participants were primed with images of either police officers or civilians. Due to the increase in alleged accounts of police brutality, as well as the increase in attention to civilian fatalities resulting from police encounters (Kindy et al., 2016; Quah & Davis, 2015), it was hypothesized that participants primed with images of police officers (as opposed to images of civilians) would experience more fear and less safety construct activation. Study 1 served mainly an exploratory purpose.

Method

Participants & Design Overview

The participants ($N = 209$; 112 women, 97 men) in Study 1 were college undergraduate students ranging in age from 18 to 52 years old ($M = 19.12$, $SD = 2.93$). A priori power calculations suggested that 210 participants would provide sufficient power (power = .95) to detect effects of a moderate size (effect size $f = .25$) using a two-way analysis of variance. The sample consisted of mostly White or European American participants ($n = 137$; 65.55%), followed by Asian ($n = 32$; 15.31%), Black or African American ($n = 19$; 9.09%), Hispanic or Latino ($n = 9$; 1.91%), multi-racial or mixed ($n = 9$; 1.91%), American Indian or Alaska Native ($n = 1$; 0.48%), other ($n = 1$; 0.48%), and those who preferred not to answer ($n = 1$; 0.48%). Additional individual difference variables were measured (e.g., socioeconomic status, relationships with police, previous unpleasant experience with police). In all analyses, excluding participants with at least one close relationship with a police officer ($n = 85$) led to either similar findings or reduced significance due to decreased power.

Procedure

Participants were recruited through the online SONA system to participate in a study titled “Cognitive Task Completion.” Participants voluntarily signed up for a study timeslot and reported to the lab during the time of their session. Participants were informed that the study would be assessing the impact of individual differences on the completion of certain cognitive tasks. When entering the lab, participants were directed to a computer where they read the informed consent and provided consent to participate in the study. After consent was provided, participants began by answering a questionnaire assessing their personality; however, this information was not related to any of the research questions for the study and was included only to uphold the impression that the study aimed to assess individual differences (e.g., personality) and the ability to complete cognitive tasks. Participants then completed a series of math computation problems (each displayed for 30 seconds), where every problem was preceded by an image prime of a White female civilian (displayed for one second). These math computation problems and White female civilian primes were used as a distraction from the main dependent variable of the study, the Word Fragment Completion Task, which followed the math computation problem measure.

Study 1 consisted of a 2 (prime: police or civilian) X 2 (construct: safety or fear) experimental design, where participants were randomly assigned to one of four conditions. Participants viewed images of police officers or civilians for one second and attempted to complete word fragments potentially relating to either safety or fear within 30 seconds. Therefore, the four conditions were *police/safety* ($n = 53$), *civilian/safety* ($n = 54$), *police/fear* ($n = 50$), and *civilian/fear* ($n = 52$). After the Word Fragment Completion Task, participants answered questions assessing their explicit attitudes toward police officers, relationships with

police officers, experiences with police officers, and several demographic questions, including race and gender. Participants were then debriefed, thanked for their participation, and provided compensation through course credit (as designated by the standards of the online SONA system).

Measures

Personality measure. Personality characteristics were assessed using the Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003). Participants indicated the extent to which 10 pairs of traits (e.g., *extraverted*, *enthusiastic*) apply to them on a 7-point scale (1 = *Disagree Strongly*; 7 = *Agree Strongly*). See Appendix A for the complete set of items.

Math computation problems. Participants completed ten math computation problems as a distraction from the main dependent variable, the Word Fragment Completion Task. Participants were primed with an image of a White female civilian that appeared before each math computation problem for one second. White female civilian primes (as opposed to non-White or male primes) were utilized to reduce suspicion about the primary objectives of the study (e.g., participants could have thought that the study focused on female versus male primes instead of civilian versus police primes). The participant then had 30 seconds to complete the math computation problem (e.g., $5 + 4(X) = 13$). See Appendix B for the complete set of primes and math computation problems.

Implicit attitude measure. Participants completed a version of the Word Fragment Completion Task (e.g., Johnson & Lord, 2010; Vargas et al., 2007) that had been modified to assess implicit safety and fear construct activation when participants were primed with images of either White male police officers or civilians. Creation of the Word Fragment Completion Task followed the guidelines outlined by Koopman, Howe, Johnson, Tan, and Chang (2013). In the process of creating the task, words relating to the constructs of safety and fear were compiled

from the sample population (i.e., college students); students were asked to provide words that were closely related to safety or fear, and the seven most frequently reported words were used for the task. Although Koopman et al. (2013) recommended 12-15 words per construct, the study design required additional “filler” words, making the burden on participants too high. Previous studies indicated using between five (Son Hing, Li, & Zanna, 2002) and 25 (Johnson & Lord, 2010) words per construct to be sufficient; therefore, seven words per construct were chosen. Only six words were frequently reported as relating to safety, so “safety” was used as the seventh word representing the construct. These word fragments were then pretested twice among the sample population (i.e., college students), and word fragments on the final list were completed as the target word rather than as a different word (e.g., the fragment “S _ _ E T Y” completed as “S A F E T Y” rather than “S U R E T Y”) without priming between 25-75% of the time, which is the recommended completion range.

In the Word Fragment Completion Task for this study, an image of either a White male police officer or civilian appeared before each word fragment for one second. White male police officer or civilian primes (as opposed to non-White or female primes) were used because the stereotypical police officer is a White male (this notion was later tested as discussed below; Guzman & Sargent, 2018), and most police officers in the United States were White males as of 2016 (United States Census Bureau, 2016). As this was an initial, mainly exploratory, study in this line of research, the stereotypical police officer was considered an appropriate prime. Furthermore, although there are potential implications of only using White men as police primes (e.g., generalizability issues), it was reasoned that addressing police race as a moderator of implicit attitudes is an additional empirical question which would be better assessed in future research on this topic. A photoshoot was conducted to obtain the image primes, where

individuals took pictures in a police uniform (police officer prime) and in a grey short sleeve shirt (civilian prime). Thus, the police and civilian primes were images of the same individuals in different clothing. After the prime was presented, the participant had 30 seconds to complete the word fragment. Each participant completed a total of 21 word fragments (one fragment after each prime). Participants were randomly assigned to either a safety or fear condition, in which seven of the fragments could be completed in a way that represented the safety or fear target construct, and the remaining 14 “filler” fragments could not be completed in a way that represented the target construct. For example, if the participant were assigned to the *police/safety* condition, the participant might have been primed with an image of a police officer for one second, and then provided 30 seconds to complete the word fragment “S E _ U _ _.” If the construct of safety was activated by the police officer prime, the participant would be more likely to complete the word fragment as “S E C U R E” rather than another possible completion, such as “S E D U C E”. Each word fragment was coded as a *hit* when the completion matched the target construct, and a *miss* when the completion did not match the target construct. The total number of *hits* was used to operationally define strength of construct activation (i.e., more *hits* indicated stronger construct activation). See Appendix C for the complete set of primes and word fragments.

Explicit attitude measure. Explicit attitudes toward police were assessed using the Perceptions of Police Scale (POPS; Nadal & Davidoff, 2015). Participants indicated the extent to which they agree with twelve statements (e.g., *police officers are friendly*) on a 5-point scale (1 = *I Strongly Disagree*; 5 = *I Strongly Agree*). Responses on each item were averaged to get an overall explicit attitude toward police score, where higher scores indicate more positive views of

police officers. Composite averages for the two subscales of the POPS (i.e., general attitudes and unbiased attitudes) were also created. See Appendix D for the complete set of items.

Relationship with police measure. The presence of close relationships with police was assessed through three items. These items assessed the number of close relationships (i.e., how many close relationships with police the participant has), the type of close relationship (e.g., friend, family), and how close the participant considers these close relationships to be on a 5-point scale (1 = *Not Close At All*; 5 = *Very Close*). See Appendix E for the complete set of items.

Experience with police measure. The presence of previous unpleasant encounters with police was assessed through two items. These items assessed the number of unpleasant encounters (i.e., how many unpleasant encounters the participant has had with a police officer), and how unpleasant the participant considers those encounters to be on a 5-point scale (1 = *Not Unpleasant At All*; 5 = *Very Unpleasant*). See Appendix F for the complete set of items.

Demographic questionnaire. Demographic information was assessed at the end of the study. These questions gathered information pertaining to gender/sex, age, year in college, academic major, racial/ethnic group identification, where the participant was born, how many years the participant had lived in the United States, if English was the participant's first language, English fluency, childhood neighborhood, subjective social class (Adler, Epel, Castellazzo, Ickovics, 2000), and objective social class. See Appendices G, H, and I for the complete set of items.

Results

Primary Analysis

Study 1 consisted of a 2 (prime: police or civilian) X 2 (construct: safety or fear) experimental design, where participants were randomly assigned to one of four conditions.

There were non-significant main effects for the prime type (police or civilian), $t(206) = 0.40, p = .691$, and the construct type (safety or fear), $t(206) = 1.34, p = .182$, on construct activation (i.e., total *hit* rate) when controlling for each variable. However, the interaction effect was significant, $t(205) = -2.87, p = .005$, and in a direction opposite to that of the original hypothesis which anticipated increased fear construct activation and decreased safety construct activation when primed with police (see Table 1 and Figure 1). Post-hoc analyses were conducted to further assess the simple effects. There was a significant simple effect of prime in the safety condition, $t(205) = -2.29, p = .023$, such that police primes produced more safety word fragment completions ($M = 2.43, SD = 1.31$) than civilian primes ($M = 1.91, SD = 1.00$). There was a marginally significant simple effect of prime in the fear condition, $t(205) = -1.77, p = .079$, such that police primes produced less fear word fragment completions ($M = 2.18, SD = 1.32$) than civilian primes ($M = 2.60, SD = 1.11$). Thus, this interaction indicated that the construct activation of safety was greater in the police condition than in the civilian condition, and the construct activation of fear was marginally greater in the civilian condition than the police condition.^{1,2}

¹ There was a significant simple effect of word in the civilian condition, $t(205) = -2.98, p = .003$, such that fear word fragments were completed more than safety word fragments when primed with civilians. There was a non-significant simple effect of word in the police condition, $t(205) = 1.08, p = .280$, such that fear word fragment and safety word fragment completion rates did not significantly differ when primed with police.

² Regarding the close relationships with police variables, the interaction between prime type and construct type became non-significant ($p = .138$) when excluding individuals with at least one close relationship with police ($n = 85$). Participants with close relationships have unique experiences with police in that they (presumably) view police officers as a people first (e.g., father, mother, sibling, friend) and not primarily by their occupational role. When excluding participants without close relationships ($n = 124$), the interaction remained significant ($p = .008$). There was no main effect for quantity of close relationships with police when controlling for prime type and construct type ($p = .852$), nor were there any significant two-way or three-way interactions involving prime type, construct type, and/or quantity of close relationships on construct activation (all $p > .124$). There was no main effect for how close the relationships were perceived to be among those who did have close relationships with police when controlling for prime type and construct type ($p = .356$), nor were there two-way interactions between perception of closeness and prime type or construct type (both $p > .179$). The three-way interaction between prime type, construct type, and perception of closeness was significant, $t(77) = -2.025, p = .046$. This three-way interaction indicated that increased closeness with police reduces fear construct activation when primed with police, whereas safety construct activation remains relatively stable.

Secondary Analyses

Post-hoc analyses of three-way interactions between the prime type (police or civilian), construct type (safety or fear), and gender, race (comparing those who identified as being White and those who did not identify as being White), and socioeconomic status did not reveal significant differences, all $p > .086$, all $p > .358$, and all $p > .071$, respectively. Whereas the study was sufficiently powered to look at gender differences and adequately powered to assess socioeconomic status differences, the study was not powered to effectively assess racial differences as most of the sample identified as White or European American (65.55%). Additionally, the implicit measure (i.e., Word Fragment Completion Task) may not have been the most robust measure to assess implicit attitudes and effectively measure individual differences; thus, the data for gender differences and socioeconomic differences were plotted to observe possible, albeit insignificant, patterns, which would then be used to inform confirmatory hypotheses in future studies (see Figure 2 for gender differences and Figures 3 and 4 for socioeconomic status differences in fear and safety construct activation, respectively).

Implicit Attitudes and Explicit Attitudes

Explicit attitudes toward police were measured using the POPS (Nadal & Davidoff, 2015). A principal components analysis was conducted on the scale fitting two factors (police general and police unbiased subscales) with varimax rotation. The analysis resulted in two factors (i.e., two eigenvalues were greater than 1), which explained 73.1% of the variance for the scale items. When reviewing the factor loadings per item, the items loaded onto the correct factors as indicated in Nadal and Davidoff (2015). Composite scores were made by averaging all items ($\alpha = .94$) as well as averaging the items belonging to the police general subscale ($\alpha = .94$) and police unbiased subscale ($\alpha = .89$). The implicit attitude measure (i.e., number of correctly

completed safety and fear word fragments after police priming) did not significantly correlate with any of the explicit composite scores (see Table 2 and Table 3).

Conclusion

Participants indicated more implicit safety construct activation and less implicit fear construct activation when primed with police. These findings were counter to the original hypothesis, that participants would experience increased fear construct activation and decreased safety construct activation when primed with police. Furthermore, the implicit and explicit attitude measures did not significantly correlate. The lack of convergent validity between the implicit and explicit attitude measures is noteworthy, as at least a weak correlation was theoretically expected.

Although the analyses were not significant, visual interpretation of the plotted data identified gender and socioeconomic status as two variables that should be further investigated. Regarding gender, it appeared that women have stronger decreases in fear construct activation than men and relatively similar increases in safety construct activation when primed with police (as opposed to civilians). Previous research on explicit attitudes toward police revealed gender differences in feelings of safety, such that men feel less safe when police presence is increased than women (van de Veer et al., 2012). The previous research on gender differences coupled with the visually observed patterns in implicit construct activation, though non-significant, collectively imply that women might have more positive implicit associations with police than men.

Regarding socioeconomic status, analyses involving this variable were not significant; however, the data were plotted, and visually observed patterns indicated that those with a lower socioeconomic status experienced less fear construct activation than those with a higher

socioeconomic status when primed with police (as opposed to civilians), and safety construct activation remained stable across socioeconomic status. Research on explicit attitudes toward police endorse this pattern, such that increased police presence in safe environments were found to reduce feelings of safety (van de Veer et al., 2012). Thus, if lower socioeconomic communities are characterized as unsafe and higher socioeconomic communities are characterized as safe, individuals with lower socioeconomic status should experience decreased fear construct activation and individuals with higher socioeconomic status should experience increased fear construct activation when primed with police. Although the trends support this notion, it is also plausible to expect the opposite pattern—that is, individuals living in communities characterized as unsafe would be expected to have more (possibly unpleasant) interactions with police and to witness and/or experience more procedural injustice, racial profiling, etc.

Study 2: Implicit Construct Activation and the Assessment of Civilian Racial Differences

Study 2 sought to replicate the findings from Study 1, but with a more heterogeneous and racially diverse sample. The study was administered using an online recruitment system, Amazon's Mechanical Turk Prime, and an online survey platform, Qualtrics. The study was limited to White ($n = 205$) and Black ($n = 207$) participants. Based on the findings from Study 1, it was predicted that in Study 2 participants primed with images of police officers (as opposed to images of civilians) would experience more safety and less fear construct activation, and that this association would be moderated by various individual difference variables.

Prior research has indicated racial differences in perceptions of police. Therefore, it was hypothesized that Black participants (versus White participants) would experience more fear than safety construct activation when primed with police officers. It was also hypothesized that

people with more liberal (versus conservative) ideologies would experience more fear than safety construct activation when primed with images of police officers. Previous research has indicated that conservatism is concerned with social regulation through keeping social order and avoiding negative outcomes, possibly leading to more favorable attitudes toward regulation by police, whereas liberalism is concerned with social regulation through promotion of social justice and activism, possibly leading to increased acknowledgment of issues regarding police regulation as displayed by increased societal attention to police brutality and misconduct (Janoff-Bulman, 2009; Janoff-Bulman et al., 2008).

The first previous study was not intentionally powered to assess individual differences and demographic disparities; thus, it is reasonable to consider previous research identifying individual differences in explicit attitudes toward police along with the non-significant patterns in implicit attitudes toward police that were observed through plotting of the data. For these reasons, gender and socioeconomic differences were worthwhile variables to further assess with a more heterogeneous sample. Additional exploratory analyses were conducted on various other individual difference variables in relation to implicit attitudes toward police officers.

Method

Participants & Design Overview

Four-hundred and seventy eligible participants completed the study. Because the study was administered online rather than in-person, measures were taken to exclude participants who may not have been cognitively devoted to the task (i.e., did not complete the implicit measure or took significantly longer to complete the study). The total number of failed attempts (i.e., blank responses or “?”) at the Word Fragment Completion task were measured ($M = 0.33$, $SD = 0.73$), and those who were two standard deviations above the mean (i.e., more than two failed attempts)

were removed from further analyses ($n = 38$). Duration (in seconds) was also recorded ($M = 841.55$, $SD = 414.11$), and those who were two standard deviations above the mean (i.e., longer than 1669.78 seconds) were removed from further analyses ($n = 23$). Three participants were marked as outliers on both criteria. There were no participants two standard deviations below the mean for non-attempts or duration; therefore, all participants below the mean for both variables were retained for analyses. The final sample consisted of 412 workers on Amazon's Mechanical Turk Prime, where most of the participants were female ($n = 235$; 57.04%) and Black ($n = 207$; 50.24%) with ages ranging from 19 to 70 years ($M = 36.46$, $SD = 10.80$).³

The interaction effect size f for the 2 (prime: police or civilian) X 2 (construct: safety or fear) experimental design in Study 1 was .18.⁴ Because Study 2 was implemented online, it was important to be conservative regarding the anticipated effect size. A small effect size is considered to be .1; however, the effect size from the first study was comfortably larger than that. Thus, an effect size estimate midway between the two was used and an a priori power calculation suggested that 403 participants would provide sufficient power (power = .8) to detect effects of the size that could reasonably be expected (effect Size $f = .14$) using a two-way analysis of variance. Restrictions on participation included being 18 years of age or older, located in the United States, and identifying as either White or Black. Participants completed the

³ As opposed to Study 1, which was conducted in-lab, Study 2 was conducted online. To be conservative, exclusion criteria were used to ensure the engagement with the study could be directly ascertained. Although previous research has demonstrated the ability of online recruitment methods to produce valid data, especially on self-report measures (e.g., Shawver et al., 2016), this research required intensive attention to the primary task of interest. In comparing in-lab and online experimental methodologies, Dandurand, Shultz, and Onishi (2008) found online participants to be less accurate in completing the tasks and to have higher dropout rates than in-lab participants, although patterns of results were nonetheless replicated. Additionally, Ramsey, Thompson, McKenzie, and Rosenbaum (2016) indicated that online participants were more likely to read instructions than in-lab participants but cautioned researchers to be weary of administering tasks that require non-intuitive instructions. Thus, to be cautionary and conservative, participants two standard deviations above the mean on both criteria (i.e., failed attempts and duration) were excluded from analyses. Nonetheless, in all analyses excluding participants three standard deviations above the mean on both criteria led to similar findings.

⁴ The effect size calculation for the main interaction in Study 1 was originally calculated using adjusted R squared values, as opposed to R squared values. Thus, the effect size was underestimated for the a priori power analysis in study 2—that is, the incorrect effect size ($f = .18$) was used as a reference as opposed to the correct effect size ($f = .20$; $\eta_p^2 = .039$).

Word Fragment Completion Task presented in Study 1 and reported on their relationships and previous experience with police officers. Individual difference variables including race/ethnicity, gender, age, place of birth, type of childhood neighborhood, family income, and political affiliation were measured. In all analyses, excluding participants with at least one close relationship with a police officer ($n = 92$ when including two individuals who did not respond to the item) led to similar findings.

Procedure

Participants were recruited through Amazon's Mechanical Turk Prime online recruitment system to participate in a study titled "Word Puzzles." Participants voluntarily signed up to participate in the study and were compensated \$1.00 at the completion of the study. Turk Prime was utilized because this platform allows for eligibility restrictions based on race. Thus, individuals would be presented with the study information if they had identified in prescreening questions as being 18 years of age or older, located in the United States, and self-identified as either Black or African American or White or European American. While the online system identifies individuals as being eligible for the study without their awareness, the eligibility requirements were also provided in the recruitment script under the study description. Upon signing up, participants received a link to the online study. When accessing the study webpage, participants read the informed consent, and provided consent to participate in the study. The remainder of the study procedure and materials were identical to those used in the first previous study. Study 2 consisted of the same 2 (prime: police or civilian) X 2 (construct: safety or fear) experimental design, where participants were randomly assigned to one of four conditions. Participants viewed images of White male police officers or civilians for one second and completed word fragments assessing construct activation of either safety or fear. Therefore, the

four conditions were *police/safety* ($n = 91$), *civilian/safety* ($n = 102$), *police/fear* ($n = 108$), and *civilian/fear* ($n = 111$). Following the study participants were debriefed, thanked for their participation, and provided with \$1.00 compensation through Amazon's Mechanical Turk Prime platform.

Measures

Study 2 utilized the same measures described in Study 1, with the addition of a demographic measure assessing political affiliation.

Demographic questionnaire. In addition to the demographic measures described in Study 1, political affiliation was assessed using the Liberal-Conservative Self-Identification scale (American National Election Studies [ANES], 2012). Participants reported their political affiliation on a 7-point scale (1 = *Extremely Liberal*; 7 = *Extremely Conservative*), and were also provided the option of, "Don't Know, Haven't Thought." See Appendix J for the complete item.

Results

Primary Analyses

Study 2 consisted of a 2 (prime: police or civilian) X 2 (construct: safety or fear) experimental design, where participants were randomly assigned to one of four conditions. Linear regression analyses yielded significant main effects for the prime type (police or civilian), $t(409) = 2.92, p = .004$, and the construct type (safety or fear), $t(409) = 3.13, p = .002$, on construct activation (i.e., total *hit* rate) when controlling for each variable. The interaction effect was not significant, $t(408) = 0.10, p = .923$ (see Table 4 for means and standard deviations of *hit* rate across conditions and Figure 5). Post-hoc analyses were conducted to further assess the simple effects. There was a marginally significant simple effect of prime in the safety condition, $t(408) = 1.93, p = .055$, such that police primes produced more safety word fragment

completions ($M = 2.89$, $SD = 1.23$) than civilian primes ($M = 2.52$, $SD = 1.34$). There was a significant simple effect of prime in the fear condition, $t(408) = 2.20$, $p = .029$, such that police primes produced more fear word fragment completions ($M = 3.31$, $SD = 1.41$) than civilian primes ($M = 2.92$, $SD = 1.34$). Thus, both safety and fear constructs were activated when primed with police.^{5,6}

A series of three-way interactions between prime (police or civilian), construct (safety or fear), and either race or political affiliation were conducted.

There was a non-significant main effect for race when controlling for construct type and prime type and no significant interactions involving race, prime type, and/or construct type, all $p > .413$. The data were plotted along with regression lines for each race (see Figure 6). Safety and fear constructs were activated for White and Black participants when primed with police officers; however, when looking at the simple effects of the interaction the extent of activation varied across construct and race. For Black participants, there was no significant difference between number of safety word fragments completed when primed with a police officer ($M = 2.85$, $SD = 1.41$) or civilian ($M = 2.50$, $SD = 1.36$), $t(404) = 1.27$, $p = .204$. However, there was a marginally significant difference between number of fear word fragments completed, such that

⁵ There was a significant simple effect of word in the police condition, $t(408) = -2.24$, $p = .026$, such that fear word fragments were completed more than safety word fragments when primed with police. There was a significant simple effect of word in the civilian condition, $t(408) = -2.18$, $p = .030$, such that fear word fragments were completed more than safety word fragments when primed with civilians.

⁶ Regarding the close relationships with police variables, the main effects of prime type and construct type while controlling for each other remained significant (both $p < .016$) when excluding individuals with at least one close relationship with police ($n = 92$). Similarly, the interaction between prime type and construct type remained non-significant ($p = .478$). When excluding participants without close relationships ($n = 320$), the main effect of construct type while controlling for prime type became non-significant ($p = .120$), whereas the findings regarding the main effect of prime type while controlling for construct type and the interaction remained the same ($p = .077$ and $p = .285$, respectively). There was no main effect for quantity of close relationships with police when controlling for prime type and construct type ($p = .698$), nor were there any significant two-way or three-way interactions involving prime type, construct type, and/or quantity of close relationships on construct activation (all $p > .677$). There was no main effect for how close the relationships were perceived to be among those who did have close relationships with police when controlling for prime type and construct type ($p = .692$), nor were there any significant two-way or three-way interactions involving prime type, construct type, and/or perceived closeness of relationships on construct activation (all $p > .623$).

when Black individuals were primed with police they completed more fear word fragments ($M = 3.29$, $SD = 1.30$) than when primed with civilians ($M = 2.80$, $SD = 1.43$), $t(404) = 1.911$, $p = .057$. For White participants, there was no significant difference in the number of safety word fragments completed when primed with police ($M = 2.93$, $SD = 1.03$) or civilians ($M = 2.54$, $SD = 1.34$), and there were no significant differences in the number of fear word fragments completed when primed with police ($M = 3.35$, $SD = 1.52$) or civilians ($M = 3.04$, $SD = 1.24$), $p = .148$ and $p = .229$, respectively.

There was a non-significant main effect for political affiliation when controlling for construct type and prime type and no significant interactions involving political affiliation, prime type, and/or construct type, all $p > .221$. Still the data were plotted along with regression lines for each condition. Although non-significant, visually observed patterns in the plotted data indicate that, compared to the control condition, when primed with police officers, fear construct activation decreases as conservative affiliation increases (see Figure 7), whereas safety construct activation increases as conservative affiliation increases (see Figure 8).

Secondary Analyses

Describing individual differences in the implicit attitude measures is important, even if the findings were not statistically significant. Exploratory analyses of three-way interactions between the prime (police or civilian), construct (safety or fear), and either gender, socioeconomic status, or various other individual difference variables (e.g., age, experience with police) were conducted, but all resulted in non-significant findings, all $p > .084$ and all $p > .127$, respectively for gender and socioeconomic status.

Of the variables tested, plotting the data for the three-way interaction between gender, prime type, and construct type delivered an interesting visual pattern. Although not a significant

finding, it appears that safety and fear constructs are activated when primed with police for both men and women, with the activation of both constructs being stronger for men (see Figure 9). Regarding socioeconomic status, visual interpretation of plotted data indicates that when primed with police officers, fear construct activation remains relatively stable across socioeconomic status (see Figure 10), whereas safety construct activation decreases as socioeconomic status increases (see Figure 11). Although this finding was not significant, it is noteworthy as the study was not powered to specifically assess socioeconomic differences and the visually observed pattern is in line with those observed in the previous study. It is possible the police presence was greater in communities of lower socioeconomic status, but that the presence was characterized by police effectiveness (Kochel, 2017b), leading to implicit safety associations versus fear associations. On the other hand, police presence might be lesser in communities of higher socioeconomic status, and the presence of police might indicate that something is wrong (e.g., an accident), which would be in line with van de Veer et al.'s (2012) conclusions regarding the effects of police presence in safe environments.

Implicit Attitudes and Explicit Attitudes

Explicit attitudes toward police were measured using the POPS (Nadal & Davidoff, 2015). A principal components analysis was conducted on the scale fitting two factors (police general and police unbiased subscales) with varimax rotation. The analysis resulted in two factors (i.e., two eigenvalues were greater than 1), which explained 82.2% of the variance for the scale items. When reviewing the factor loadings per item, the items loaded onto the correct factors as indicated in Nadal and Davidoff (2015). Composite scores were made by averaging all items ($\alpha = .97$) as well as averaging the items belonging to the police general subscale ($\alpha = .97$) and police unbiased subscale ($\alpha = .93$). The implicit attitude measure (i.e., number of correctly

completed safety and fear word fragments after police priming) did not significantly correlate with any of the explicit composite scores (see Table 5 and Table 6). Like the first previous study, at least a weak correlation was theoretically expected between the two attitude measures and the lack of convergent validity is of concern.

Racial Differences in Explicit Attitudes

An independent t-test revealed a significant racial difference in explicit attitudes toward police, $t(409) = -5.81, p < .001$, such that Black participants ($M = 2.83, SD = 0.89$) had less favorable attitudes toward police than White participants ($M = 3.36, SD = 0.99$). These findings replicate past research (e.g., Schuck et al., 2008; see Figure 12).

Discussion of Previous Studies

The previous studies resulted in some interesting findings that will be relevant to future work on implicit attitudes toward police. In the first study, participants indicated more implicit safety construct activation and less implicit fear construct activation when primed with police. This finding was not replicated in Study 2, where both fear and safety constructs were activated when primed with police. In both studies, the safety construct was activated when primed with police, which is inconsistent with the original hypothesis that fear but not safety would be activated when participants were primed with police. There are various speculative reasons for why inconsistent findings were observed. First, there were several demographic differences between the first and second study that could have impacted the main findings. The first study consisted of college students who were about 19 years old on average, primarily White (65.55%), and mostly women (53.59%). Of this sample, 81.34% identified as being born in the United States, 60.28% identified as living most of their lives in the suburbs, less than a quarter of the sample (24.40%) identified as having a childhood family income below \$50,000, 40.66%

identified as having at least one close relationship with a police officer, and 59.81% identified as never having an unpleasant experience with a police officer. In contrast, the second study was implemented online and consisted of participants who were about 36 years old on average, White (49.76%) or Black (50.24%), and mostly women (57.04%). Of this sample, 96.12% identified as being born in the United States, 44.66% identified as living the majority of their lives in the suburbs and 42.48% identified as living in a city (small or large), over half of the sample (60.68%) identified as having a childhood family income below \$50,000, 22.33% identified as having at least one close relationship with a police officer, and 59.22% identified as never having an unpleasant experience with a police officer. Thus, there were stark differences between the samples regarding age, racial distribution, birth place, childhood neighborhood, childhood family income, and close relationships with police.

Additional reasons, although more abstract than demographic differences, are important to note. It is also possible that for a college student sample, safety and fear constructs operate as opposite ends of one dimension when assessing implicit attitudes toward police—that is, when safety was activated, fear was subsequently deactivated. Also, college students may be more likely to think about campus police rather than county or state police, which could have increased safety construct activation as opposed to fear construct activation. On the other hand, with a more diverse sample (i.e., online sample), implicit attitudes toward police might become more complex. For the participants in Study 2, it is possible that safety and fear constructs operated independently and were therefore both activated when primed with police. Additionally, these participants may have been thinking of county or state police, whose occupations might encompass more diversity in their duties than a campus police officer. The

differing results from Study 1 and Study 2 indicate that individual differences in implicit attitudes toward police should be expected and further assessed.

Although Study 2 indicated activation of both constructs, the method used did not allow for conclusions regarding which construct is more strongly activated within each participant. It is important to determine which construct is more strongly activated, as this construct is more likely to be cognitively accessible in the presence of police. Using an implicit measure that requires safety and fear implicit associations to be compared as opposite ends of one dimension will assist in further understanding of implicit associations and will be important in determining which construct is more strongly activated in the presence of police.

Various individual differences and demographic differences were assessed in Study 1 and Study 2. As previously noted, neither the first or second study were specifically powered to assess individual difference variables (except for race in Study 2). Furthermore, it is possible that the Word Fragment Completion Task may not have been sensitive enough to register such disparities. For these reasons, discussing the patterns that were observed through plotting the data is important, as it is possible the individual differences do exist in the population even if not significant in the previous studies. Regarding socioeconomic status, whereas the impacted constructs differed (i.e., fear in Study 1 and safety in Study 2), the overarching pattern is consistent—that is, as socioeconomic status increases fear construct activation increases (Study 1) and safety construct activation decreases (Study 2) when primed with police; however, none of the analyses involving this variable were significant. Regarding the racial differences assessed in Study 2, a marginally significant simple effect was observed, such that Black participants experienced increases in fear construct activation when primed with police. Although not significant, the visual interpretations of plotted data regarding political affiliation

and gender differences in Study 2 were noteworthy. These interpretations indicated that conservatives experience more safety construct activation when primed with police, whereas liberals experience more fear construct activation when primed with police. Additionally, men appear to have stronger implicit reactions to police than women, as men (versus women) experience stronger safety and fear construct activation when primed with police. These visual patterns are inconsistent with those of the first previous study, where women appeared to have stronger reactions to police in that they, when primed with police, experienced relatively stronger decreases in fear construct activation than men. However, this disparity may be trivial considering analyses in both studies yielded non-significant results.

Regardless of the non-significant findings regarding individual difference variables in the previous studies, there is still reason to believe that there are individual differences in implicit attitudes toward police. Most notably, the literature on explicit attitudes toward police has been exhaustive in identifying such individual differences. These findings have highlighted the important roles of race, gender, age, socioeconomic status, etc., in the process of developing explicit attitudes toward police (e.g., Brown & Benedict, 2001). Further investigation concerning individual differences in implicit associations with police is an important task, as this knowledge will be very useful in targeting intervention programs aimed at promoting positive police-civilian relations.

The findings from the previous studies provide some direction for future research assessing implicit attitudes toward police. In combination with the literature on explicit attitudes toward police, there are indicators of various individual difference variables that might moderate implicit associations (e.g., socioeconomic status, race, political affiliation, gender); therefore, future research aimed at clarifying these relationships is required. Before focusing on the role of

moderating variables, it is vital to explore additional implicit measures that can be created and utilized in the assessment of implicit attitudes toward police. Of importance, convergent validity between the implicit and explicit attitude measures was not observed in either previous study. The lack of convergent validity indicates that the Word Fragment Completion Task might not have fully measured what it was intended to measure, as the implicit and explicit attitudes toward police are similar constructs and should be (at least weakly) correlated. It is possible that the Word Fragment Completion Task was not the most robust implicit measure to use; therefore, research using a different, more sensitive implicit measure that assesses the relative activation of each construct is required to elaborate on the findings of the previous studies.

The Current Study

The current study had five objectives: (1) to expand on the previous studies and continue to assess the implicit associations that civilians have with police using a different implicit measure, the IAT (Greenwald et al., 1998); (2) to investigate the sensitivity of several versions of the IAT (see Table 7, Appendix K, and description below); (3) to explore possible individual difference variables that may moderate the strength and direction of implicit associations with police officers (e.g., race, political affiliation, gender, socioeconomic status); (4) to assess the predictive validity of civilian implicit associations with police officers in relation to anticipated officer behavior in the presence of a threatening (versus nonthreatening) situation (see Appendix L); (5) to assess the predictive validity of civilian implicit associations with police officers in relation to anticipated self-behavior when interacting with a police officer (i.e., willingness to cooperate with police; see Appendix M).

Four versions of the IAT were developed for this study (see Table 7): IAT Version 1 (police categorization: models; word categorization: emotional), IAT Version 2 (police

categorization: models; word categorization: evaluative), IAT Version 3 (police categorization: symbols; word categorization: emotional), and IAT Version 4 (police categorization: symbols; word categorization: evaluative). The models police categorization involved participants categorizing images of police models and civilian models. The symbols police categorization involved participants categorizing police-related objects (e.g., police car) and everyday objects (e.g., name tag). The emotional word categorization involved participants categorizing fear-related words (e.g., *panic*) and safety-related words (e.g., *comfort*). The evaluative word categorization involved participants categorizing good-related words (e.g., *cheer*) and bad-related words (e.g., *despise*).

In light of the findings from the previous two studies, it was hypothesized that: (1) participants would have stronger implicit associations between police and safety/good than police and fear/bad, regardless of police categorization type (i.e., police officer models or police symbols), and that this association would be moderated by various individual difference variables (e.g., race, political affiliation); (2) participants with stronger fear/bad than safety/good implicit associations with police officers would anticipate more aggressive police officer behavior in both threatening and nonthreatening hypothetical situations; (3) participants with stronger fear than safety implicit associations with police officers would anticipate being less cooperative with police officers. There were no specific hypotheses regarding differences in the predictive validity of the IAT scores between the threatening and nonthreatening situations; rather, this distinction was included to highlight the potential importance of situational components impacting anticipated police officer behavior.

The hypotheses were based on the two previous studies described, as there has been no additional research assessing civilian implicit associations with police officers. Extensive

research has implied the possibility of fear implicit associations with police officers and bearing in mind the coverage of accounts of police brutality, the current state of police-civilian relations, and the development of various activist organizations, individual differences in implicit associations were expected. The previous studies produced mixed results in relation to various individual difference variables; therefore, one goal of the current study was to further explore moderating variables and their relation to implicit associations.

To corroborate and expand on the findings from the previous studies, the current study utilized a different implicit measure, the IAT (Greenwald et al., 1998), to assess the implicit associations between police versus civilians (models and symbols) and positive and negative constructs (emotional and evaluative). The IAT was used to clarify the mixed results of the previous studies, and to show that the results are not dependent on a particular method of assessing implicit associations, as several studies have found different implicit measures to not always yield the same results (e.g., Bosson, Swann, & Pennebaker, 2000; Fazio & Olson, 2003; Sherman, Rose, Koch, Presson, & Chassin, 2002). The IAT was administered to a university population using the student subject pool. Participants were compensated through course credit. Each participant completed two IAT measures of four possible IAT measures and the order of presentation was randomized. In light of using a college student sample, it was difficult to further investigate the racial differences in implicit associations between Black and White participants, as suggested in the second previous study. Therefore, the overarching goal of the current study was to replicate the combined findings from the previous studies—that is, stronger safety/good implicit associations with police as opposed to fear/bad implicit associations—while also investigating the sensitivity of various versions of the IAT, the convergent validity, and the predictive validity of implicit associations with police officers.

Method

Participants and Design

Two hundred and sixty-five participants completed the study. Thirteen participants were excluded from analyses according to the following criteria: computer malfunction ($n = 3$), participant was not born in the United States ($n = 6$), and over 10 percent of the response times to at least one of the IATs were less than 300 milliseconds ($n = 4$), an exclusion criterion advised by Greenwald, Nosek, and Banaji (2003). Thus, the final sample consisted of 252 participants.

Several a priori power calculations were conducted to determine the sample size needed for the present study. Of primary importance was to produce a sufficiently powered sample to assess the sensitivity of the four versions of the IAT (described below). A priori power calculations suggested that 98 participants would provide sufficient power (power = .80) to detect effects of a moderate size (effect Size $f = .25$) using a 2 X 2 ANOVA with one between and one within-subject variable. Another a priori power calculation was conducted for a second purpose, to see which version of the IAT versions had the best predictive validity for anticipated police officer behavior and anticipated cooperation with police (described below). This a priori power calculation suggested 84 participants would provide sufficient power (power = .80) to detect effects of moderate size ($r = .3$) using correlational analyses. However, because participants would only complete two versions of the IAT (rather than four), this number would need to be doubled (i.e., 168). Furthermore, because participants only saw one of two versions of one dependent variable (i.e., anticipated police behavior), that number would need to be doubled again (i.e., 336). Acknowledging the recruitment constraints of a college sample, the first power analysis was prioritized—that is, data from a minimum of 98 participants were to be collected, and then as many additional participants as time would allow were recruited, leading

to a final sample of 252 eligible participants. Restrictions on participation included being 18 years of age or older, enrollment in a Psychology course, and having been born in United States.

The participants ($N = 252$; 124 women, 128 men) were college undergraduate students ranging in age from 18 to 32 years ($M = 19.13$, $SD = 1.40$). The sample consisted of mostly White or European American participants ($n = 185$; 73.41%), followed by Black or African American ($n = 19$; 7.54%), Asian ($n = 15$; 5.95%), Hispanic or Latino ($n = 14$; 5.56%), multi-racial or mixed ($n = 12$; 4.76%), other ($n = 3$; 1.19%), Native Hawaiian or Other Pacific Islander ($n = 2$; 0.79%), American Indian or Alaska Native ($n = 1$; 0.40%), and those who preferred not to answer ($n = 1$; 0.40%). Additional individual difference variables were measured (e.g., socioeconomic status, relationships with police). In all analyses, excluding participants with at least one close relationship with a police officer ($n = 113$) led to either similar findings or reduced significance due to decreased power.

Participants completed two of four IAT measures, responded to questions assessing anticipated police officer behavior and anticipated cooperation with police, and reported on their explicit attitudes toward, relationships with, and previous experience with police officers. Individual difference variables including race/ethnicity, gender, age, place of birth, type of childhood neighborhood, family income (objective and subjective measurement), and political affiliation were measured. The overall design of the study was a 2 (IAT police categorization: models or symbols) X 2 (IAT police/word pairing: models/evaluative and symbols/emotional or models/emotional and symbols/evaluative) X 2 (vignette type: threat or no-threat) design. The IAT police categorization represented a within-subject variable, such that participants completed two IATs, one categorizing police models and another categorizing police symbols. The IAT police/word pairing represents a between-subject variable, where the individual completed either

an IAT where police models were paired with emotional words and an IAT where police symbols were paired with evaluative words or an IAT where police models were paired with evaluative words and an IAT where police symbols were paired with emotional words. Both IATs were completed at the start of the study session. The vignette type represented a between-subject manipulation where participants read a story involving a police officer either in potential danger (i.e., threat) or not in danger (i.e., no-threat), a distinction included to highlight the situational importance of police-civilian interactions (discussed further in the measures section).

Procedure

Participants were recruited through the online SONA system website to participate in a study titled “Attitudes Toward Police.” Participants voluntarily signed up for a study timeslot and reported to the lab during the time of their session. Upon entering the lab, participants were directed to a computer where they read the informed consent and provided consent to participate in the study. Participants began by completing two of the four IAT measures (see Table 7). To avoid carry-over effects as much as possible, the two IAT measures completed by each participant were “opposites” (i.e., maximally different from each other)—that is, if a participant first completed an IAT categorizing police/civilian models and evaluative words (i.e., IAT Version 2) he or she would next complete an IAT categorizing police/civilian symbols and emotional words (i.e., IAT Version 3). Participants then responded to questions assessing anticipated police officer behavior, anticipated cooperation with police, explicit attitudes toward police officers, relationships with police officers, experiences with police officers, and several demographic questions including race, gender, age, etc. Participants were then debriefed, thanked for their participation, and provided compensation through course credit (as designated by the standards of the online SONA system).

Measures

Implicit attitude measure. Participants completed two modified versions of the IAT (Greenwald et al., 1998) that were created to assess implicit emotional (i.e., safety versus fear) and evaluative (i.e., good versus bad) associations with police models (i.e., images of police versus images of civilians) and police symbols (i.e., police objects versus everyday objects; four versions outlined above). The structure of the IAT assumes that participants will have better categorization performance when constructs closely associated in memory are matched to the same key (i.e., ‘E’ or ‘I’ key). Both IAT measures that each participant completed involved categorizing stimuli related to police officers (e.g., images of police officer models, image of a handcuffs), stimuli related to civilians or non-police officers (e.g., images of civilian models, image of watch), stimuli related to good/safety (e.g., *cheer*, *shelter*), and stimuli related to bad/fear (e.g., *despise*, *worry*). In the two versions of the IAT where images of police officer and civilian models were categorized, the images consisted of White male models. Male (versus female) models were chosen because the prototypical American police officer is male—a pretest of this notion indicated that 96.6% of participants ($n = 115$) thought the typical police officer to be male (Guzman & Sargent, 2018). Similarly, White (versus non-White) models were chosen because the prototypical American police officer is White—a pretest of this notion indicated that 86.5% of participants ($n = 103$) thought the typical police officer to be White.

As an example of the procedure of the IAT, in Version 1 of the IAT (police categorization: models/word categorization: emotional), participants in the first combined task might press the ‘E’ key to categorize images of police officer models or words related to safety, and the ‘I’ key to categorize images of civilian models or words related to fear. In the following combined task, participants would press the ‘E’ key to categorize images of police officer

models or words related to fear, and the ‘I’ key to categorize images of civilian models or words related to safety. Participants who are faster at the first combined task than at the second combined task would have stronger implicit associations between the concepts of *police officer* and *safety* than *police officer* and *fear*. The key pairings (e.g., pairing police and good to the ‘E’ key) were counterbalanced across participants, such that some participants first paired the police categorization and safety/good categorization to the same key and other participants first paired the police categorization and fear/bad categorization to the same key. While performing more than one IAT has been associated with reduced magnitude of future IAT scores, the improved scoring algorithm for the IAT reduces this effect (Greenwald et al., 2003). Additionally, providing participants with “opposite” IATs and counterbalancing the presentation of the two IAT tasks across all participants should address this issue. See Appendix K for the complete set of images and words to categorize in the four versions of the IAT.

Anticipated police officer behavior. Anticipated police officer behavior was assessed using three questions corresponding to a vignette. Participants were presented with a vignette about a male police officer in either a threatening or nonthreatening situation, as controversies surrounding accusations of police brutality often focus on whether the police officer was threatened by the civilian, linking police use of force to situational components regarding threat. Both vignettes had been informally pretested with a sample from the student population and had effectively produced differences in responses to questions concerning perceptions of police. After reading the vignette, participants responded to three questions. The first question assessed anticipation of the police officer shooting (i.e., *How likely do you think it is that the officer will fire his gun at the suspect?*) on a 5-point scale (1= *Not Likely At All*; 5 = *Almost Certainly*). The second question assessed anticipated fear among the police officer (i.e., *How frightened do you*

think the officer would be in this situation?) on a 5-point scale (1 = *Not At All*; 5 = *Extremely*).

The third question assessed anticipated support of police officer behavior if the police officer were to shoot the civilian in the vignette (i.e., *If the officer did shoot the suspect, would you support this action?*) on a 5-point scale (1 = *Not At All*; 5 = *Very Much*). See Appendix L for the complete set of vignettes and items.

Anticipated cooperation with police. Anticipated cooperation with police was assessed using a previously developed 4-item scale (e.g., Murphy et al., 2014; Sargeant & Kochel, 2018). Participants indicated the likelihood of various statements of cooperation (e.g., *How likely would you be to call police to report a crime?*) on a 5-point scale (1 = *Very Unlikely*; 5 = *Very Likely*). See Appendix M for the complete set of items.

Explicit attitude measure. Explicit attitudes toward police were assessed using the Perceptions of Police Scale (POPS; Nadal & Davidoff, 2015). Participants indicated the extent to which they agreed with twelve statements (e.g., *police officers are friendly*) on a 5-point scale (1 = *I Strongly Disagree*; 5 = *I Strongly Agree*). Responses on each item were averaged to get an overall explicit attitude toward police score, where higher scores indicated more positive views of police officers. Additionally, two subscales were created consisting of a subset of averaged items from the POPS. The subscales included (1) general attitude toward police and (2) the perception of police being unbiased. Finally, two additional items were added to the POPS (but not included in composite scores), assessing explicit feelings of safety and fear toward police officers. See Appendix D for the complete set of items.

Relationship with police measure. The presence of close relationships with police was assessed through three items. These items assessed the number of close relationships (i.e., how many close relationships with police the participant has), the type of close relationship (e.g.,

friend, family), and how close the participant considered these close relationships to be on a 5-point scale (1 = *Not Close At All*; 5 = *Very Close*). See Appendix E for the complete set of items.

Experience with police measure. The presence of previous unpleasant encounters with police was assessed through two items. These items assessed the number of unpleasant encounters (i.e., how many unpleasant encounters the participant has had with a police officer), and how unpleasant the participant considered those encounters to be to be on a 5-point scale (1 = *Not Unpleasant At All*; 5 = *Very Unpleasant*). See Appendix F for the complete set of items.

Demographic questionnaire. Demographic information was assessed at the end of the study. These questions gathered information pertaining to gender/sex, age, year in college, academic major, racial/ethnic group identification, where the participant was born, how many years the participant had lived in the United States, if English is the participant's first language, English fluency, childhood neighborhood, subjective social class (Adler et al., 2000), objective social class, and political affiliation (ANES, 2012). See Appendices G, H, I, and J for the complete set of items.

Results

Implicit Associations with Police: Four Version of the IAT

IAT conclusions. Data analysis for the current study consisted of recording D scores (a measure of association as defined by Greenwald et al., 2003) for each participant for both IAT measures that were completed. Depending on the version of the IAT administered, positive D scores indicated an implicit association between police models/police symbols and safety/good, and negative D scores indicate an implicit association between police models/police symbols and fear/bad. The mean D score for the four versions of the IAT were all negative and significantly lower than zero (all $p < .008$), indicating a stronger comparative implicit association between

police models/police symbols (versus civilian models/everyday objects) and fear/bad (versus safety/good; see Table 8 for means and standard deviations of the four IATs).⁷

IAT version sensitivity. When assessing the sensitivity of the four versions of the IAT separately, the D scores of the IATs categorizing police symbols and everyday objects were most sensitive (i.e., significantly less from zero), $t(127) = -7.47, p < .001$ and $t(123) = -7.67, p < .001$, respectively for the combination of the emotional and evaluative word categorizations. The D scores of the IATs categorizing police models and civilian models were less sensitive, but still significantly less than zero, $t(123) = -2.71, p = .008$ and $t(127) = -3.67, p < .001$, respectively for the combination of the emotional and evaluative word categorizations. Furthermore, when collapsing across word categorization, D scores for the police categorization involving symbols was significantly lower than D scores for the police categorization involving models for the emotional categorization (i.e., safety/fear), $t(250) = 3.55, p < .001$, and the evaluative categorization (i.e., good/bad), $t(250) = 3.61, p < .001$. When collapsing across police categorization, D scores for the word categorizations involving emotional and evaluative terms did not differ, both $p > .637$. Thus, regarding sensitivity of the measure, the type of police categorization produced significant differences in D scores, whereas the type of word categorization produced similar D scores.

To corroborate the sensitivity findings presented above, a multi-level model was conducted predicting D scores by the police categorization (i.e., models or symbols) and the pairing (i.e., models/evaluative and symbols/emotional or models/emotional and symbols

⁷ Regarding the close relationships with police variables, the mean D score for the four versions of the IAT remained significantly lower than zero when excluding participants with close relationships with police ($n = 113$; all $p < .041$). When excluding participants without close relationships ($n = 139$), only the first IAT (models/emotional) became non-significant ($p = .162$). Furthermore, quantity of close relationships with police was not predictive of D scores for any version of the IAT (all $p > .196$), nor was how close these relationships were perceived to be among those who did have close relationships (all $p > .233$).

evaluative), nested within individuals. In this situation, the main effect for the pairing variable refers to the interaction between the police categorization and word categorization (i.e., emotional or evaluation). The interaction between the police categorization and the pairing variable refers to the main effect of the word categorization. There was a main effect of police categorization when controlling for the pairing variable, such that the police symbols were more predictive of D scores than the police models, $b = -0.21$, $SE = 0.03$, $t(251) = -7.30$, $p < .001$.⁸ The main effect of pairing (i.e., the interaction between police categorization and word categorization) was not significant, $b = -0.0002$, $SE = 0.05$, $p = .997$. Likewise, the interaction between the police categorization and pairing variable (i.e., the main effect of word categorization) was not significant, $b = -0.05$, $SE = 0.06$, $p = .364$. In corroboration with the t-tests described above, these analyses highlight the increased sensitivity of the IAT when using police symbols in the police categorization as opposed to police models.

IAT internal consistency. Internal consistency correlations were calculated for the four versions of the IAT by calculating the correlation between the D scores for the first combined blocks of the IAT (blocks 3/6) and the second combined blocks of the IAT (blocks 4/7). All versions of the IAT had strong internal consistency, such that the D scores for the first combined block of the IATs and the D scores for the second combined blocks of the IATs were positively correlated, all $r > .52$, all $p < .001$ (see Table 9 for correlation coefficients). When applying the Spearman-Brown correction to compensate for the underestimated reliability that comes from halving a measure, internal consistency correlation coefficients increased to .72, .69, .77, and .82 for IAT version 1, 2, 3, and 4, respectively (Houben, Nosek, & Wiers, 2010; Karpinski & Steinman, 2006).

⁸ Degrees of freedom was obtained using the “lmerTest” R package, which uses the Satterthwaite method to compute degrees of freedom.

IAT order effects. Because participants completed two versions of the IAT, a repeated measure t-test was used to assess any potential order effects that could arise—that is, if the first IAT completed resulted in a significantly different mean D score than the second IAT completed, this would indicate a potential issue that would need to be further assessed. Consistent with expectations that the new scoring algorithm combined with the counter-balancing of IAT variations would avoid this issue, the first and second IAT measures did not significantly differ, $t(251) = 1.01, p = .316$.

Convergent Validity

The POPS (Nadal & Davidoff, 2015) and its two subscales (i.e., general attitudes and unbiased attitudes) were the main explicit attitude measures assessed in this study. A principal components analysis was conducted on the scale fitting two factors (police general and police unbiased subscales) with varimax rotation. The analysis resulted in two factors (i.e., two eigenvalues were greater than 1), which explained 70.9% of the variance for the scale items. When reviewing the factor loadings per item, the items loaded onto the correct factors as indicated in Nadal and Davidoff (2015). Composite scores were made by averaging all items ($\alpha = .94$) as well as averaging the items belonging to the police general subscale ($\alpha = .94$) and police unbiased subscale ($\alpha = .89$). Two additional explicit items directly assessing safety and fear explicit associations with police were also measured.

In order to establish convergent validity, the correlations between the previously stated explicit attitude measures and the four versions of the IAT, the models version of the IAT (collapsed across word categorization), the symbols version of the IAT (collapsed across word categorization), the emotional version of the IAT (collapsed across police categorization), the evaluative version of the IAT (collapsed across police categorization), the D scores for the first

IAT, and the D scores for the second IAT were conducted (see Table 10 for correlation coefficients). With few exceptions, the implicit attitude measures were correlated in the expected direction with the explicit attitude measures—that is, more positive explicit attitudes were correlated with more positive implicit attitudes. To expand, the composite of all items on the POPS were correlated with all versions of the IAT, including collapsed versions, first IAT, and second IAT, all $r > .14$, all $p < .040$. The general attitudes subscale correlated with all versions of the IAT, including collapsed versions and the second IAT, all $r > .19$, all $p < .034$. The unbiased attitudes subscale correlated with three versions of the IAT (i.e., models/emotional, symbols/emotional, symbols/evaluative), the collapsed versions, and the first and second IAT, all $r > .15$, all $p < .023$. The explicit safety item correlated with all versions of the IAT, including collapsed versions and the first and second IAT, all $r > .18$, all $p < .015$. The explicit fear item correlated with two versions of the IAT (i.e., models/evaluative and symbols/emotional), the collapsed versions and the first and second IAT, all $r < -.14$, all $p < .037$.

To corroborate that there were no differences between the models and symbols police categorization IAT versions regarding convergent validity, comparisons of the dependent correlations were conducted.^{9,10} In all cases, there were no significant differences between the models and symbols versions of the IAT, all $p > .331$.

Known-Groups Validity/Individual Differences

Trends in the second previous study indicated that Black and White individuals experience construct activation of safety and fear when primed with police (as opposed to civilians); however, post hoc analyses of simple effects indicated that the only significant

⁹ Wilcox and Tian (2008) provide two methods for comparing dependent correlations. The first method, D1, was utilized in the current and following analyses.

¹⁰ Linear regression analyses were conducted to assess differences between word categorization type. In all cases, there were no significant differences, all $p > .255$.

increase was among Black individuals where there was more fear construct activation when primed with police. Because the current study was not powered to assess racial differences between specifically White and Black individuals, analyses investigating racial differences between White ($n = 185$) and non-White ($n = 67$) individuals were conducted. When assessing racial differences within the four versions of the IAT only two versions, symbols/evaluative and models/emotional, yielded significant racial differences, $t(122) = 2.15, p = .034$ and $t(122) = 2.03, p = .044$, respectively. In both cases, White individuals had more positive D scores (i.e., implicit associations between police and good/safety) than non-White individuals. The other two versions did not yield significant racial differences, both $p > .324$. When collapsing across word categorization type and police categorization type, racial differences were observed in the symbols IAT and the emotional IAT, $t(250) = 2.17, p = .031$ and $t(250) = 2.22, p = .027$, respectively, such that White individuals had more positive D scores than non-White individuals. The collapsed models IAT and evaluative IAT did not yield significant racial differences, both $p > .059$. Thus, racial differences in implicit associations with police were not consistently found across all versions of the IAT, but where they were observed they were in the expected direction (see Figure 13 for racial differences in the emotional IAT, collapsed across police categorization). Like the second previous study and in line with the trends in implicit attitudes, racial differences in explicit attitudes were also observed, such that non-White individuals had more negative explicit attitudes toward police than White individuals using the composite of all items on the POPS, $t(250) = 6.51, p < .001$ (see figure 14 for racial differences in explicit attitudes toward police).

Trends in the second previous study indicated that conservatives experience more safety construct activation when primed with police, whereas liberals experience more fear construct

activation when primed with police. To assess this trend in the current study, correlations between political affiliation and D scores across the four IAT versions and the collapsed versions were obtained. Twenty-two individuals responded “Don’t Know, Haven’t Thought” when asked about political affiliation, and were thus excluded from analyses. Of the remaining individuals ($n = 230$), three reported being “Extremely Liberal,” 86 reported being “Liberal,” 36 reported being “Slightly Liberal,” 51 reported being “Moderate, Middle of Road,” 30 reported being “Slightly Conservative,” 22 reported being “Conservative” and two reported being “Extremely Conservative.” Except for one version of the IAT (i.e., symbols/emotional), all other versions (i.e., symbols/evaluative, models/emotional, and models/evaluative) yielded political affiliation to be a significant predictor of D scores, all $r > .22$, all $p < .017$, such that more conservative affiliation was predictive of more positive D scores/implicit associations with police. Similar trends were observed when collapsing across police categorization and word categorization, all $r > .23$, all $p < .001$. Thus, in almost all scenarios individual differences based on political affiliation were observed (see Table 11 for correlation coefficients between political affiliation and D scores across IAT versions and Figure 15 for political affiliation in the emotional IAT, collapsed across police categorization).

Additional individual difference variables were assessed; however, the findings are less conclusive. For gender, one version of the IAT (i.e., symbols/evaluative) and one collapsed version (i.e., symbols, collapsed across word type) indicated gender differences, such that women ($M = -0.46$, $SD = 0.48$ and $M = -0.41$, $SD = 0.48$, respectively) had more negative implicit associations with police than men ($M = -0.25$, $SD = 0.51$ and $M = -0.27$, $SD = 0.51$, respectively), $t(122) = -2.37$, $p = .019$ and $t(250) = -2.21$, $p = .028$, respectively (see Figure 16 for gender differences in the symbols/evaluative IAT). These findings are inconsistent with the

previous studies, where women had either decreases in fear construct activation when primed with police (previous Study 1) or men had stronger fear and safety construct activation than women (previous Study 2). For socioeconomic status, the sample was not normally distributed, with almost half (47.6%) of the sample reporting an average childhood family yearly income of over \$100,001 (one individual was removed from analyses for not responding to the question). Socioeconomic status was not a significant predictor of implicit attitudes for any version of the IAT (including collapsed versions), all $p > .198$. Nonetheless, data were plotted for the symbols/evaluative IAT and patterns in the data indicate a slight increase in D scores as socioeconomic status increases (see Figure 17). This finding is inconsistent with the previous studies, where visual interpretation of the data indicated more negative implicit attitudes toward police as socioeconomic status increased.

Outcome Measure Validity

Before assessing the predictive validity of the implicit associations, the outcome measures needed to be examined in relation to each other and the explicit attitude measures. The two main outcome measures were (1) the anticipated police behavior questions in response to either the threat or no-threat vignettes and (2) the anticipated cooperation with police measures. Three items were assessed in response to the vignette: anticipation that the police officer would shoot, anticipation of fear among the police officer, and anticipation of supporting the police officer shooting. The manipulation was successful, such that individuals in the threat condition anticipated the police officer to be more likely to shoot, the police officer to be more frightened, and to be more supportive of the police officer shooting than individuals in the no-threat condition, $t(249) = 7.79, p < .001$, $t(250) = 6.93, p < .001$, and , $t(250) = 7.95, p < .001$, respectively. A principal components analysis was conducted on the four willingness to

cooperate items fitting one factor with varimax rotation. The analysis resulted in one factor (i.e., one eigenvalue greater than 1), which explained 65.1% of the variance for the scale items. Thus, a composite score was made by averaging all four items ($\alpha = .82$).

Regarding willingness to cooperate, the composite score negatively correlated with the anticipation of the police officer shooting item in the threat condition and when collapsing across both vignette types, both $r < -.16$, both $p < .009$, but not in the no-threat condition, $r = -.03$, $p = .750$. Additionally, willingness to cooperate scores were significantly correlated with all explicit attitude items in the expected directions (for POPS composite, subscales, and explicit safety item all $r > .36$, all $p < .001$; for the explicit fear item $r = -.24$, $p < .001$). Thus, as anticipation that the police officer would shoot increased and as explicit attitudes toward police became more negative, willingness to cooperate with police decreased.

Regarding the anticipation of police shooting item, the scores correlated with all explicit attitude items in the threat and no-threat conditions, except for the explicit safety item in the no-threat condition (for POPS composite and subscales all $r < -.28$, all $p < .01$; for the explicit fear items all $r > .30$, all $p < .001$; for the explicit safety item in the threat condition $r = -.36$, $p < .001$). When collapsing across vignette type, the anticipation of police shooting item correlated with the anticipation of the police officer being frightened item, $r = .31$, $p < .001$, the anticipated support for police shooting item, $r = .39$, $p < .001$, and with all explicit attitudes toward police measures (for POPS composite, subscales, and explicit safety item all $r < -.28$, all $p < .001$; for the explicit fear item $r = .32$, $p < .001$). Thus, those with greater anticipation of the police officer shooting also anticipated the police officer to be more frightened, anticipated more support for the police officer shooting, reported less willingness to cooperate with police, and reported more negative explicit attitudes toward police (see Table 12 for correlation coefficients).

Predictive Validity of the IAT

Correlational analyses were used to assess the ability of each IAT to predict the anticipated police officer behavior (threat condition, no-threat condition, and combined), and the willingness to cooperate measure. Analyses included correlations with all outcome measures and each version of the IAT, the models and symbols IATs (collapsed across word categorization), the emotional and evaluative IATs (collapsed across police categorization), the first IAT completed, and the second IAT completed (although the usefulness of the relative predictive validity of the first and second IAT is not clear, and these results are thus footnoted¹¹). All significant correlations observed were in the expected direction. The models/evaluative IAT, models IAT (collapsed across word categorization) and the evaluative IAT (collapsed across police categorization) were positive predictors of willingness to cooperate, all $r > .15$, all $p < .017$. Regarding the threat vignette, the models/evaluative IAT negatively predicted anticipated police officer fear, $r = -.25$, $p = .049$, such that those with more positive implicit associations predicted the police officer to experience less fear. Regarding the no-threat vignette, the models/emotional IAT negatively predicted anticipated police officer shooting behavior, $r = -.28$, $p = .028$. When collapsing across vignette type, the models/emotional IAT, the models IAT (collapsed across word categorization type), and the emotional IAT (collapsed across police categorization type), negatively predicted anticipated police officer shooting behavior, all $r < -.14$, all $p < .025$. When collapsed across vignette type, the models/evaluative IAT and the

¹¹ The usefulness of the relative predictive validity of the first and second IAT is not clear, as the first and second IAT version varied across individual. Nonetheless, the findings should be provided as only the second IAT was found to be a significant predictor. The second IAT was a positive predictor of willingness to cooperate with police, $r = .16$, $p = .012$, and a negative predictor of anticipated police officer shooting behavior in the threat condition, $r = -.19$, $p = .036$. Finally, when collapsing across vignette type, the second IAT negatively predicted anticipated police officer shooting behavior, $r = -.12$, $p = .048$.

models IAT (collapsed across word categorization type) negatively predicted anticipated police officer feelings of fear, both $r < -.14$, both $p < .027$ (see Table 13 for correlation coefficients).

To specifically assess differences in predictive validity between the models and symbols police categorization IAT versions, comparisons of the dependent correlations were conducted.¹² Reported are analyses pertaining to the significant correlations noted above, as differences between non-significant correlations are not meaningful with regard to effective predictive validity.¹³ In predicting willingness to cooperate with police, there was no significant difference between the models and symbols versions of the IAT, $r(250) = .08$, $p = .179$. When collapsing across vignette type, there was no significant difference between police categorization for anticipated shooting behavior, $r(249) = -.05$, $p = .418$; however, there was a significant difference between the police categorizations for anticipated police officer fear, $r(250) = -.17$, $p = .006$, such that the models version was more predictive than the symbols version (as is consistent with the previously noted correlations). Regarding the threat and no-threat vignette, there were no significant interactions between the vignette type and difference between the standardized models IAT D scores and symbols IAT D scores in predicting anticipated police officer shooting behavior or fear, both $p > .627$. Thus, the models version of the IAT was only significantly more predictive than the symbols version of the IAT when collapsing across vignette type and predicting anticipated police officer fear.

¹² Linear regression analyses were conducted to assess differences between word categorization type. In all cases, there were no significant differences, all $p > .151$.

¹³ None of the IAT versions predicted anticipated support for shooting behavior, regardless of vignette type. Although there was a difference between the models and symbols versions of the IAT, $r(250) = -.15$, $p = .018$, the difference was among non-significant correlations with anticipated support for shooting (i.e., $r = -.04$, $p = .545$ and $r = .11$, $p = .094$, respectively for the models and symbols IATs). Similarly, there was a marginally significant three-way interaction between the standardized D score difference, pairing, and vignette type, $t(244) = -1.965$, $p = .051$, but this interaction is not informative as the D scores did not predict anticipated support for shooting.

To assess the predictive validity of implicit attitudes beyond explicit attitudes, a series of partial correlations were computed controlling for explicit attitudes toward police (i.e., POPS all items averaged). If explicit attitudes toward police were the primary predictor of the outcome variables, the partial correlations would not be significant. Four partial correlations were significant. A partial correlation was observed when controlling for explicit attitudes on the relationship between the models/evaluative IAT D scores and willingness to cooperate with police, $r = .20, p = .026$, such that those with more positive implicit associations reported more willingness to cooperate with police. Additionally, a partial correlation was observed when controlling for explicit attitudes on the relationship between the models/evaluative IAT D scores and anticipation that the police officer will be frightened in the threat condition, $r = -.27, p = .032$, and when collapsed across vignette type, $r = -.23, p = .011$. Finally, a partial correlation was observed when controlling for explicit attitudes on the relationship between the models IAT (collapsed across word categorization) D scores and anticipation that the police officer will be frightened when collapsed across vignette type, $r = -.16, p = .014$.

Thus, when summarizing the direct predictive validity of the four versions of the IAT, the models police categorization has better predictive validity than the symbols police categorization, with a statistically significant difference regarding the prediction of anticipated police officer fear; the evaluative word categorization predicted willingness to cooperate and anticipated police officer fear (although not significantly more so than the emotional word categorization); the emotional word categorization predicted anticipated police officer shooting behavior (although not significantly more so than the evaluative word categorization). Partial correlations assessing the unique ability of implicit attitudes to predict the outcome variables indicated the models/evaluative IAT and the models IAT (collapsed across word categorization)

to be primary predictors beyond explicit attitudes. It should be noted that these findings stand in contrast those regarding the sensitivity of the IATs, where the symbols police categorization was found to be superior to the model police categorization and the word categorizations did not systematically differ.

Discussion

Implicit Attitudes Toward Police

The tension between police officers and civilians has been a focus of television programming, media reporting, activist groups, research endeavors, etc. The presented studies fill a gap in the literature by assessing implicit attitudes toward police officers among the civilian population. The two previous studies set a foundation for research in this area—that is, they utilized a specific implicit measure, the Word Fragment Completion Task (Johnson & Lord, 2010; Vargas et al., 2007), to assess safety and fear construct activation when participants were primed with police (versus civilians). In the first previous study involving a college student sample, safety construct activation was increased when participants were primed with police, whereas fear construct activation was decreased, a finding that was counter to the original expectation that fear construct activation would be increased and safety construct activation would be decreased. The second previous study comprising of workers on Amazon’s Mechanical Turk Prime, and thus a more heterogeneous sample, indicated both safety and fear construct activation when primed with police. The consistent construct activation of safety but inconsistent trends in fear construct activation called for further investigation of implicit attitudes and a need to assess implicit attitudes using a different implicit measure, as different implicit measures have been found to not always yield the same results (Bosson et al., 2000; Fazio &

Olson, 2003; Sherman et al., 2002). For these reasons, the current study was developed with the application of several modified versions of the IAT.

Unlike the previous studies, the current study utilized an implicit measure that is comparative in nature, the IAT (Greenwald et al., 1998)—that is, the current study sought to determine which cognitive constructs were more strongly associated with police officers, as opposed to purely activated. Furthermore, the current study highlighted the importance of developing several versions of the IAT to assess differences in sensitivity and predictive validity. Thus, four versions of the IAT that varied in police categorization (models or symbols) and word categorization (emotional or evaluative) were developed. Mean D scores were negative across all versions of the IAT, indicating that when positive and negative constructs (i.e., good/safety and bad/fear) are pitted against one another, individuals have stronger negative implicit associations with police than positive implicit associations. This finding contests the results from the first previous study but provides clarity in the results from the second previous study. Additionally, the findings from the current study supported the original hypothesis that was developed when beginning this line of research—that is, that individuals would harbor more negative implicit attitudes toward police than positive implicit attitudes.

IAT Version Comparison

When assessing the sensitivity of the four versions of the IAT, the versions comparing police symbols and everyday objects (i.e., symbol police categorization) were more sensitive (i.e., produced stronger D scores) than the versions comparing police models and civilian models (i.e., model police categorization). There were no significant differences between the two types of word categorization (i.e., emotional or evaluative). Comparison of the four versions of the IAT make important contributions to the large field of research implementing modified versions

of the IAT. In this situation, using symbols to represent social groups produced larger D scores than images of members of the social group, as is commonly used in the IAT (e.g., Race IAT). It is possible that the symbol versions of the IAT were assessing policing procedures and the role of police in America, whereas the model versions were assessing police officers specifically. However, the theoretical importance of this distinction is debatable, as police officers, policing procedures, and the occupational role of police are heavily intertwined. Thus, this possibility should be the subject of future research. Additionally, many IATs use evaluative distinctions (i.e., good/bad); however, the findings from the current study indicate that more specific and concrete implicit attitudes can be assessed using the IAT. That is, the IAT versions assessing the emotional dimension (i.e., safety/fear) were similarly sensitive to the IAT versions assessing the evaluative dimension (i.e., good/bad), and hence conclusions can be more specific in that individuals not only have “bad” implicit associations with police, but they also have “fear” implicit associations with police. Although the observed sensitivity differences are interesting, they do not indicate which IAT combination is “best” (i.e., correlates most with explicit attitude measures, has the strongest predictive validity).

One criticism of the IAT is that attitudes measured using this procedure do not correlate strongly with explicit attitude measures. Whereas this is a fair concern, it would also be problematic for implicit measures of any type to perfectly correlate with explicit attitude measures, as the two should be measuring different types of attitudes. Nonetheless, convergent validity of the four versions of the IAT with the explicit attitude measures were assessed, and all versions of the IAT were significantly and positively correlated with the main explicit attitude measure, the POPS, further adding to the literature that has utilized this scale in assessing explicit attitudes toward police (e.g., Nadal et al., 2017; Serpe & Nadal, 2017). Of the four

versions, the models/emotional IAT consistently produced stronger correlations with the explicit attitude measures (i.e., POPS, POPS subscales, safety single-item), except for the fear single-item; however, when compared, the differences in correlations across police categorization were not statistically significant. Thus, all four versions of the IAT are valid measurements in terms of convergent validity; however, some versions were more sensitive (i.e., the symbols versions, as previously stated), the models/emotional IAT produced the most consistent convergent validity, and some versions had better predictive validity (as discussed below).

Predictive Validity of the IATs

Of high importance in the current study was to assess the predictive validity of implicit attitudes as measured by the IATs. As this is one of the first studies to assess predictive validity directly (beyond willingness to cooperate with police), a vignette was created describing a police-civilian encounter. A police-civilian encounter was used to highlight the dyadic perspective of a police-civilian interaction—that is, both police and civilians harbor explicit and implicit attitudes about themselves and one another that are influenced and activated depending on situational influences. To highlight the importance of situational factors, two versions of the vignette were created: one where the police officer is threatened and one where the police officer is not threatened. Participants answered three questions in response to the vignette which ultimately assessed their anticipation of police behavior, their anticipation of police fear, and their anticipated personal support for the police officer if the police officer were to shoot the civilian. The previously used and validated willingness to cooperate with police scale (e.g., Murphy et al., 2014; Sargeant & Kochel, 2018) was also used as an outcome measure.

The ability of each version of the IAT to effectively predict the outcome variables varied. The IAT versions involving the model police categorization were found to be more predictive

than the versions involving the symbol police categorization. To expand, the models IAT (whether with evaluative word categorization, emotional word categorization, or collapsed across word categorization) were collectively predictive of willingness to cooperate, anticipation that the police officer would experience fear when threatened, anticipation that the police officer would shoot when not threatened, and anticipation that the police officer would shoot and experience fear when collapsed across threat and no-threat conditions. In contrast, no outcome variables were significantly predicted by IAT versions involving the symbol police categorization. It should be noted, however, that comparison within the police categorization distinction only yielded one significant difference, and that difference was in predicting anticipated police officer fear when collapsed across vignette. Correlational results suggested that the combination of the model police categorization with the evaluative and emotional categorization indexed implicit attitudes that served different functions—that is, the model/evaluative IAT predicted willingness to cooperate and anticipated police fear, whereas the model/emotional police categorization predicted police shooting behavior. When controlling for explicit attitudes toward police, the model/evaluative IAT remained a significant predictor of willingness to cooperate with police and anticipated police fear. Of the four versions, the ones involving models (versus symbols) police categorization were superior regarding predictive validity, the word categorizations (i.e., emotional or evaluative) combined with the model police categorization differentially predicted the assessed outcome variables, and the models/evaluative IAT predicted outcome measures beyond explicit attitudes toward police.

These findings further highlight the importance of developing several versions of the IAT, as it is possible that different versions serve different functions. In this situation, the IAT versions involving symbols had better sensitivity in assessing implicit associations (i.e., D

scores), whereas IAT versions involving models had better convergent validity and predictive validity (although most of these direct comparisons were not significant). Thus, researchers assessing implicit associations using the IAT should be wary of aiming for large D scores (as produced by the symbols IAT versions in the current study), as the sensitivity of the measure does not necessarily indicate the ability of the measure to correlate with explicit attitudes and predict behavior (as the models IAT versions consistently did in the current study). When attempting to determine which version of the IAT is “best,” social psychologists should be most concerned with convergent and predictive validity. In this case, only one IAT version, the models/emotional IAT, was particularly impressive, as it had consistent convergent validity with explicit attitude measures and effectively predicted one of the most empirically important outcome variables, anticipated police officer shooting behavior. Even so, only the models/evaluative IAT significantly predicted outcome variables after controlling for explicit attitudes toward police. Thus, researchers aiming to assess implicit associations with novel social groups should consider developing and administering multiple IAT versions. In the literature using IATs as the main implicit measure, it appears to be standard practice to rely on the sensitivity of the IAT as a benchmark for whether the IAT is successful (i.e., develop one IAT, find that it is sensitive enough to produce D scores that are significantly different from zero, and use that IAT moving forward). Except for a few studies (e.g., Houben et al., 2010), researchers rarely compare multiple IAT versions. Without this initial comparison, researchers might miss important information. Nonetheless, the findings from the current study and across all versions of the IAT suggest that civilian implicit attitudes toward police are consistently negative (i.e., associating police with fear/bad), correlated with explicit attitude measures, and

effectively predict anticipated cooperation with police, police officer shooting behavior, and feelings of fear among police.

Individual Differences in Implicit Associations

One aim of the previous studies and current study was to assess individual differences in implicit attitudes toward police. Previous research and findings from the previous studies indicated two individual difference variables to be worthy of assessment in the current study: race and political affiliation. In the second previous study post hoc analyses indicated a significant increase in fear construct activation when primed with police among Black individuals. These trends are in line with previous research suggesting a racial difference between Black and White civilians in explicit attitudes toward police (e.g., Nadal et al., 2017; Schuck et al., 2008). The current study was not powered to assess White and Black racial differences as a student population was utilized, thus racial differences comparing White and non-White individuals were assessed. In the versions of the IAT where racial differences were observed, White individuals had more positive implicit associations with police than non-White individuals. This finding was, in general, consistent with the marginally significant findings in the second previous study, where Black individuals experienced increases in fear construct activation when primed with police.

In expansion of the trends observed in the second previous study and informed by previous literature on ideological affiliation (e.g., Janoff-Bulman, 2009; Janoff-Bulman et al., 2008), the current study found political affiliation to be a significant predictor of implicit attitudes, such that more conservative affiliation was predictive of more positive implicit associations with police. These findings provide a foundation for research assessing individual differences in implicit attitudes toward police officers. Future research should aim to assess

individual differences variables using the developed IAT measures with a more heterogeneous sample, as it is possible that there are additional individual difference variables that are of importance but were not able to be assessed in the current study due to lack of sample diversity (e.g., age, media exposure).

The previous studies combined with the current study indicate that there are various ways to assess civilian implicit attitudes toward police. The previous studies propose that implicit attitudes toward police are complex, and in some cases opposing constructs (i.e., fear and safety) can be implicitly associated with police. The current study sought to clarify that pattern by assessing implicit associations in a comparative fashion. In this way, conclusions could be reached about which construct (e.g., safety or fear, good or bad) is more strongly associated with police at the implicit level. Across four versions of the IAT, individuals implicitly associated police with negative constructs (i.e., bad/fear) as opposed to positive constructs (i.e., good/safety). Plotted data from the previous studies, albeit non-significant, highlighted potential individual difference variables that could moderate implicit attitudes toward police. Those visually observed patterns combined with the literature on individual differences in explicit attitudes toward police called for the assessment of individual difference in the current study. Findings the current study confirmed that White individuals and conservatives have more positive implicit attitudes toward police than non-White individuals and liberals. Overall, the studies presented indicate that individuals do have implicit associations with police officers, that these implicit associations are complex, that they can predict anticipated willingness to cooperate with police and anticipated police officer behavior, and that there are individual differences that can produce differences in implicit associations with police.

Intellectual Merit and Broader Impact

This research adds to the social psychological literature that investigates implicit attitudes toward social groups. Using implicit measures was a novel approach to the investigation of attitudes toward police officers among members of the civilian population. Performance on implicit measures depend on the participant cognitively pairing the construct (e.g., safety or fear) with the prime (e.g., police model or civilian model; Bargh, Chaiken, Gollwitzer, & Pratto, 1992). Therefore, constructs and primes that are not cognitively paired will result in decreased performance on the implicit measures, and effectively reveal the current trends in civilian implicit associations with police officers. Some have argued that multiple, opposing concepts or feelings (e.g., happy or sad) can be associated with a single attitude object (e.g., Hemenover & Schimmack, 2007; Hunter, Schellenberg, & Schimmack, 2008), and the findings from the second previous study support this notion. Prior research on attitudes toward police have solely utilized explicit measures, where each affective response can be measured on a separate dimension within participant. The second previous study did investigate the constructs on separate dimensions, but the dimensions were assessed between individuals. The current study began the process of assessing opposing attitudes (i.e., good/safety and bad/fear) and their relative association with an attitude object (i.e., police officers) at the implicit level.

The current study highlighted the importance of determining which concept (i.e., good/safety or bad/fear) is more strongly associated with police, as this concept is more likely to be cognitively accessible and influence behavior in a dyadic interaction with a police officer. That is, the findings from the current study suggest that when in the presence of a police officer, fear implicit associations may be activated and the civilian might in turn expect the police officer to be more likely to use his or her weapon. Furthermore, this anticipation of danger could lead

civilians to experience automatic behavioral responses in an effort to protect themselves, such as running, trying to escape, yelling, etc. The police officer could then interpret these behaviors as threatening or implying guilt and take undue action, leading to a potentially dangerous and quickly escalating situation. Thus, it is important for police officers to be trained with respect to these findings—that is, to be restrained from reacting inappropriately to fear induced automatic responses and to recognize the implications of police presence on implicit construct activation. Using implicit measures to assess cognitive associations and construct activation toward police officers among civilians has provided increased knowledge regarding unconscious associations with police officers and the subsequent behavioral outcomes among civilians.

A deeper understanding of the implicit associations toward police officers will have various broader impacts on society. Knowing which implicit constructs are more strongly activated in the presence of a police officer will be crucial in the development of police officer training programs and intervention programs. For example, the findings from the current study revealed non-White individuals have stronger fear implicit associations police officers than White individuals. With this knowledge in mind, police officers would benefit from awareness of this bias and training that focuses on how to safely handle the potential repercussions of fear construct activation when interacting with non-White individuals (e.g., behavioral responses to anticipation of police misconduct such as urge to run). In addition, police programs would benefit from highlighting the literature on reducing negative implicit biases in their training programs—that is, some interventions that have been known to reduce negative implicit biases include providing bias-inconsistent exemplars (e.g., showing people who fear police officers accounts of police officers helping people), increasing inter-group contact, and cooperative training programs (for reviews see Lai et al., 2014; Paluck & Green, 2009). Police officers could

benefit from this knowledge by striving to make themselves the “bias-inconsistent exemplar” in their community, by prioritizing and effortfully trying to increase positive inter-group contact, and by creating and participating in cooperative training programs. Moreover, the IAT could be implemented before and after the suggested interventions have been implemented as a measure of success.

Limitations

There are several limitations of this research to consider. To begin, the current study was administered in-lab with a college student sample. While this provided assurance that the tasks were being completed without distraction, this also limited the subject pool to consist of solely college students who lack in diversity. Furthermore, the differing results between the first previous study (college sample) and the second previous (online sample) highlight that this is a potentially important issue. Future research should strive to implement the developed IAT versions online to obtain a more heterogenous sample, as was done in the second previous study. Additionally, due to time constraints and feasibility of working with a college student sample, the current study was not accurately powered to assess differences between the threat and no-threat between-subject outcome variable. Ideally 336 eligible participants would have completed the study, but instead the final sample consisted of 252 participants. Thus, the study was effectively powered to assess sensitivity differences among the four versions of the IAT, but Type II errors may have been observed regarding predictive validity due to decreased power. Future research should strive to appropriately power a replication of the current study in a reasonably small time frame (i.e., online recruitment and implementation), as prolonged data collection might introduce the presence of extraneous variables that could influence study findings (e.g., a police brutality incident occurs in the middle of data collection leading to

inaccurate conclusions when pooling data together). Finally, whereas pretests and national demographic statistics indicated the typical police officer to be a White male, it is possible that using models of different ethnicities and genders would have produced different results. Future research should further investigate how individual differences among police officers might influence implicit associations—that is, it is important to establish whether the implicit attitudes observed are specific to White male police officers or generalized to all police officers.

Conclusion

In a society that relies on police to protect civilians, it is distressing that a portion of civilians hold negative explicit, and now empirically supported, implicit attitudes toward police. Without this research, the status of how police officers manifest as cognitive constructs within civilians is unknown. With this research, these cognitive manifestations can be more deeply examined, and their implications can be used as mechanisms for change. The findings from the discussed studies provide a foundation for future research in this area, which should always maintain one definitive goal: to promote positive police-civilian relations and interactions.

Table 1

Means and Standard Deviations of Total Hit Rate across Prime Type and Construct Type in Study 1.

Prime	Safety		Fear	
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>
Police	53	2.43 (1.31)	50	2.18 (1.32)
Civilian	54	1.91 (1.00)	52	2.60 (1.11)

Note. Total *hit* rate represents the total number of word fragment completions that represent the target construct (i.e., construct activation).

Table 2

Correlations Between Implicit Safety Construct Activation when Primed with Police and Explicit Perceptions of Police Measures in Study 1.

Measure	1	2	3	4
1. Safety Activation (with police prime)	–			
2. POPS	-.10	–		
3. General POPS	-.08	.97***	–	
4. Unbiased POPS	-.10	.86***	.70***	–
<i>M</i>	2.43	3.45	3.79	2.41
<i>SD</i>	1.31	0.80	0.77	1.14

Note. Safety activation represents the total number of word fragment completions that represented safety when primed with police. POPS is a composite of all 12 items in the POPS (Nadal & Davidoff, 2015). General POPS and Unbiased POPS are composites of the subscales of the POPS.

*** $p < .001$

Table 3

Correlations Between Implicit Fear Construct Activation when Primed with Police and Explicit Perceptions of Police Measures in Study 1.

Measure	1	2	3	4
1. Fear Activation (with police prime)	–			
2. POPS	-.06	–		
3. General POPS	-.08	.95***	–	
4. Unbiased POPS	.03	.64***	.36**	–
<i>M</i>	2.18	3.28	3.57	2.41
<i>SD</i>	1.32	0.65	0.71	0.89

Note. Fear activation represents the total number of word fragment completions that represented fear when primed with police. POPS is a composite of all 12 items in the POPS (Nadal & Davidoff, 2015). General POPS and Unbiased POPS are composites of the subscales of the POPS.

** $p < .01$

*** $p < .001$

Table 4

Means and Standard Deviations of Total Hit Rate across Prime Type and Construct Type in Study 2.

Prime	Safety		Fear	
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>
Police	91	2.89 (1.23)	108	3.31 (1.41)
Civilian	102	2.52 (1.34)	111	2.92 (1.34)

Note. Total *hit* rate represents the total number of word fragment completions that represent the target construct (i.e., construct activation).

Table 5

Correlations Between Implicit Safety Construct Activation when Primed with Police and Explicit Perceptions of Police Measures in Study 2.

Measure	1	2	3	4
1. Safety Activation (with police prime)	—			
2. POPS	.16	—		
3. General POPS	.17	.98***	—	
4. Unbiased POPS	.10	.91***	.82***	—
<i>M</i>	2.89	3.22	3.46	2.49
<i>SD</i>	1.23	1.05	1.03	1.29

Note. Safety activation represents the total number of word fragment completions that represented Safety when primed with police. POPS is a composite of all 12 items in the POPS (Nadal & Davidoff, 2015). General POPS and Unbiased POPS are composites of the subscales of the POPS.

*** $p < .001$

Table 6

Correlations Between Implicit Fear Construct Activation when Primed with Police and Explicit Perceptions of Police Measures in Study 2.

Measure	1	2	3	4
1. Fear Activation (with police prime)	—			
2. POPS	-.08	—		
3. General POPS	-.06	.97***	—	
4. Unbiased POPS	-.10	.86***	.72***	—
<i>M</i>	3.31	3.06	3.31	2.30
<i>SD</i>	1.41	0.87	0.86	1.12

Note. Fear activation represents the total number of word fragment completions that represented fear when primed with police. POPS is a composite of all 12 items in the POPS (Nadal & Davidoff, 2015). General POPS and Unbiased POPS are composites of the subscales of the POPS.

*** $p < .001$

Table 7

Four Versions of the Police IAT (modified Greenwald et al., 1998).

		<u>Police Categorization</u>	
		Models	Symbols
<u>Word Categorization</u>	Emotional	IAT 1	IAT 3
	Evaluative	IAT 2	IAT 4

Note. The models police categorization involved participants categorizing images of police models versus civilian models. The symbols police categorization involved participants categorizing police-related objects (e.g., police car) and everyday objects (e.g., name tag). The emotional word categorization involved participants categorizing fear-related words and safety-related words. The evaluative word categorization involved participants categorizing good-related words and bad-related words.

Table 8

Means and Standard Deviations of D Scores across Versions of the IAT in the Current Study.

Police Categorization	Evaluative		Emotional	
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>
Models	128	-0.14 (0.42)	124	-0.11 (0.46)
Symbols	124	-0.35 (0.51)	128	-0.32 (0.49)

Note. Negative D scores indicate a stronger implicit association between police models/police symbols and bad/good in comparison to civilian models/everyday objects and good/safety.

Table 9

Internal Consistency of the Versions of the IAT in the Current Study.

Police Categorization	Evaluative		Emotional	
	<i>n</i>	<i>r</i>	<i>n</i>	<i>r</i>
Models	128	.52***	124	.56***
Symbols	124	.69***	128	.63***

Note. Internal consistency was determined by computing the correlation between the first combined task (Blocks 3/6) and the second combined task (Block 4/7) for each version of the IAT. Correlation coefficients for each version of the IAT are presented above.

*** $p < .001$

Table 10

Correlations Displaying Convergent Validity Between Implicit Measures and Explicit Measures in the Current Study.

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. IAT 1	–														
2. IAT 2		–													
3. IAT 3		.46***	–												
4. IAT 4	.58***			–											
5. Models IAT	1.00***	1.00***	.46***	.58***	–										
6. Symbols IAT	.58***	.46***	1.00***	1.00***	.52***	–									
7. Emotional IAT	1.00***	.46***	1.00***	.58***	.72***	.77***	–								
8. Evaluative IAT	.58***	1.00***	.46***	1.00***	.74***	.74***	.44***	–							
9. First IAT	.77***	.76***	.69***	.80***	.76***	.75***	.70***	.77***	–						
10. Second IAT	.74***	.64***	.79***	.75***	.69***	.77***	.75***	.67***	.45***	–					
11. POPS	.32***	.18*	.22*	.27**	.25***	.24***	.26***	.22***	.14*	.35***	–				
12. General POPS	.29**	.19*	.20*	.24**	.24***	.22***	.23***	.21***	.12	.34***	.98***	–			
13. Unbiased POPS	.32***	.12	.20*	.27**	.22***	.23***	.25***	.19**	.15*	.30***	.83***	.68***	–		
14. Explicit Safety	.24**	.21*	.26**	.23*	.23***	.24***	.24***	.22***	.18**	.29***	.76***	.78***	.55***	–	
15. Explicit Fear	-.09	-.18*	-.27**	-.11	-.14*	-.20**	-.17**	-.16*	-.14*	-.18**	-.48***	-.47***	-.40***	-.49***	–
<i>M</i>	-0.11	-0.14	-0.32	-0.35	-0.12	-0.34	-0.22	-0.24	-0.21	-0.25	3.25	3.61	2.18	3.56	2.42
<i>SD</i>	0.46	0.42	0.49	0.51	0.44	0.50	0.48	0.48	0.50	0.46	0.78	0.80	0.95	1.09	1.12

Note. Participants did not complete all four versions of the IAT, thus blank cells represent IAT combinations that did not exist in the study design. IAT 1 refers to the models/emotional combination. IAT 2 refers to the models/evaluative combination. IAT 3 refers to the symbols/emotional combination. IAT 4 refers to the symbols/evaluative combination. Models IAT and Symbols IAT are collapsed across words. Emotional IAT and Evaluative IAT are collapsed across police. First IAT and Second IAT are collapsed across version.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 11

Correlations Displaying Known-Groups Validity Between Implicit Associations and Political Affiliation in the Current Study.

Measure	1	2	3	4	5	6	7	8	9	10	11
1. IAT 1	–										
2. IAT 2		–									
3. IAT 3		.45***	–								
4. IAT 4	.57***			–							
5. Models IAT	1.00***	1.00***	.45***	.57***	–						
6. Symbols IAT	.57***	.45***	1.00***	1.00***	.51***	–					
7. Emotional IAT	1.00***	.45***	1.00***	.57***	.71***	.77***	–				
8. Evaluative IAT	.57***	1.00***	.45***	1.00***	.74***	.73***	.44***	–			
9. First IAT	.77***	.75***	.67***	.80***	.76***	.74***	.70***	.76***	–		
10. Second IAT	.74***	.63***	.78***	.75***	.69***	.77***	.75***	.67***	.44***	–	
11. Political Affiliation	.38***	.22*	.16	.31***	.30***	.23***	.25***	.26***	.23***	.29***	–
<i>M</i>	-0.09	-0.14	-0.32	-0.32	-0.12	-0.32	-0.21	-0.23	-0.20	-0.24	3.40
<i>SD</i>	0.47	0.43	0.49	0.51	0.45	0.50	0.49	0.48	0.50	0.47	1.42

Note. The correlations displayed above exclude individuals who responded “Don’t Know, Haven’t Thought” to the political affiliation measure ($n = 22$). Participants did not complete all four versions of the IAT, thus blank cells represent IAT combinations that did not exist in the study design. IAT 1 refers to the models/emotional combination. IAT 2 refers to the models/evaluative combination. IAT 3 refers to the symbols/emotional combination. IAT 4 refers to the symbols/evaluative combination. Models IAT and Symbols IAT are collapsed across words. Emotional IAT and Evaluative IAT are collapsed across police. First IAT and Second IAT are collapsed across version.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 12

Correlations Between Outcome Measures and Explicit Attitudes Toward Police Measures in the Current Study.

Measure	1	2	3	4	5	6	7	8	9	10
1. Cooperation	—									
2. Threat: Police Shoot	-.32***	—								
3. Threat: Police Fear	.05	.17	—							
4. Threat: Police Support	.13	.28**	.39***	—						
5. No-Threat: Police Shoot	-.03				—					
6. No-Threat: Police Fear	.07				.15	—				
7. No-Threat: Police Support	.14				.19*	.14	—			
8. Combined: Police Shoot	-.16**							—		
9. Combined: Police Fear	.04							.31***	—	
10. Combined: Police Support	.10							.39***	.40***	—
11. POPS	.49***	-.45***	.11	.20*	-.34***	-.01	.14	-.36***	.04	.14*
12. General POPS	.50***	-.41***	.11	.18*	-.28**	-.03	.08	-.33***	.03	.10
13. Unbiased POPS	.36***	-.45***	.09	.20*	-.37***	.04	.24**	-.35***	.07	.21***
14. Explicit Safety	.45***	-.36***	.05	.13	-.17	-.08	.21*	-.28***	-.05	.10
15. Explicit Fear	-.24***	.34***	.09	.00	.30***	.04	.08	.32***	.10	.07
<i>M</i>	3.88	3.36	3.52	2.88	2.39	2.73	1.78	2.88	3.13	2.34
<i>SD</i>	0.89	0.92	0.91	1.09	1.06	0.91	1.09	1.10	0.10	1.22

Note. Participants completed one version of the vignette (threat or no-threat), thus blank cells represent combinations that did not exist in the study design. The combined measures are collapsed across both versions of the vignette. Correlations between the explicit attitudes toward police measures (i.e., POPS, General POPS, Unbiased POPS, Explicit Safety, Explicit Fear) are provided in Table 10.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 13

Correlations Displaying the Predictive Validity of the IAT in the Current Study.

Measure	1	2	3	4	5	6	7	8	9	10
1. Cooperation	—									
2. Threat: Police Shoot		—								
3. Threat: Police Fear			—							
4. Threat: Police Support				—						
5. No-Threat: Police Shoot					—					
6. No-Threat: Police Fear						—				
7. No-Threat: Police Support							—			
8. Combined: Police Shoot								—		
9. Combined: Police Fear									—	
10. Combined: Police Support										—
11. IAT 1	.06	-.10	-.03	-.08	-.28*	-.09	.03	-.20*	-.08	-.06
12. IAT 2	.26**	-.16	-.25*	.12	.10	-.09	-.01	-.08	-.20*	-.02
13. IAT 3	.11	-.24	.02	-.02	-.05	-.03	.15	-.11	.01	.07
14. IAT 4	.03	-.07	.02	.18	-.07	.09	.14	-.07	.05	.14
15. Models IAT	.16*	-.13	-.12	.01	-.09	-.09	.01	-.14*	-.14*	-.04
16. Symbols IAT	.08	-.16	.01	.08	-.06	.03	.14	-.09	.03	.11
17. Emotional IAT	.07	-.17	.03	-.05	-.15	-.03	.08	-.15*	-.00	.01
18. Evaluative IAT	.15*	-.11	-.13	.15	.01	-.02	.07	-.07	-.10	.06
19. First IAT	.07	-.10	-.03	.07	-.08	-.08	.08	-.10	-.07	.05
20. Second IAT	.16*	-.19*	-.07	.03	-.06	.04	.07	-.12*	-.03	.02
<i>M</i>	3.88	3.36	3.52	2.88	2.39	2.73	1.78	2.88	3.13	2.34
<i>SD</i>	0.89	0.92	0.91	1.09	1.06	0.91	1.09	1.10	1.00	1.22

Note. Participants did not complete all four versions of the IAT and completed one version of the vignette (threat or no-threat), thus blank cells represent combinations that did not exist in the study design. The combined measures are collapsed across both versions of the vignette. IAT 1 refers to the models/emotional combination. IAT 2 refers to the models/evaluative combination. IAT 3 refers to the symbols/emotional combination. IAT 4 refers to the symbols/evaluative combination. Models IAT and Symbols IAT are collapsed across words. Emotional IAT and Evaluative IAT are collapsed across police. First IAT and Second IAT are collapsed across version. Correlations between the IAT tasks are provided in Table 10; correlations between the outcome variables are provided in Table 12.

* $p < .05$

** $p < .01$

*** $p < .001$

Figure 1. Safety and fear construct activation when primed with police or civilians in Study 1.

Figure 2. Strength of safety and fear construct activation when primed with police or civilians, broken down by gender in Study 1.

Figure 3. Fear construct activation when primed with police or civilians in relation to socioeconomic status (centered) in Study 1, where higher numbers indicate higher childhood family income.

Figure 4. Safety construct activation when primed with police or civilians in relation to socioeconomic status (centered) in Study 1, where higher numbers indicate higher childhood family income.

Figure 5. Safety and fear construct activation when primed with police or civilians in Study 2.

Figure 6. Safety and fear construct activation when primed with police or civilians in relation to race in Study 2.

Figure 7. Fear construct activation when primed with police or civilians in relation to political affiliation (centered) in Study 2, where higher numbers indicate more conservative affiliation.

Figure 8. Safety construct activation when primed with police or civilians in relation to political affiliation (centered) in Study 2, where higher numbers indicate more conservative affiliation.

Figure 9. Safety and fear construct activation when primed with police or civilians in relation to gender in Study 2.

Figure 10. Fear construct activation when primed with police or civilians in relation to socioeconomic status (centered) in Study 2, where higher numbers indicate higher childhood family income.

Figure 11. Safety construct activation when primed with police or civilians in relation to socioeconomic status (centered) in Study 2, where higher numbers indicate higher childhood family income.

Figure 12. Racial differences in explicit attitudes toward police in Study 2, where higher values indicate more favorable attitudes on a 5-point scale.

Figure 13. Racial differences in implicit attitudes toward police (i.e., D Scores) for the emotional IAT collapsed across police categorization type in the current study, where lower values indicate a stronger implicit association between police and fear than police and safety.

Figure 14. Racial differences in explicit attitudes toward police in the current study, where higher values indicate more favorable attitudes on a 5-point scale.

Figure 15. Differences in implicit attitudes toward police (i.e., D Scores) based on political affiliation for the emotional IAT collapsed across police categorization type in the current study, where lower D scores indicate a stronger implicit association between police and fear than police and safety and lower political affiliation scores represent more Liberal political affiliation than Conservative political affiliation.

Figure 16. Gender differences in implicit attitudes toward police (i.e., D Scores) for the symbol/evaluative IAT in the current study, where lower values indicate a stronger implicit association between police symbols and bad than police symbols and good.

Figure 17. Differences in implicit attitudes toward police (i.e., D Scores) based on socioeconomic status (centered) for the symbols/evaluative IAT in the current study, where lower D scores indicate a stronger implicit association between police symbols and bad than police and good and higher socioeconomic status scores represent higher childhood family income.

Appendix A

Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003)*Instructions:*

Below are a number of personality traits that may or may not apply to you. Please indicate the extent to which you believe each pair of traits applies to you, even if one characteristic applies strongly than the other.

Scale:

Disagree Strongly	Disagree Moderately	Disagree A Little	Neither Agree Nor Disagree	Agree A Little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

Items:

Extraverted, enthusiastic.

Critical, quarrelsome.

Dependable, self-disciplined.

Anxious, easily upset.

Open to new experiences, complex.

Reserved, quiet.

Sympathetic, warm.

Disorganized, careless.

Calm, emotionally stable.

Conventional, uncreative.

Appendix B

Math Computation Problems*Instructions:*

Next you will complete a series of math computation problems. Before each math computation problem, you will see a picture. The picture will signal that the math computation problem is about to be presented. When the math computation problem is presented, your task is to complete the math computation problem as quickly as possible by solving for "X". For example, if the math problem " $X + 3 = 5$ " were presented, you might complete the problem by entering "2." You will have 30 seconds to complete each problem.

Prime Items: *Math Computation Problems:*

$$9 + X = 15$$

$$X / 7 = 1$$

$$X + 9 = 18$$

$$X / 2 = 4$$

$$8(X) + 3 = 75$$

$$X / 5 = 7$$

$$7(X) + 7 = 56$$

$$X + 4 = 10$$

$$9 + X = 13$$

$$5 + 4(X) = 13$$

Appendix C

**Word Fragment Completion Task (modified Johnson & Lord, 2010; Vargas,
Sekaquaptewa, & von Hippel, 2007)**

Instructions:

Next you will complete a Word Fragment Completion Task. Before each word fragment, you will see a picture. The picture will signal that the word fragment is about to be presented. When the word fragment is presented, your task is to complete the word fragment as quickly as possible. For example, if the word fragment "S P O _ _" were presented, you might complete the word as "S P O O N." Type the first word that fits the fragment that comes to mind, and do so as quickly as possible.

Prime Items:

Category	Items
Police
Civilian

*Word Fragments:*Safety:

Comfort
(C _ _ _ O R T)

Peace
(P E _ _ E)

Protection
(P R _ _ E _ T I O N)

Relief
(R E _ I E _)

Safety
(S _ _ E T Y)

Secure
(S E _ U _ _)

Shelter
(S H _ _ T E R)

Fear:

Panic
(P A N _ _)

Concern
(C O N _ _ _ N)

Scared
(S _ _ R E D)

Terror
(T E _ _ _ R)

Worry
(W O R _ Y)

Horror
(H O R _ _ _)

Dread
(D R _ _ D)

Filler:

T _ P _
P _ _ N E
C _ M P _ _ T
D _ _ R

A _ T _ R
T _ N E
S H _ L _
F R _ _ T

S _ M P _ _
B R _ _ Z E
T _ _ T E

B _ _ K
E X _ E _ _
S _ D _

Appendix D

Perceptions of Police Scale (POPS; Nadal & Davidoff, 2015)*Instructions:*

Please rate the degree to which you agree with the following statements.

Scale:

I Strongly
Disagree

1

2

3

4

I Strongly
Agree

5

Items (used in previous studies 1 and 2 and in the current study):

Police officers are friendly.

Police officers protect me.

Police officers treat all people fairly.

I like the police.

The police are good people.

The police do not discriminate.

The police provide safety.

The police are helpful.

The police are trustworthy.

The police are reliable.

Police officers are unbiased.

Police officers care about my community.

Additional Items (used in the current study):

Police officers make me feel safe.

I am afraid of the police.

Appendix E

Relationship with Police*Instructions:*

Please consider your personal relationships with people who are police officers. Please answer the following questions about your relationships with people who are police officers. That is, do not compare your relationships to other people's relationships with people who are police officers—just focus on your own.

Items:

How many close relationships do you have with people who are police officers (enter number)? If you do not have a close relationship with a person who is a police officer, you may enter "0."

Response: Fill-in-the-blank response

What is your relationship with the people who are police officers? If you have a close relationship with more than one person who is a police officer, you may indicate multiple responses.

Response Options: Family, Friend, Significant Other, Other (fill-in-the-blank option)

On average, how close are your relationships with people who are police officers?

Scale:

Not Close At All					Very Close
1	2	3	4	5	

Appendix F

Experience with Police*Instructions:*

Please consider your personal encounters with people who are police officers. Please answer the following questions about your personal encounters with people who are police officers. That is, do not compare your personal encounters to other people's personal encounters with people who are police officers—just focus on your own.

Items:

How many unpleasant encounters have you had with people who are police officers (enter number)? If you have not had an unpleasant encounter with a person who is a police officer, you may enter "0."

Response: Fill-in-the-blank response

On average, how unpleasant have your encounters with people who are police officers been?

Scale:

Not Unpleasant At All					Very Unpleasant
1	2	3	4	5	

Appendix G

Demographic Questionnaire*Items:*

What is your gender/sex?

Response Options: Male, Female, Other, I prefer not to answer

What is your current age (in years)?

Response: Fill-in-the-blank response

What is your year in college?

Response Options: Freshman, Sophomore, Junior, Senior, Other (fill-in-the-blank option)

What is your academic major?

Response: Fill-in-the-blank response

What racial/ethnic group do you most identify with? Please select from the following categories. You will have the opportunity to provide your own nuanced identity in the next question.

Response Options: American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander, White or European American, Other, Multi-racial/Mixed, I prefer not to answer

What is your racial/ethnic group identification? You can provide any response that best describes you.

Response: Fill-in-the-blank response

Where were you born?

Response Options: United States, Other, I prefer not to answer

How many years have you lived in the United States?

Response: Fill-in-the-blank response

Is English your first language?

Response Options: Yes, No

How Fluent are you in English?

Scale:

Not At All						Extremely
1	2	3	4	5	6	7

Which of the following best describes the type of neighborhood where you have lived for the majority of your life?

Response Options: Rural, Suburban, Small City, Big City

Appendix H

Subjective Social Class

Participants will complete a version of the Subjective Social Class measure (Adler, Epel, Castellazzo, Ickovics, 2000) that has been modified to assess subjective social class during one's childhood in the country in which he or she lived.

Item:

Think of this ladder as representing where people stand in the country you lived in as a child. If you lived in several countries, please think of the country you lived in longest.

At the **top** of the ladder are the people who are best off—those who have the most money, the most education, and the most respected jobs. At the **bottom** are the people who are the worst off—those who have the least money, least education, and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

Where would you place your family on this ladder?

Please indicate the rung where you think your family stood/stands, relative to other people in the country. Please indicate only **one** rung.

Appendix I

Objective Social Class*Item:*

Please indicate the category that would describe your family annual income during childhood.

Response Options: < \$15,000, \$15,001 - \$25,000, \$25,001 - \$35,000, \$35,001 - \$50,000, \$50,001 - \$75,000, \$75,001 - \$100,000, \$100,001 - \$150,000, or > \$150,000.

Appendix J

**Liberal-Conservative Self-Identification Scale (American National Election Studies
[ANES], 2012)**

Item:

Here is a 7-point scale on which the political views that people hold are arranged from extremely liberal to extremely conservative. Where would you place yourself on this scale, or haven't you thought about this much?

Response Options: Extremely Liberal, Liberal, Slightly Liberal, Moderate/Middle of Road, Slightly Conservative, Conservative, Extremely Conservative, Don't Know, Haven't Thought

Appendix K

Implicit Association Test

Participants completed two versions of the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) that have been modified to assess implicit emotional (i.e., safety or fear) and evaluative (i.e., good or bad) associations with police models (i.e., police or civilian models) and police symbols (i.e., police objects or everyday objects).

Instructions (for the first categorization task):

Put your middle or index fingers on the E and I keys of your keyboard. Words representing the categories at the top will appear one by one in the middle of the screen. When the item belongs to a category on the left, press the E key; when the item belongs to a category on the right, press the I key. Items belong to only one category. If you make an error, an X will appear - fix the error by hitting the other key. This is a timed sorting task. **GO AS FAST AS YOU CAN** while making as few mistakes as possible. Going too slow or making too many errors will result in an uninterpretable score. This task will take about 5 minutes to complete.

IAT Version 1: police categorization (models) and word categorization (emotional):

Category	Items
Safety	Comfort, Peace, Protection, Relief, Secure, Shelter
Fear	Panic, Scared, Terror, Worry, Horror, Dread
Police
Civilian

IAT Version 2: police categorization (models) and word categorization (evaluative):

Category	Items
Good	Cheer, Excitement, Joyful, Magnificent, Lovely, Adore, Cherish, Joyous
Bad	Despise, Sadness, Grief, Horrific, Disaster, Ugly, Annoy, Rotten
Police
Civilian

IAT Version 3: police categorization (symbols) and word categorization (emotional):

Category	Items
Safety	Comfort, Peace, Protection, Relief, Secure, Shelter
Fear	Panic, Scared, Terror, Worry, Horror, Dread
Police Objects
Everyday Objects

IAT Version 4: police categorization (symbols) and word categorization (evaluative):

Category	Items
Good	Cheer, Excitement, Joyful, Magnificent, Lovely, Adore, Cherish, Joyous
Bad	Despise, Sadness, Grief, Horrific, Disaster, Ugly, Annoy, Rotten
Police Objects
Everyday Objects

Appendix L

Anticipated Police Officer Behavior*Instructions:*

Please read the following paragraph carefully:

Scenario (Threat):

In an area of the city where an above average number of arrests were made over the past year, a vehicle was pulled over by a police officer for reckless driving. The incident took place at 11:00 PM. As the officer, Joseph Walker, approached the car, he heard a child crying in the back seat. When he reached the car, he asked the driver to roll down his window, but he refused, despite repeated requests to do so. Officer Walker returned to his police car to call for backup, but when he was halfway back to his car he heard a noise behind him. He turned to see the driver of the car walking towards him with a hammer in his hand.

Scenario (Non-threat):

In an area of the city where an above average number of arrests were made over the past year, a vehicle was pulled over by a police officer for reckless driving. The incident took place at 11:00 PM. As the officer, Joseph Walker, approached the car, he heard a child crying in the back seat. When he reached the car, he asked the driver to roll down his window, but he refused, despite repeated requests to do so. Officer Walker returned to his police car to call for backup, but when he was halfway back to his car he heard a noise behind him. He turned to see the driver of the car running off down the road.

Items:

How likely do you think it is that the officer will fire his gun at the suspect?

Scale:

Not Likely At All	Slightly Likely	Moderately Likely	Very Likely	Almost Certainly
1	2	3	4	5

How frightened do you think the officer would be in this situation?

Scale:

Not At All	Slightly	Moderately	Very	Extremely
1	2	3	4	5

If the officer did shoot the suspect, would you support this action?

Scale:

Not At All

1

2

3

4

Very Much

5

Appendix M

Cooperation with Police (e.g., Murphy, Mazerolle, & Bennett, 2014; Sargeant & Kochel, 2018)

Instructions:

Please indicate how likely you would be to...

Scale:

Very Unlikely					Very Likely
1	2	3	4	5	

Items:

call police to report a crime?

help police find someone suspected of committing a crime by providing them with
information?

report dangerous or suspicious activities to police?

assist police if asked?

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EDUCATION:

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Cumulative GPA: 4.0

Bachelor of Arts in Psychology • Disability Studies Minor

Graduation: May 2016

Shippensburg University of Pennsylvania

Cumulative GPA: 3.978 • Major GPA: 4.0 • Minor GPA: 4.0

GRANTS AND AWARDS:

Grants:

Graduate Student Organization Travel Grant, Syracuse University (2018-2019)

Project Title: *An Investigation of Emotional and Evaluative Implicit Associations with Police Using Four Versions of the Implicit Association Test*

Amount: \$500

Graduate Student Organization Travel Grant, Syracuse University (2017-2018)

Project Title: *Priming Police: Implicit Safety and Fear Construct Activation among Civilians*

Amount: \$500

Psychology Department Travel Grant, Syracuse University (2017-2018)

Project Title: *Priming Police: Implicit Safety and Fear Construct Activation among Civilians*

Amount: \$500

Undergraduate Research Grant, Shippensburg University of Pennsylvania (2015-2016)

Project Title: *Perceived Academic Pressure and Time Allocation Differences among NCAA Female Volleyball Athletes and Non-Athletes*

Amount: \$1,066

Summer Undergraduate Research Experience, Shippensburg University of Pennsylvania (2015)

Project Title: *Exploration of Accessibility on Common Capacities of Shippensburg University's Campus*

Amount: \$750

Undergraduate Research Grant, Shippensburg University of Pennsylvania (2014-2015)

Project Title: *The Relationship between Risky Behavior, Perceived Stress, and Support Systems Among NCAA Athletes*

Amount: \$526

Undergraduate Research Grant, Shippensburg University of Pennsylvania (2013-2014)

Project Title: *The Relationship between Parent-Child Attachment, Peer Group Competence, and Individual Friendship Competence*

Amount: \$330

Academic Honors and Awards:

SPSP Graduate Travel Award (\$500), Society for Personality and Social Psychology (2018)

Outstanding Teaching Assistant Award, Syracuse University (2018)

Certificate in University Teaching, Syracuse University (2018)

William H. Mackaness Psychology Award, Shippensburg University of Pennsylvania (2016)

Student-Athlete of the Year Award, Shippensburg University of Pennsylvania (2016)

Library Research Award (\$750), Shippensburg University of Pennsylvania (2016)

Academic Honors and Awards Continued:

- 2016 College Swimming Coaches Association of America Scholar All-America Honorable Mention** (2016)
2016 Academic All-America Women's At-Large Third Team for Division II (2016)
2016 Capital One Academic All-District II Women's At-Large Team (2016)
Phi Kappa Phi, Honor Society, Shippensburg University of Pennsylvania (2015-2016)
Phi Sigma Pi, National Honor Fraternity, Shippensburg University of Pennsylvania (2013-2016)
2015 Capital One Academic All-District Women's At-Large Squad (2015)
Library Research Award (\$500), Shippensburg University of Pennsylvania (2015)
2014 College Swimming Coaches Association of America Scholar All-America Honorable Mention (2014)

RESEARCH PUBLICATIONS:

PUBLISHED:

- Griffith, J.D., Gassem, M., Hart, C.L., Adams, L.T., & **Sargent, R.** (2018). A cross sectional view of fear of death and dying among skydivers. *Omega: Journal of Death and Dying*, 77, 173 -187.
- Aberizk, K., Newman, L.S., & **Sargent, R. H.** (2017). Attributional complexity and the illusory correlation: A test of the Inverted-U hypothesis. *North American Journal of Psychology*, 19(3), 601-620.
- Shawver, Z., Griffith, J.D., Adams, L.T., Evans, J., Benchoff, B., & **Sargent, R.** (2015). An examination of the WHOQOL-BREF using four popular data collection methods. *Computers in Human Behavior*, 55, 446-454.

IN PRESS:

- Zheng, R., **Sargent, R. H.**, Griffith, J. D., Adams, L. T., Kline, E., & Hughes, J. (in press). A cross-cultural investigation of early memories using Amazon's Mechanical Turk: Comparing the early memories of American and Indian turkers. *Journal of Cognition and Culture*.

PROFESSIONAL CONFERENCE PRESENTATIONS:

INTERNATIONAL:

- Sargent, R. H.**, & Newman, L. S. (2019, February). *An Investigation of Emotional and Evaluative Implicit Associations with Police Using Four Versions of the Implicit Association Test*. Poster will be presented at the 2019 Society for Personality and Social Psychology Annual Convention, Portland, OR.
- Caselli, A., **Sargent, R. H.**, Newman, L. S., VanderDrift, L. E., & Murphy-Stanley, A. B. (2019, February). *Changes in Anticipated Police Officer Behavior in the Presence of White or Black Civilians*. Poster will be presented at the 2019 Society for Personality and Social Psychology Annual Convention, Portland, OR.
- Sargent, R. H.**, & Newman, L. S. (2018, March). *Priming Police: Implicit Safety and Fear Construct Activation among Civilians*. Poster presented at the 2018 Society for Personality and Social Psychology Annual Convention, Atlanta, GA.

INTERNATIONAL CONTINUED:

Corsbie-Massay, C. L., & **Sargent, R. H.** (2018, March) *A Methodological Review of Selfie Studies in Social Psychology*. Poster presented at the 2018 Society for Personality and Social Psychology Annual Convention, Atlanta, GA.

Sargent, R. H., Huber, K., & VanderDrift, L. (2017, July). *Emotional Disclosure and Trait Self-Control: Implications for Relationship and Basic Need Satisfaction*. Poster presented at the 2017 International Association for Relationship Research Mini-Conference, Syracuse, NY.

Sargent, R., & Griffith, J. (2016, May). *Time Allocation and Sexual Behavior Differences between Collegiate Female Volleyball Athletes and Non-Athletes*. Poster presented at the Association for Psychological Science Convention, Chicago, IL.

Sargent, R., & Griffith, J. (2015, May). *Perceived Pressures and Time Allocation Differences among NCAA Female Volleyball Athletes*. Poster presented at the Association for Psychological Science Convention, New York, NY.

Seibert, A. & **Sargent, R.** (2015, May). *Attachment and Friendship: The Mediating Role of Peer Competence*. Poster Presented at the Association for Psychological Science Convention, New York, NY.

REGIONAL:

Guzman, I., & **Sargent, R. H.** (2018, May). *Investigation of the Police Prototype in the United States*. Poster presented at the Social Psychologists Around Western New York Conference, Buffalo, NY.

Sargent, R. H., & Newman, L. (2017, August) *Civilian Attitudes Toward Police: Assessing Safety and Fear Construct Activation*. Talk presented at the Social Psychologists Around Western New York Conference, Rochester, NY.

Sargent, R., & Zaccagnini, C. (2015, November). *Investigation of Perceived Accessibility among Shippensburg University Students with Disabilities and the Impact on University Students and of Secondary Students Transitioning to College Settings*. Poster presented at the Pennsylvania Association Council for Exceptional Children 56th Annual Convention, Harrisburg, PA.

Sargent, R., & Griffith, J. (2015, March). *Coach Influences on Daily Stressors Among NCAA Female Volleyball Athletes*. Poster presented at the Eastern Psychological Association Conference, Philadelphia, PA.

Sargent, R., & Seibert, A. (2014, March). *The Relationship between Parent-Child Attachment, Peer Group Competence, and Individual Friendship Competence*. Presented at the Eastern Psychological Association Conference, Boston, MA.

LOCAL:

Guzman, I., & **Sargent, R. H.** (2018, May). *The Police Prototype in the United States*. Poster presented at the Department of Psychology 25th Annual Poster Session, Syracuse University, Syracuse, NY.

Sargent, R., & Griffith, J. (2016, April). *Differences in Time Allocations and Sexual Behavior among Athletes and Non-Athletes*. Symposium presented at the Minds@Work Conference, Shippensburg University of Pennsylvania, Shippensburg, PA.

LOCAL CONTINUED:

Sargent, R., & Zaccagnini, C. (2015, August). *Exploration of Accessibility on Common Capacities of Shippensburg University's Campus*. Poster presented at the Success Now Exposition, Shippensburg University of Pennsylvania, Shippensburg, PA.

Sargent, R., Diltz, K., Hosefelt, S., Becker, P., Parisi, W., & Zaccagnini, C. (2015, April). *Investigation of Physical Accessibility on Shippensburg University's Campus*. Poster presented at the Minds@Work Conference, Shippensburg University of Pennsylvania, Shippensburg, PA.

Sargent, R., & Griffith, J. (2015, April). *Observed Stresses and Time Allocation Differences among NCAA Female Volleyball Athletes*. Poster presented at the Minds@Work Conference, Shippensburg University of Pennsylvania, Shippensburg, PA.

Sargent, R., Nelson, K., Bonsall-Gaffney, A., Martin, A., Bega, S., & Zaccagnini, C. (2015, April). *Investigation of Perceived Accessibility among Shippensburg University Students with Disabilities*. Poster presented at the Minds@Work Conference, Shippensburg University of Pennsylvania, Shippensburg, PA.

Seibert, A. & **Sargent, R.** (2015, April). *Mother Attachment and Peer Relationships: The Mediating Role of Peer Competence*. Poster Presented at the Minds@Work Conference, Shippensburg University of Pennsylvania, Shippensburg, PA.

PROFESSIONAL AFFILIATIONS:

Society for Personality and Social Psychology (SPSP)

PROFESSIONAL AND UNIVERSITY SERVICE:

SERVICE TO THE FIELD:

Ad Hoc Reviewer- Journal of Black Studies

SERVICE TO THE UNIVERSITY:

Committee Member- Student Communications Advisory Committee, October 2018-Present
Syracuse University

- Nominated committee member
- Member of the advising body to Dara Royer, the senior Vice President and Chief of Communications Officer at Syracuse University

Committee Member- Student Health Insurance Program Oversight Advisory Committee, October 2018-Present
Syracuse University

- Appointed committee member
- Member of the advising committee to oversee the successful transition in health insurance programming for graduate students

Committee Member- Sesquicentennial Celebration Steering Committee, November 2017-Present
Syracuse University

- Elected representative of the Graduate Student body
- Participated as a committee member in preparations for the 150th Celebration

SERVICE TO THE UNIVERSITY CONTINUED:

- Travel Grant Application Reviewer-** *Graduate Student Organization,* September 2018-Present
Syracuse University
- Appointed to review graduate student travel grant applications on criteria such as, ability to clearly and concisely present student work to a lay audience, opportunity for professional development, and quality of letter of recommendation
 - In collaboration with other reviewers, awarded graduate student travel grant funding according to the aforementioned criteria
- Invited Speaker-** *Office of Professional and Career Development Programming,* October 2018
Syracuse University
- Developed and presented session on *Teaching Controversial Topics* in collaboration with Kathleen Huber
- Invited Speaker-** *2018 Teaching Assistant Orientation,* Syracuse University August 2018
- Developed and presented session on *Creating Your Teaching Persona* in collaboration with Morgan Proulx and Kathleen Huber
- Teaching Mentor-** *Graduate School Teaching Assistant Orientation,* May 2018-August 2018
Syracuse University
- Participated in planning of Teaching Assistant Orientation scheduling and programming
 - Small group leader where direct advice and guidance regarding teaching technique will be provided
 - Provided ease and comfort first-year Teaching Assistants
- Peer Note Taker-** *Office of Disability Services,* Syracuse University January 2018-May 2018
- Closely monitored and recorded materials to be provided as an accommodating service for students with disabilities.
- Program Assistant-** *Disability Studies Minor,* August 2014- May 2016
Shippensburg University of Pennsylvania
- Coordinated and implemented events relating to Disability Studies through the Disability Studies Minor. Maintained enrollment records and organized Minor files and proposals.
 - Worked effectively with the Disability Studies Minor Director, and competently completed all assigned tasks. Acted as a mediator between the Disability Studies Minor Director and the Disability Studies Minor declared students.
- Mentor-Mentee Committee Chair -** *Honors Program,* August 2014- May 2016
Shippensburg University of Pennsylvania
- Demonstrated leadership skills by planning and initiating 3 annual events
 - Successfully matched returning Honors Program students with first-year Honors Program Students
 - Communicated proficiently with the Honors Program Director and Honors Program office staff
- Advisor-** *Honors Program,* Shippensburg University of Pennsylvania August 2013- May 2016
- Advised first-year Honors Program members regarding academic goals and course plans.
- Mentor-** *Honors Program,* Shippensburg University of Pennsylvania August 2013- May 2016
- Provided mentorship and guidance to first-year Honors Program members.
- Orientation Leader-** Shippensburg University of Pennsylvania June 2015
- Operated first-year Orientation procedure
 - Provided guidance in regard to the process of selecting courses
 - Successfully eased and comforted first-year students and their families/friends

SERVICE TO THE UNIVERSITY CONTINUED:

- Peer Note Taker**-*Office of Disability Services*, Shippensburg University of Pennsylvania August 2013- May 2015
- Closely monitored and recorded course material to be provided as an accommodating service for students with disabilities.
- Recruiter**- *Honors Program*, Shippensburg University of Pennsylvania August 2013-May 2014
- Represented the Honors Program at Open House sessions. Effectively answered questions and eased concerns of prospective students and their families.
- Group Leader**- *ESTEEM*, Shippensburg University of Pennsylvania May 2013; May 2014
- Provided direction for adolescent women interested in science.

TEACHING EXPERIENCE:

INSTRUCTOR OF RECORD:

- PSY 313: Introduction to Research Methodology**, Syracuse University May 2018-June 2018
- Instructor of Record for course (13 students)
 - Developed course, including the syllabus, lectures (4 sessions per week), activities, assignments, and examinations
 - Executed lectures and activities
 - Implemented assignments and examinations
- PSY 274: Social Psychology**, Syracuse University July 2017- August 2017
- Instructor of Record for course (12 students)
 - Developed course, including the syllabus, weekly lectures, activities, assignments, and examinations
 - Presented weekly lectures and activities
 - Implemented assignments and examinations

TEACHING ASSISTANT:

- PSY 313: Introduction to Research Methodology**, Syracuse University August 2017-May 2018;
August 2019-Present
- Supervisors: Dr. Amy Criss and Dr. Michael Kalish
 - Primary instructor for twelve laboratory sections (~240 students)
 - Executed weekly lectures and activities
- PSY 205: Foundations of Human Behavior**, Syracuse University August 2016-May 2017
- Supervisor: Dr. Shannon Houck
 - Primary instructor for seven recitation sections (~175 students)
 - Developed and presented weekly lectures and activities

GUEST LECTURER:

- PSY 313: Introduction to Research Methodology**, Syracuse University February 2018
- Instructor: Dr. Amy Criss
 - Presented lecture on *Descriptive Statistics*
- PSY 313: Introduction to Research Methodology**, Syracuse University February 2018
- Instructor: Dr. Amy Criss
 - Presented lecture on *Sampling Procedures in Psychological Research*

GUEST LECTURER CONTINUED:

PSY 393: Personality, Syracuse University

November 2016

- Instructor: Dr. Stanislav Treger
- Developed and presented lecture on *Intelligence and Personality*

TEACHING AND PROFESSIONAL DEVELOPMENT:

WiSE Future Professionals Program (FPP), Syracuse University

October 2017-Present

- Appointed and accepted into the Women in Science and Engineering (WiSE) FPP
- Training is targeted to prepare women for careers in STEM fields through professional development seminars, professional portfolio development, coaching/mentoring experience, etc.

Future Professoriate Program (FPP), Syracuse University

September 2017-Present

- Faculty Liaison: Dr. Shannon Houck
- Appointed and accepted into the FPP
- Training is targeted to prepare students for future faculty positions
- I was awarded a Certificate in University Teaching upon completion of the program (May 2018)

CAMPUS INVOLVEMENT:

Graduate Student Organization, Syracuse University (2016-Present)

Psychology Action Committee, Syracuse University (2016-Present)

Phi Kappa Phi, Honor Society, Shippensburg University of Pennsylvania (2015-2016)

Disability Awareness Club, Shippensburg University of Pennsylvania (2015-2016)

Phi Sigma Pi, National Honor Fraternity, Shippensburg University of Pennsylvania (2013-2016)

Tau Kappa, Women's Athletic Sorority, Shippensburg University of Pennsylvania (2013-2016)

Swim Team, Shippensburg University of Pennsylvania (2012-2016)

Honors Program, Shippensburg University of Pennsylvania (2012-2016)

LEADERSHIP EXPERIENCE:

Senator At-Large- Graduate Student Organization (GSO), Syracuse University

May 2018-Present

- Elected representative of the Graduate Student body
- Participated as a voting Senator At-Large in GSO monthly meetings and business
- Served on the Travel Grant Committee

Vice President of Internal Affairs- Graduate Student Organization (GSO),
Syracuse University

July 2017-May 2018

- Served as Chair of the GSO Senate
- Maintained the records of academic plans, Senators, and GSO committees
- Oversaw GSO committee activity and elected University Senators
- Managed the registration and maintained communication with GSO recognized student organizations

Senator- Graduate Student Organization (GSO), Syracuse University

August 2016-May 2017

- Participated as a Senator in GSO monthly meetings and business

GSO Representative- Psychology Action Committee (PAC),
Syracuse University

August 2016-May 2017

- Maintained communication between the GSO and the PAC

LEADERSHIP EXPERIENCE CONTINUED:

President-Disability Awareness Club, August 2015- May 2016

Shippensburg University of Pennsylvania

- Successfully established the club on campus
- Organized and developed events and goals for the club
- Served as a leadership figure to the members of the club
- Established Disability Awareness on campus

President-Phi Sigma Pi, Shippensburg University of Pennsylvania May 2015- May 2016

- Maintained efficient and informative weekly meetings
- Leader of over 60 members
- Effectively corresponded with Chapter Consultants, members of the National Staff, and Faculty Advisors
- Worked efficiently with an executive board of 8 members to ensure a successful year

Captain- Swim Team, Shippensburg University of Pennsylvania August 2015- February 2016

- Communicated effectively with swim team members and fellow Captains.
- Acted as a mediator between the team and the coach
- Coordinated team activities and fellowship events

COMMUNITY ENGAGEMENT

Intern- Olney Counseling Center, Olney, M.D. August 2014- May 2016

- Participated in and observed individual counseling sessions.
- Worked closely with owners on various projects, including a weight loss support group program.
- Completed various administrative tasks, including handling confidential materials and communicating directly with consumers.

Volunteer- New Horizons Mental Health Agency, Chambersburg, P.A. January 2013- May 2013

- Effectively communicated and developed bonds with consumers of New Horizon's mental health services.

Volunteer- Drew Michael Taylor Foundation, Shippensburg, P.A. August 2012- December 2012

- Organization dedicated to helping families who are grieving the loss of a family member. Provided support by delivering food to the weekly support meetings.
- Worked closely with program Directors to spread awareness of grief and the grieving process.