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Implicit Racial Attitude, Hostile Attribution Bias, and the Desire to Enter Law Enforcement: Exploring Possible Relationships

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IMPLICIT RACIAL ATTITUDE, HOSTILE ATTRIBUTION BIAS, AND THE DESIRE TO ENTER LAW ENFORCEMENT: EXPLORING POSSIBLE RELATIONSHIPS

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Title: Implicit Racial Attitude, Hostile Attribution Bias, and the Desire to Enter Law Enforcement: Exploring Possible Relationships

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This study explored racial attitudes of participants seeking to enter law enforcement in an attempt to shed light on the strained relations between law enforcement and minority communities. Mean levels of implicit racial bias and hostile attribution error within a group of individuals that indicated their intentions of pursuing careers in law enforcement was compared to mean levels of the same constructs as measured within a group of individuals that indicated no such intentions, as well as analyzed levels of implicit racial bias and hostile attribution error for correlations. The Race Implicit Association Test was administered in order to measure levels of implicit racial bias, while the Hostile Interpretations Questionnaire was administered to measure levels of hostile attribution bias. A significantly higher mean level of implicit racial bias was found in those who intended to pursue a law enforcement career as compared to those who claimed no such intentions.

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CHAPTER I

LITERATURE REVIEW

Academic interest precipitated by the civil unrest of the 1960s era United States has yielded a considerable amount of research aimed at measuring and understanding the public's perceptions of the police force over the past half-century. The civil rights movement of Black Americans during the 1960s was marked by heightened tensions between the majority White population and African Americans. This racial tension, born of the disparate treatment of minority groups by White Americans of the era is evident in the early literature describing attitudes toward and held by the police (Balch, 1972; Black & Reiss, 1970; Cross, 1964; Lefkowitz, 1975; Johnson, 1941; Reiss & Black, 1967; Rokeach, Miller, & Snyder, 1971; Schleifer, Derbyshire, & Martin, 1968; Wilson, 1961). Subsequently, the degree of focus on race as a key predictor for attitudes towards the police in the academic cannon has varied with the zeitgeist of the times, yet race has consistently been cited as an important factor in the literature through the present day (Drakulich, 2013; Lai & Zhao, 2010; Rosenfeld, Rojek, & Decker, 2011; Twersky-Glassner, 2005; Wu, Lake, & Cao, 2015; Zimney, 2015). Indeed, one of the most reliable predictors of attitudes regarding the police is the race of the individual assessed (Weitzer & Tuch, 2005).

African American citizens and the law enforcement institutions they interact with have long shared a difficult relationship; African American communities tend to perceive the police as racially biased (Brunson, 2007; Gau, & Brunson, 2010; Lee, Steinberg, & Piquerom, 2010; Parker, Onyekwuluje, & Murty, 1995; Weitzer & Tuch, 2005; Wu, 2014), and subsequently prone to frequently treating them unfairly and harshly, while White Americans tend to claim to be unaware of or minimize any differences in how the police interact with the two races (Alegria,

2014; Weitzer & Tuch, 2005; Wu, 2014). African Americans have consistently reported higher levels of distrust of the police than White Americans (Barlow & Barlow, 2002; Brunson, 2007; Weitzer, 1999, 2000, 2002; Weitzer & Tuch, 2002). This trust gap likely has roots in a variety of sources, and springs from an overwhelming belief among African Americans that policing is commonly biased against them (Weitzer & Tuch, 2005). Weitzer and Tuch's (2005) survey found that fully three-quarters of African Americans believed that the police in their city treated African Americans poorly compared to White Americans, and that racial profiling by police was pervasive in their city. The majority of African Americans surveyed also viewed police prejudice as a major problem, and more than a third indicated that they had personally been treated unfairly by the police, as opposed to only one percent of White Americans. Indeed, police have historically been far more likely to release White suspects in the field rather than to arrest them and refer them to court in comparison to their handling of African American suspects (Bishop & Frazier, 1988; Black & Reiss 1970; Dannefer & Schutt, 1982).

Barlow and Barlow (2002) conducted a survey of African American police officers, arguing that they would be better informed to properly identify racial profiling due to their special job related knowledge of it. The survey found that more than two thirds of African American police officers indicated that they had been racially profiled by police officers or agencies seeking to determine their potential criminality at some point in their lives, with more than a quarter experiencing profiling within the past 12 months. Further, it was found that the respondents with the darkest skin had experienced the most profiling.

The views that African Americans hold concerning the magnitude of the problem of racially biased law enforcement are almost universally rejected by White Americans. Weitzer and Tuch (2005) showed that while both Black and White Americans strongly believed that

police should treat all races equally, fully three quarters of White Americans held that racially biased policing was not occurring in their communities, and only one third thought police engaged in racial profiling. White Americans who did report that they believed that the police engaged in racially biased practices tended to hold the view that the police had acted in only a mildly prejudiced manner. The authors noted "for most whites, racial discrimination in general, and police discrimination in particular, is not a serious problem in America" (Weitzer & Tuch, 2005, p. 1025).

This stark discrepancy in how White and African America U.S. citizens view police is examined at a more macro level by Weitzer and Tuch (2005). The authors extended Blumer's (as cited in Weitzer & Tuch, 2004) group-position model of race relations, which aims to explain intergroup racial attitudes, to include group relations to social institutions, in that the opinions of the members of a racial group should be influenced by whether the group collectively sees an institution as threatening or allied with their interests. The authors found that the dominant social group, White Americans, perceived the police as their cultural allies, while minority populations more often saw the police as an institution that worked to subordinate them. White Americans may feel that their group interests are indirectly threatened by criticism of the police by minority groups, in that the criticism may lead to reform that weakens crime control. This may partially explain the reluctance of the majority of White Americans to believe that the police treat other groups unfairly, and for the tendency of the minority of White individuals who do indicate that there is a racially biased policing problem to minimize the problems importance (Weitzer & Tuch, 2004).

Culturally, the severity of the tension between African Americans and the police appears to fluctuate over time, and is likely driven, at least in part, by generational sentiments and the

population's overall awareness of the recent interactions between the groups. Relations between the two parties have recently been tumultuous, initially propelled by an incident in February of 2012, when George Zimmerman, a neighborhood watch captain, shot and killed African American teenager Trayvon Martin and claimed it was self-defense. No criminal charges were initially brought against Zimmerman. In response Martin's parents posted a petition for justice on Change.org which quickly acquired more than a million signatures and first attracted the national media's attention.

Exactly one month after Martin's death, protests demanding justice for him broke out in cities across the U.S. With public pressure mounting and the media spotlight shining brightly on them officials charged Zimmerman with Second Degree Murder in April of 2012. George Zimmerman was subsequently acquitted of any criminal culpability in the death of Martin, which had already sparked outrage throughout the African American community (Solis, Vorwerck, Friedman, & Bacon, 2013). The anger in the Black community, already stoked by the fact that officials had initially neglected to charge Zimmerman, and by his trial's ultimate outcome, produced further protests in many major U.S. cities, and inspired the formation of the social justice movement Black Lives Matter (Solis et al., 2013; "What We Believe," n.d.).

Black Live Matter has worked successfully to ensure that alleged injustices against African Americans by the police do not go unnoticed by the national media ("What We Believe," n.d.). Following the 2013 Martin case, America appears to have entered into a new era of elevated tensions between the African American community, White Americans, and the police. Multiple high profile deaths of typically young and unarmed African Americans, often caused by the actions of police officers has garnered widespread media attention, and has inspired large and mostly peaceful demonstrations in many cities. Unfortunately, in Ferguson Missouri in 2014,

and Baltimore Maryland in 2015, these deaths and the subsequent tensions between the police and the Black community have also brought about some of the worst periods of civil unrest in decades (Matthews, 2014; Stolberg & Babcock, 2015).

Research Rationale

The present-day tensions between law enforcement and African Americans is a major national issue with important, and sometimes dire consequences. These tensions are greatly exacerbated by the disagreement between the Black and White communities with regard to police conduct towards minorities. Given the differences described in the forgoing regarding how White and Black Americans view the problem of racial biases in policing, it is likely that the large White majorities in many police forces across the nation contribute to institutional and individual insensitivities regarding the disparate treatment perceived or experienced by members of the African American community. As such, it stands to reason that the possible causes for the differences in perceptions should be closely examined in order to provide data that could potentially inform hiring decisions, personal reviews and training, and promote a greater understanding between the police and the public that may ultimately lead to a reduction in the animus, promote social justice, and reduce violence.

One area of research that has potential to inform the issue, and the aim of this project, is the study of implicit racial attitudes of people that intend to obtain a career in law enforcement. While White Americas typically hold explicit views that they are not racially biased, and believe that racial biases in policing do not occur, or that any impact from them is minor (Weitzer & Tuch, 2004; Weitzer & Tuch, 2005), they (and at least 17 other assessed ethnicities, excluding only African Americans) also consistently display implicit preferences for White Americans and biases against African Americans on measures of implicit racial attitudes (Nosek, Greenwald, &

Banaji, 2007). These implicit racial attitudes appear to begin to form in children as young as six years old, and appear relatively stable over long periods of time (See Baron & Banaji, 2006; Dasgupta, McGhee, Greenwald & Banaji, 2000; Greenwald, McGee, & Schwartz, 1998; Nosek et al. 2007; Schmidt & Nosek, 2009).

From the above it is clear that White and African Americans do not agree about the magnitude of the problem of racial biases in policing, which contributes to tensions. It is a possibility that part of the discrepancy between the groups' perceptions may be a result of the well-established differences in their implicit racial attitudes. The majority of America's police force is comprised of White male officers, and therefore the above mentioned research would strongly suggest that it harbors a collective implicit bias against Black Americans, however the available data provides no information about possible differences in the magnitude of collective racial biases between demographically similar Americans in other unrelated professions and the police. Given the magnitude of the discord between African Americans and the police, and the general public's awareness of the fraught nature of the relationship, it is plausible that law enforcement careers may be attracting applicants with higher levels of implicit racial biases than might be found in otherwise demographically similar peers attracted to other career paths. Specifically, this study will seek to determine if and to what extent individuals that intend to begin law enforcement careers vary on levels of implicit racial attitudes as compared to a control group comprised of college students.

The Police Personality

Personality as defined by the American Psychological Association (APA) refers to "individual differences in characteristic patterns of thinking, feeling and behaving. These patterns tend to be consistent and relatively stable over time" (APA, 2015). There has long been

an effort to identify a personality profile common to police officers, or a *police personality*. In early research and popular culture the police personality was commonly thought to include high levels of authoritarianism, suspiciousness, loyalty, secretiveness, self-assertiveness, cynicism, prejudice, and distrust of the unusual (Balch, 1972; Lefkowitz, 1975; Twersky-Glasner, 2005). In recent times the traits most typically underpinning the police personality construct include bravery, machismo, cynicism, and aggression, but many of the older above traits are still strongly perceived to be associated with it as well (Twersky-Glasner, 2005).

In Lefkowitz's (1975) comprehensive review of the prolific police personality literature of the 1960's and early 1970's it was found that much of it was based upon only the opinions of the authors. Some of these opinions were informed by the authors' personal experiences with policing, while other opinions had a less clear genesis. Overtime these opinions became ingrained in both academic works and popular culture. Gould (2000) found past work on identifying a police personality to be deeply flawed in three major aspects. The first problem is that each negative trait identified as part of the construct has been viewed as distinct and separate, when they would be more correctly viewed as parts of a multidimensional whole. The second failing is little attention has been paid to the genesis or development over time of the police personality. Finally, past research has failed to correlate personality traits with behavior when using performance evaluations as the criterion.

Pre-employment Screening of Police Personality Characteristics

Twersky-Glasner (2005) argues that while a widely accepted empirically defined police personality construct does not yet exist, it is possible to identify what is not included in the typical personality of police recruited in recent decades. According to Twerksy-Glasner (2005) this ability is due to the use of psychological personality testing by most police departments prior

to hiring candidates for the purpose of screening out unsuitable candidates. This testing is typically conducted by psychologists using well validated and reliable measures including the MMPI-2, the Inwald Personality Inventory (IPI), and the California Personality Inventory (CPI). According to Twersky-Glasner (2005) virtually every candidate accepted after being psychologically assessed would not have high levels of aggression, anti-social tendencies, hostility, impulsivity, lack of autonomy, or immaturity. They also would typically not have a high potential to develop drug or alcohol problems, emotional lability, social introversion, paranoia, or psychosis. However Twersky-Glasner (2005) does not present any empirical evidence for his belief in the nearly ubiquitous use of properly administered and well validated measures by police departments nationwide, nor does he present evidence that police departments reliably reject applicants with certain personality traits in a uniform manner.

Dantzker (2011) presents data that strongly challenges Twersky-Glasner's (2005) assertion that one can know what traits are not included in the personalities of current police offers due to the pre-employment assessment process. He states that as of 2009 only 31 of the 50 U.S. states required pre-employment psychological screening of police recruits. While this does indicate that a great number of police candidates are indeed being assessed prior to employment, it sheds no light on how many are not screened in the remaining 19 states where there is no requirement in place. Dantzker (2011) further states that there is no nationally recognized recommended assessment battery for the pre-employment screening of police applicants, and that there is no sign that a consensus will be reached in the near future.

Super (2006) surveyed psychologists who conducted assessments for 478 federal, state, and local law enforcement agencies. He found that the most commonly used measures were the IPI, CPI, MMPI-2, Personality Assessment Inventory (PAI), and the Wonderlic Personality Test.

In their review of police prescreening research Lough and Ryan (2006) hold that the MMPI-2 and the CPI are the most widely used pre-employment screening tools, and that past research on both measures' ability to predict future police performance as indicated by police performance ratings has been mixed, ranging from finding significant correlations with performance ratings to no correlation at all (see also Cortina, Doherty, Schmitt, Kaufman, & Smith, 1992; Davis et al. 1999; Simmers, Bowers, & Ruiz, 2003; Tarescavage et al. 2015a; Tarescavage et al. 2015b).

Lough and Treuer (2013) reviewed the validity of the most commonly used instruments for prescreening police candidates and concluded that "no best practice instrument for the selection of police officers exists at this time" (p. 746) and that the "MMPI research is equivocal at best, and research with the CPI and IPI is limited" (p. 746). Lough and Ryan's (2006) review yielded no consensus about the ideal personality profile for police officers. Further, the authors found that the research they analyzed offered disparate conclusions on how to interpret the results of measures, stating that "different aspects of different scales predict different things for different researchers" (Lough & Ryan, 2006, p.16).

In sum, it appears that accurate data concerning the percentage of police recruits that undergo psychological assessment prior to their hiring is not tracked across much of the nation, and that recruits often are, but perhaps sometimes are not, prescreened using a combination of a variety of personality measures that can vary dramatically between agencies and between test administrators. Indeed, there remains no consensus on the best practices for selecting the measures administered, nor is there widespread agreement upon an ideal police personality profile, or upon the predictive interpretation of the results of even the most commonly used assessments (see Caillouet, Boccaccini, Varela, Davis, & Rostow, 2010; Dantzker, 2011; Davis et al. 1999; Lorr & Strack, 1994; Lough & Von Treuer, 2013; Lough & Ryan, 2006; Sarchione et

al. 1998; Super, 2006). Thus, it appears that Twersky-Glasner's (2005) view that we can know what is not included in the personality of a police officer's personality at recruitment may be an overstatement.

Origins and Development of the Police Personality

Another important area of police officer personality research aims to identify a genesis of shared personality traits among officers and/or their possible development over time. Lefkowitz (1975) in reviewing dozens of studies found that nearly none of them were methodologically sound enough to support their inferences regarding the genesis or longitudinal shaping of any shared character traits. As mentioned above, Gould's (2000) study, conducted twenty-five years after Lefkowiz's conclusions, found that a lack of sound research in the area of police personality development and origins continued to be a major deficiency of the literature. Although this research has sometimes been criticized as lacking empirical support, theories of the development and origins of the police personality have emerged, and will be briefly reviewed.

Twersky-Glasner (2005) reviewed the three dominant theories seeking to explain the development and origin of the police personality. The first theory, the predispositional model, is that shared pre-existing and relatively stable psychological characteristics bias individuals to seek a career in law enforcement. The second theory, the sociological model, posits that the police personality develops after an officer joins the police force as a result of occupational socialization. The final theory described by Twersky-Glasner (2005) is the anthropological model, which holds that the police occupational subculture is unique, and provides them with a working a personality. This working personality develops out of a sense of other police officers being trustworthy and safe, and the view that outsiders (laypersons) are potentially dangerous, which is reinforced by the nature of police training.

There appears to be no consensus regarding which theory provides the best explanation. Gould (2000) found some support for the idea that the personality traits associated with policing develop after joining the department. The author repeatedly assessed several hundred newly hired police officers beginning during their first week of training, again six months after their hire date, and then annually, concluding after they completed forty-two months of employment. The measures Gould (2000) used included the MMPI-2, Niederhoffer's cynicism scale, and measures of alcohol and tobacco consumption. He found that initially the police recruits' results were similar to the normative sample, but that an obvious trend emerged "which indicates that the personality characteristics of the officers start to change shortly after their induction into the policing environment. With rare exceptions, the personality characteristics of the officers reveal a trend in which the officers tend to become more cynical, more paranoid, more depressed, angrier, more dominant and more hostile the longer they are in the policing environment" (Gould, 2000, p. 50).

Twersky-Glasner (2005) posits that aspects of all three theories of police personality origins and development may be involved in the formation of the police personality. For example, people with certain traits may be initially predisposed to the idea of becoming a police officer, and current police officers, who may value traits similar to their own, may find these applicants more desirable, which could further increase their odds of being hired. These newly hired police officers may then begin their careers sharing some similar traits, these similar traits may then be strengthened by the sociological aspects of the occupation, while these same forces work to simultaneously weaken dissimilar traits. Finally, beliefs such as only other members of their organization can be reliably trusted, and that outsiders should be viewed with suspicion may further develop the shared traits common to police officers. Over time this confluence of

predispositional traits, biases in hiring, occupational socialization, and the internal culture of police organizations ultimately gives rise to a typical psychological profile that can be operationalized as the police personality construct (Twersky-Glassner, 2005).

Implicit and Explicit Attitudes

According to Greenwald and Banaji (1995, p. 5) the "signature of implicit cognition is that traces of past experience affect some performance, even though the influential earlier experience is not remembered in the usual sense." By this the authors are indicating that unlike experiences associated with explicit cognition which rely upon accurate introspection, earlier experience associated with implicit cognition cannot be summoned via self-report or by introspection. As an example of the phenomenon of implicit cognition the authors discuss a sentence completion task, in which participants are shown a list of words with little emphasis placed on them, and then later are tasked with completing words with missing letters. Participants tended to complete the words they had been casually shown earlier at much higher rates than words they had not, even though they had very poor ability to directly or explicitly recall which they had previously seen (Greenwald & Banaji, 1995).

Attitude is a long established and well-studied construct in social psychology. Frequently cited definitions of attitude date back to Thurstone (1931) who defined it as "the affect for or against a psychological object," and Allport (1935) who described the construct as "a mental or neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related." While these definitions do not outright reject an unconscious or implicit component of attitude, the vast majority of studies of the construct through the mid 1990's relied exclusively on explicit measures at the expense of any implicit component (Greenwald & Banaji, 1995). Unlike explicit or self-

reportable cognition, which can be measured directly or indirectly, it is a theoretical requirement that implicit cognition be measured indirectly if it is to be measured at all. Indirect measures differ from direct measures in that by their nature they do not inform the participant of what they are measuring, nor do they ask that the participant provide self-report (Greenwald & Banaji, 1995).

The construct of implicit attitudes has been defined by Greenwald and Banaji (1995, p. 8) as "introspectively unidentified (or inaccurately identified) traces of past experience that mediate favorable or unfavorable feeling, thought, or action toward social objects." Like explicit attitudes, implicit attitudes are under the control of automatically activated evaluation, however the constructs differ in that the actor is not thought to be aware of the implicit attitude's impact on their subsequent judgments or actions (Greenwald, et al. 1998). Implicit attitudes can be used to explain how attitudes generated by one condition can be attributed to another, they can be conceptualized "as an existing attitude projected onto a novel object" (Greenwald & Banaji, 1995, p. 5).

Historically, the predictive validity of attitudes has been built upon the strength of the relationship between attitude and behavior, and these strong effects are detectable even when the participant is paying no attention to the attitude (Greenwald & Banaji, 1995). As mentioned above, indirect measures must be used to assess implicit cognition. In the case of implicit attitudes most research is conducted with measures that are reactive in addition to being indirect. They are typically reactive in the sense that the participant is aware that something is being assessed, and indirect in that what the participant believes is being measured and what is being inferred by the researcher differ.

Greenwald and Banaji (1995) describe how an implicit attitude may be inferred from a measure by explaining that an implicit attitude regarding a construct may be indirectly indicated

by an explicit (direct) measure of another construct. The ability to make such an inference may occur when both constructs share some characteristics that predispose the implicit relationship. One example of this phenomenon can be illustrated by a hypothetical comparison of the number of words a participant can generate that indicate pleasure (such as, good, fun, love, great) when shown images of things that are typically described as cute within a given culture (perhaps kittens, puppies, babies, and so forth), to the number of words indicating pleasure that they are able to produce when given the same time limit, but shown only repulsive images (for example, rotting meat). The constructs of pleasant words and cuteness can be expected to share characteristics that predispose an implicit relationship in that they are both associated with pleasurable experiences. If our understanding of the constructs' shared characteristics is accurate pleasant words should be readily available to describe cute images, and be less readily available (as measured by the time it takes to generate them) for repulsive images. Because of this predisposed implicit relationship between constructs, if the example participant is shown to be able to generate a significantly higher number of words describing pleasantness for the cute images than for the repulsive images, one can infer that the explicit measure of the construct of total word count is reflecting a more positive attitude towards the cute images. Greenwald and Banaji (1995) note that the results may indicate discordance between the implicit and explicit attitudes of the participant, that is, the indirect measures of attitude may contradict data from explicit measures of attitude, which they feel lends support to the importance of the implicit attitude construct.

Several researchers take issue with the terms implicit and explicit when describing the attitude construct in this context. Fazio and Olson (2003) argue that the word implicit has historically been used in social psychology to imply that the actor lacks any awareness of the construct. The authors argue that the present measures for implicit attitudes do not indicate whether

or not the person is aware of their positive or negative attitudes toward an object. Indeed, there remains an unsettled debate concerning the conceptualization of implicit and explicit attitudes as separate constructs. Support has been offered for them being separate but related constructs (see Greenwald et al., 2009; Nosek & Smyth, 2007), and arguments for why this should not yet be declared empirically established have also been articulated (see Schwarz & Bohner, 2001).

Further, discordance between explicit and implicit attitude assessment results alone cannot be taken as a guarantee that the implicit attitude is unconscious or fully its own construct, as the discrepancy may merely indicate that the participant may prefer to conceal or reject an attitude that they feel may be viewed as undesirable (Fazio & Olson, 2003; Gawronski, Hofmann, & Wilbur, 2006). Because of the current level of scientific uncertainty regarding the characteristics that the term implicit attitudes may imply, Fazio and Olson (2003) argue that it is really the indirect measure that ought to be thought of as implicit rather than the attitude, because the measures truly are implicit in the sense that they can assess a participants attitude without explicitly soliciting the desired information (for the purposes of this study the term implicit attitude will refer to inferences about attitudes derived from indirect measures of attitude).

Regardless of whether or not the implicit attitude construct is eventually generally accepted to be a distinct construct and irrespective of the construct's future status as a conscious or unconscious process (or perhaps as some amalgamation of the two), implicit measures of attitude appear to have the potential to yield valuable information (Greenwald & Banaji, 1995; Greenwald, et al. 1998; Fazio & Olson, 2003; Nosek et al., 2007). Perhaps what is the most interesting aspect of indirect measures of attitude is their propensity to sometimes reveal attitudes that are discordant with the results of explicit self-report measures. Indeed, it is this propensity that makes testing whether police candidates significantly differ from a control group a potentially informative study.

The Implicit Association Test

Beginning in the mid 1990's measures of implicit cognition have rapidly garnered a great deal of attention from academic researchers (Blanton & Jaccard, 2008; Fazio & Olson, 2003; & Hofmann, Gawronski, Gschwendner, & Schmitt, 2005) and, primarily due to the efforts of Project Implicit (https://implicit.harvard.edu, 2015), from many members of the public. These measures, although still in their infancy, have quickly made large contributions to the cannon of social cognition. The Implicit Association Test, a computerized measure, was developed by Greenwald et al. (1998) in order to "measure implicit attitudes by measuring their underlying automatic evaluation" (p. 1494), and has subsequently become the most widely administered and studied measure of implicit attitudes (Blanton & Jaccard, 2008; Hofmann et al., 2005; Xu, Nosek, & Greenwald, 2014).

Greenwald et al. (1998) explains the nature of the IAT's administration and the mechanism by which it measures implicit attitudes. In the IAT a subject responds to a series of items that are to be classified into four categories – typically, two representing a concept discrimination such as *wasps* versus *butterflies* and two representing an attribute discrimination such as *fearful* versus *calm* valence. Subjects are asked to respond rapidly with a right-hand key press to items representing one concept and one attribute (e.g., *wasps* and *calm*), and with a left-hand key press to items from the remaining two categories (e.g., *butterflies* and *fearful*). Subjects then perform a second task in which the key assignments for one of the pairs is switched (such that *wasps* and *fearful* share a response, likewise *butterflies* and *calm*). The IAT produces measures derived from latencies of responses to these two tasks. These measures are interpreted in terms of association strengths by assuming that subjects respond more rapidly when the

concept and attribute mapped onto the same response are strongly associated (e.g., *butterflies* and *calm*) than when they are weakly associated (e.g., *wasps* and *calm*).

The Race IAT

The basic format of the IAT as described above has been made openly available to researchers who have subsequently programmed it to assess for the strength of a wide variety of hypothesized automatic associations (for examples of different IAT measures made freely available see Project Implicit's (subsequently referred to as PI) list at https://implicit.harvard.edu/implicit/selectatest.html). The IAT perhaps most salient to the aims of this study is the Race IAT, in which the four categories that participants must classify include images of African (labeled as Black) faces versus European (labeled as White) faces, and two categories of words representing a positive or negative attribute discrimination valence. Significantly higher error rates or slower responding when tasked with pairing words with positive discrimination valence (for example, words such as beautiful, friendly, kind) and African American faces are taken to indicate the task runs counter to the automatic evaluations of the test taker.

Nosek et al. (2007, p. 167) describe the *D* scoring algorithm that Greenwald, Nosek, and Banaji (2003) developed for the IAT, as involving the calculation of "the difference in average response latency between the two sorting conditions and dividing by the standard deviation of all latencies for both sorting tasks." *D* scores can be positive or negative, and what can be inferred from their direction depends upon the particular IAT being used. For the Race IAT a positive *D* score is representative of an automatic preference for White faces. The method for determining *D* is extremely similar to how the more commonly seen Cohen's *d* is calculated, differing only in that "the standard deviation in the denominator of *D* is computed from the scores in both

conditions, ignoring the condition membership of each score" while *d* "is a pooled within-treatment standard deviation." (Greenwald et al. 2003, p. 201).

The Race IAT has been the subject of intense academic interest, and a vast trove of data from millions of online volunteers has been continuously collected via the Project Implicit website since 2002. All of the data collected is freely available for analysis via Open Science Framework (available at https://osf.io/52qxl/). There have been several large analyses conducted on this data over the past decade. Nosek et al. (2007) analyzed Race IAT data collected on the PI website from July, 2000, through May, 2006, providing a total sample size of 732,881. Schmidt and Nosek (2010) analyzed PI's Race IAT data from September of 2006 through May of 2009 which yielded a sample size of 479,405. Both the Schmidt and Nosek (IAT D = .34, d = .76) and Nosek et al. (IAT D = .37, d = .86) analyses found that respondents overall had an implicit preference for White Americans over Black Americans. All reported ethnicities, with the exception of African Americans, implicitly preferred White Americans, with White Americans showing the strongest implicit bias in both studies (d = 1.00, Nosek et al. 2007). African Americans were found to lack any significant implicit preference in both analyses (d = -.05, Nosek et al. 2007).

Reliability and Validity of the IAT

The IAT is something of a rarity among implicit measures in that has consistently been shown to possess generally satisfactory levels of internal consistency and test-retest reliability, which other implicit measures have historically had difficulty achieving (Nosek et al. 2007). Internal consistency estimates have typically been reported to range from .7 to .9 (Greenwald & Nosek, 2001; Nosek et al. 2007). Test-retest reliability would be expected to be high provided the measure is actually measuring the traits of individuals rather than their present state. In

Nosek et al.'s (2007) review the IAT as reported across nine studies evaluating the test-retest reliability of the IAT found the measure possesses a median value of $r = .56$.

The IAT has been found to be a robust measure in that it is able to provide relatively stable results even when variations to the typical procedure are made. These variations have included changes to the number of trials and time intervals between trials (Greenwald, et al. 2009). The IAT has also been repeatedly shown to be difficult for test takers to manipulate in order to achieve desired results. For example, on separate occasions researchers have asked participants to fake positive attitudes towards homosexuals, African Americans, and low levels of anxiety during a stressful job screening. In all cases participants were readily able to comply with the evaluators request on explicit measures, but none were able to substantially hide their implicit attitudes as assessed by the IAT (see Banse, Seise, & Zerbes, 2001; Greenwald et al. 2009) The difficulty in influencing IAT scores makes the prospect of its use across a variety of settings in which there may be an incentive to manipulate the results potentially lucrative (Chugh, 2004; Greenwald et al. 2009).

Greenwald et al. (2009) conducted a meta-analysis of 122 research articles that used some version of the Implicit Association Test (IAT) to predict judgment, behavioral, and physiological criteria. As one might expect, the authors found that the discordance between explicit and implicit attitude measures was the highest when assessing the most socially sensitive topics, specifically racial attitudes, and the lowest when the topic was the least socially consequential. More interestingly, the authors also found that across all domains assessed, the IAT and self-report measures each predicted criterion variance that the other did not, and subsequently the use of both increased incremental validity in all cases. In the very socially sensitive domains of racial and intergroup behavior, the self-report measure had extremely low

predictive validity, and the incremental validity of combining it with the IAT was high. Next, in the case of racial attitudes, the predictive validity of the IAT was significantly better than that of the self-report measure. The authors concluded by stating that the totality of their review's findings supports their issuing of a recommendation to use the IAT and self-report measures in combination in order to more accurately predict behaviors.

Greenwald et al.'s (2009) analysis of the IAT's predictive validity has been accused of artificially inflating the predictive power of the IAT (Oswald, Mitchell, Blanton, Jaccard, and Tetlock, 2013). Greenwald, Banaji, and Nosek (2015) published a comment in response that vigorously defended Greenwald et al's (2009) methodology and conclusions, but included the caution that because the test-retest reliability of the IAT has sometimes been found to be only moderate, and because the effect size of the IAT's predictive validity has ranged from small to moderate the IAT may presently possess too high of an error rate for use in decision making regarding individuals. The authors subsequently call for further research before any definitive conclusions can be reached. Greenwald et al. (2015) goes on to explain that while any test-retest reliability and effect size problems of the IAT are maximized when attempting to predict at the individual level, these problems are substantially reduced as the sample size increases. Indeed, the authors argue that these difficulties completely cease to be problematic at larger samples sizes, making the Race IAT ideal for predicting discrimination at the system-level, where racial biases of a small to medium effect size would be predictive of substantial and consequential amounts of discriminatory behaviors.

The findings in the Greenwald, et al. (2009) meta-analysis are strongly supportive of the use of indirect measures for the assessment of socially sensitive attitudes. Indeed, the IAT measuring racial attitudes was found be more behaviorally predictive than direct measures.

Together, these findings may be especially supportive of the potential use of the Race IAT in the assessment of the presence of systemic racial biases in law enforcement organizations, and perhaps one day, if the measures psychometrics can be sufficiently improved, as a possible component of law enforcement agency pre-employment assessment batteries. Undergoing assessment for racial biases is typically a socially sensitive endeavor, and given the well-publicized state of relations between police institutions and the African American community it is reasonable to suspect that many current law enforcement officers and potential law enforcement candidates would be aware of the need to project a positive explicit racial attitude. It follows that assessing implicit racial attitudes may hold special utility in the case of current and future law enforcement officers, given the possibility of racial biases being underreported on explicit measures, and the importance of attempting to minimize racial biases in policing.

Hostile Attribution Bias

Anderson and Bushman (2002) authored an annual review entitled *Human Aggression*, in which they provided their definition of human aggression as "any behavior directed toward another individual that is carried out with the *proximate* (immediate) intent to cause harm. In addition, the perpetrator must believe that the behavior will harm the target, and that the target is motivated to avoid the behavior." (p. 28). The authors go on to define violence as aggression with a goal of extreme harm, and clarify that while all violence is inherently aggressive, many acts of aggression are not violent.

Aggression is complex and multifaceted, and thus is thought to be the result of a combination of overlapping constructs combined with environmental factors (Anderson & Bushman, 2002). The term *person factors* refers to an umbrella construct that "includes all of the characteristics a person brings to the situation" (Anderson & Bushman, 2002, p. 35). Among

these characteristics are stable trait personality factors and cognitive schemas which may predispose individuals to high levels of aggression. Anger/hostility is a variable that has received considerable attention in aggression literature. Briefly, the anger component can be conceptualized as an affectively aroused state of irritably, while hostility describes the cognitive processes/attitudes responsible for formulating aggressive behavior (Anderson & Bushman, 2002; Simourd & Mamuza, 2000).

A characteristic of particular interest to this study is hostile attribution bias. Hostile attribution bias refers to the tendency to interpret the intentions of others as hostile when social cues do not show evidence of any clearly hostile intent (Epps & Kendall, 1995; Helfritz-Sinville & Standford, 2013). In other words, an individual who is high in hostile attribution bias is more likely to view the acts of others in given social contexts as aggressive even when the act is objectively benign, as compared to an individual who is lower in the construct.

Hostile attribution bias was originally described by researchers in their efforts to determine the etiology of aggression in children (Epps & Kendall, 1995). Hostile attribution bias in children and adolescents has been shown to have a strong and consistent relationship with aggression. This finding has been replicated across many studies, and is especially true of what is termed reactive aggression, that is aggression that is impulsive and not premeditated (for a review of this literature, see Crick & Dodge, 1994).

Epps & Kendall (1995) conducted the first study showing a robust relationship between hostile attribution and adult aggression (Helfritz-Sinville & Standford, 2013). The authors found robustly significant correlations between levels of hostile attribution bias and levels of self-reported anger/aggression as reported across measures of behavior and attitude (comparative measures included the Buss-Durkee Hostility Inventory and the State-Trait Anger Expression

Inventory). Participants higher in overall anger/aggression were more likely to identify both ambiguous and unambiguous situations as overtly hostile.

Mathews & Norris (2002) in a study of the relationship between trait aggression and hostile attribution bias in driving situations found that drivers high in trait aggression attributed hostility to other drivers in uncertain situations far more often than drivers with lower trait aggression, who instead tended to attribute ambiguous situations as accidental. In situations in which the intentions of other drivers were obviously hostile, drivers higher in hostile attribution bias were again far more likely to readily identify them as such than were the other participants.

The current research indicates that people high in aggression and/or anger are more prone to hostile attribution bias, and thus are predisposed toward interpreting acts as hostile in nature regardless of whether this interpretation can be supported by the evidence (Anderson & Bushman, 2002; Epps & Kendall, 1995; Mathews & Norris 2002). As policing involves frequently and quickly assessing the intentionality of the behavior of others, often in tense and difficult to interpret situations, a tendency to attribute hostility in its absence could be hypothesized as potentially damaging to the relationship between the police officers and the populations they serve. Police officers high in hostile attribution bias may also have a tendency to escalate innocuous situations, (because they would be more likely to interpret the situation as overtly hostile) into potentially dangerous events for the individual police officer, the police officers they work with, and for the individuals involved in the situation. Further, police high in hostile attribution bias and concurrently high in negative implicit (and/or explicit) bias towards African Americans may be especially vulnerable to seeing hostility in the behaviors of African Americans in neutral situations. One issue that has limited the utility of measures for anger/hostility in socially sensitive situations such as those having to do with one's career has

been the rather obvious nature of items on many self-report hostility measures, reducing this problem was a primary focus of the measure described below (Simourd & Mamuza, 2000).

The Hostile Interpretations Questionnaire

The hostile Interpretations Questionnaire (HIQ; Mamuza & Simourd, 1997) is a vignette-style, self-report measure used to assess an individual's overall level of hostility as well as hostility within several social contexts. At the broadest theoretical level, the HIQ is based on social information-processing perspectives, which holds that behavior is the result of a series of mental operations to a particular social stimulus. More specifically, the HIQ is based on hostile attribution bias, which, again, is the tendency to interpret ambiguous social situations as overtly hostile. Individuals may wish to present themselves as less hostile or angry than they are for a variety of reasons (a phenomenon known as response bias, which is especially prominent when assessing socially sensitive topics like hostility). The decision to use vignettes for the HIQ was made because of the need to disguise the content of the instrument in order to reduce the measures susceptibility to response bias. (HIQ Description adapted from Simourd and Mamuza, 2000).

The HIQ consists of seven vignettes that represent a diverse range of commonly encountered social situations. Each vignette includes five questions which the respondent scores on a five point Likert- type scale. An overall level of hostility is measured by the aggregate of all items (higher scores equal higher hostility), and separate measures of each category of measured social sources of hostility and components of hostility are provided. Social sources of hostility assessed by the HIQ include, authority relationships (hostility towards authority figures), intimate/family relationships (hostility in close interpersonal relationships), acquaintance relationships (hostility in distant interpersonal relationships), work relationships (hostility in

work relationships), and anonymous relationships (hostility in stranger interaction). Components of hostility (for example, cognitive errors) assessed include, overgeneralization (pervasive hostility based on limited information), personal responsibility (degree to which respondent's behavior affects social situations), hostile reaction (likelihood of responding in a hostile manner), external blame (degree of blame toward others for own hostility), and most salient to this study, attribution of hostility (hostility attributed to others). The HIQ has been found to have acceptable internal consistency (r = .86) (Simourd & Mamuza, 2000).

The Current Study

This study is exploratory in nature and seeks to investigate whether people seeking careers in law enforcement professions have significantly different levels of implicit racial bias and tendencies towards making hostile attributions than people who are not seeking a career in law enforcement. Given the above reviewed long-standing racial tensions between the police and members of the African American community, as well as the increased public attention and outrage regarding what has been often viewed as disproportionately violent or otherwise discriminatory law enforcement actions towards members of the same community in recent years, it is hypothesized that the field of law enforcement is attracting individuals that are more prone to interpreting ambiguous social situations as hostile, as well as individuals that harbor more implicit bias against Black Americans than members of the public that are not attracted to law enforcement. Further, it is hypothesized that a strong tendency to attribute hostility to ambiguous situations may be related to higher levels of implicit racial bias, as members of an out-group may automatically be perceived as more threatening in a given situation. Confirming the existence and nature of this potential relationship could provide valuable information that

might prove useful in understanding and improving the tensions between African Americans and law enforcement professionals.

Previous research on racial biases in law enforcement officers is conflictual and/or often anecdotal and unsubstantiated in nature. The Race IAT has several advantages as compared to explicit assessments for measuring racial bias (most especially due to the socially sensitive nature of the topic), and was shown to be a reliable and valid measure of racial implicit bias, especially at the group level. Likewise, the HIQ was designed to assess hostile attribution bias in a manner less likely to induce response bias in respondents in socially sensitive situations. Therefore, the current study compares the results of the Race IAT and HIQ between individuals pursuing a career in law enforcement and a control group, as well as tests for a potential correlation between levels of hostile attribution bias and implicit racial bias.

Understanding this information may prove valuable because if an increased and replicable implicit racial bias and/or a tendency to attribute hostility to benign situations is detected in those pursuing a career in law enforcement it may ultimately lead to changes in the recruitment process, and/or in the training process, and a potential reevaluation of law enforcement cultures and public relations. Finding no or minimally increased implicit racial and/or hostile attribution biases in people seeking to enter the field of law enforcement could also be constructive in building the case for more research, as it may mean that no gap in implicit racial bias or hostile attribution bias between extant law enforcement professionals and civilians exists, or, if it does, that it may be fueled by or have its genesis in workplace socialization and isolation, which could potentially be addressed via targeted training programs.

Hypotheses

- *Hypothesis one:* It was predicted that a sample of individuals who self-reported their intention to pursue a career in law enforcement would achieve a mean *D* score on the Race IAT that represented significantly higher levels of negative implicit bias towards African Americans as compared to the mean *D* score achieved on the Race IAT by a control sample.
- *Hypothesis two:* It was predicted that a sample of individuals who self-reported their intention to pursue a career in law enforcement would achieve a mean score on the hostile attribution measure of the HIQ that represented significantly more hostile attribution bias as compared to the mean score achieved by a control sample on the same measure.
- *Hypothesis three:* It was predicted that levels of hostile attribution bias and negative implicit bias towards African Americans, as measured by the HIQ and the Race IAT respectively, would be significantly and positively correlated.
- *Hypothesis four:* It was predicted that an analysis of individuals who identified as criminal justice majors or as interested in a future law enforcement career would show significantly more negative implicit bias towards African Americans as measured by IAT *D* scores as compared to a control sample.
- *Hypothesis five:* It was predicted that an analysis of individuals who identified as current criminal justice majors or as interested in a future law enforcement career would show significantly more hostile attribution bias as measured by the HIQ as compared to a control sample.

CHAPTER II

METHODS

Participants

Participants were undergraduate students enrolled in a Mid-Atlantic public university and were recruited from junior and senior level criminal justice courses as well as via the Indiana University of Pennsylvania Psychology Subject Pool. Participation was on a voluntary basis. Students recruited from criminal justice courses may have been eligible to obtain extra credit for their participation, at their professor's discretion. Students recruited from the Psychology Subject Pool received required credit towards their PSYC 101 course.

A total of 139 students participated in the present study, 121 participants were recruited from the Psychology Subject Pool, and 18 were recruited from criminal justice courses. Participants ranged in age from 18 to 33 years old, and 94.2% of participants were 18 to 22 years of age, with the mean age of participants being 19.7 years. Participants identified as 65.5% female (N=91) and 34.5% male (N=48), with no participants opting to write in a non-binary gender. Participants reported their racial / ethnic background as 75.5% White (N=105), 13.7% Black (N=19), 3.6% Hispanic (N=5), 2.2% Asian (N=3) and 5% (N=7) indicated "other" or opted not to provide an answer. Twenty-nine participants identified that they intended to pursue a future career in law enforcement, and 21 reported they were currently majoring in criminal justice.

Design

This study utilized a quasi-experimental design by comparing samples of undergraduate students with goals of entering law enforcement and/or completing a criminal justice major to a non-equivalent control group of undergraduate students that were not interested in law

enforcement as a career. The primary dependent variable was implicit racial attitudes as measured by the Race IAT and is reported as *D* scores. The secondary dependent variable was hostile attribution bias as measured by the HIQ.

Procedure

Data collection occurred on multiple days. All data collection occurred in Uhler Hall of Indiana University of Pennsylvania. Participants enrolled in the psychology department subject pool volunteered to engage in this study via SONA. Undergraduate students enrolled in junior or senior level criminal justice courses were asked to participate in this voluntary study by the study author, or by a trained volunteer, shortly before or after their classes took place with the permission of their course instructor.

Participants were scheduled to assemble in a Uhler Hall computer lab in groups of 15 to 20 students, where each was assigned a personal computer. All participants were informed that they could withdraw from the study at any time, that data collection was to take approximately 20 minutes, and that their participation or lack thereof carried no personal consequences for them. A consent form was distributed. Participants were instructed to read the consent form, to ask any questions they may have had pertaining to it, to retain it for their personal records, and that by opting to continue in the study they had consented to their participation. Participants were assigned a participant number to maintain anonymity in the data. The evaluator next provided the participants with packets including a demographic questionnaire and the Hostile Interpretations Questionnaire (HIQ) and its response forms, each marked with their participant number.

The evaluator instructed the participants to complete the demographic questionnaire, and to notify him or her upon its completion. Once all individuals in the group completed the demographic questionnaire the evaluator read the standardized instructions for completing the

HIQ to each group, ensuring that the participants understood the instructions, and then directed them to complete the measure on their own.

Participants then completed the Race IAT on a computer. The evaluator directed all participants to open the IAT software and instructed the participants to enter only their participant number into the IAT when prompted. Participants were next provided with oral instructions explaining how to begin the IAT and to follow the onscreen prompts. The evaluator remained in the room until the participants finished the measure in order to monitor the participants' progress and to troubleshoot any technical difficulties. Finally, participants were provided with debriefing information and with an opportunity to ask questions about the experiment before departing.

Materials

Demographic and Law Enforcement Interest Questionnaire

A self-report questionnaire composed of six multiple choice questions was created for the assessment of the participant's possible interest in pursuing a career in law enforcement and their basic demographic information. Information assessed by the measure included how participants identified their gender and ethnicity, the participant's age, their current college major, their intent to pursue a career in law enforcement, and if so in what specific field.

The Race IAT

The Race IAT is a computerized assessment available through Millisecond Software that measures association strengths between the concepts of Black Americans and White Americans, and the attributes of pleasant and unpleasant. Internal consistency estimates have typically been reported to range from .7 to .9 (Egloff & Schmukle, 2002; Greenwald & Nosek, 2001; Nosek et al. 2007). Participants categorize items representing each of the four categories one at a time

using two response keys (for example, the "E" key is often used to identify items from one category, such as Black faces, and the "I" key for items from the other, in this case, White faces). Participants begin with twenty practice trials, first sorting by Black or White faces, and then sorting by pleasant or unpleasant words. These single-dimension tasks familiarize the participants with the stimulus material and the testing process, and no results are recorded. Next, participants begin the first of two critical trial conditions, each comprised of 20 trials. The order in which the critical trial conditions appear is randomized by the software. In one critical condition, participants categorize White faces and unpleasant words with one key and Black faces and pleasant words with the other. In the other condition, participants categorize White faces and pleasant words with one key and Black faces and unpleasant words with the other (for a total of sixty trials consisting of 20 single-dimensional practice trials, and 20 trials in each of the two critical trial conditions). A slower average response time in the first described condition compared to the second is interpreted as an implicit preference for White Americans as compared to Black Americans.

Data from the Race IAT was recorded and scored automatically by Millisecond Software and identifiable only by participant number. Score results were reported by the software as *D* as recommended by Greenwald et al. (2003). *D* scores were derived by calculating "the difference in average response latency between the two sorting conditions and dividing by the standard deviation of all latencies for both sorting tasks." (Nosek et al. 2007, p. 167). *D* scores can be positive or negative, and what can be inferred from their direction depends upon how the particular IAT is programmed. For the Race IAT a positive *D* score is representative of an automatic preference for White faces. (The above Race IAT test description was adapted from Baron & Banaji, 2006; Nosek, Greenwald, & Banaji, 2005; Schmidt & Nosek, 2010).

The Hostile Interpretations Questionnaire

The HIQ (Mamuza & Simourd, 1997) is a 35-item self-report inventory consisting of seven vignettes representing a broad range of common social situations (e.g., "Fred invites a few friends to his house, and when he walks in, his common-law wife complains about how late he is."). There are five questions for each vignette, which are scored on a 5-point Likert-type scale (e.g., "How likely do you think it is that his wife always nags Fred."). ltem scores are aggregated such that there is an overall measure of hostility, a measure of hostility for each social situation, and measures of different components of hostility. Social situations (i.e., sources of hostility) include authority relationships (hostility toward authority figures), intimate/family relationships (hostility in close interpersonal relationships), acquaintance relationships (hostility in distant interpersonal relationships), work relationships (hostility in work relationships), and anonymous relationships (hostility in stranger interactions). Hostility components (i.e., thinking errors of hostility) include overgeneralization (pervasive hostility based on limited information), attribution of hostility (hostility attributed to others), personal responsibility (degree to which respondent's behavior affects social situations), hostile reaction (likelihood of responding in a hostile manner), and external blame (degree of blame toward others for own hostility). Higher scores indicate greater hostility. (Measure description from Simourd & Mamuza, 2000).

CHAPTER III

RESULTS

Sample Characteristics

The data was analyzed to determine if racial and/or gender demographic differences between the control and experimental groups significantly impacted the results. Race IAT *D* score data from female participants was compared to data from male participants using an independent samples *t*-test. Results indicated no significant difference in levels of implicit negative bias towards African Americans between females (*M*=.35, *SD*=.42) and males (*M*=.38, *SD*= .53); *t*(138)=.336, *p* = 0.74. HIQ hostile attribution bias score data from male participants was compared to data from female participants using an independent samples *t*-test. Results indicated no significant difference in levels of hostile attribution bias between females (*M*=18.11, *SD*=3.89) and males (*M*=17.21, *SD*=4.98); *t*(138)=-1.18, *p* = 0.242.

Due to the low number of participants identifying as members of a minority population data obtained from them was collapsed across categories for comparison of non-White participants (*N*=32) to White participants (*N*=105). Race IAT *D* score data from White participants was compared to data from participants identifying as other than White using an independent samples *t*-test. Results indicated significantly higher levels of implicit negative bias towards African Americans among White participants (*M*=.48, *SD*=.40) as compared to non-White participants (*M*=-.02, *SD*= .39); *t*(135)=6.17, *p* <.001. HIQ hostile attribution bias score data from White participants was compared to data from non-White participants using an independent samples *t*-test. Results indicated significantly higher levels of hostile attribution bias among non-White participants (*M*=19.53, *SD*=4.03) as compared to White participants (*M*=17.16, *SD*=4.21); *t*(135)=-2.81, *p* = .006.

Of the 139 participants, 29 self-reported that they intended to seek a career in law enforcement (15 in policing, 10 in military, and eight in "other career in law enforcement"), which was the criteria for inclusion in the law enforcement group. Participants in the law enforcement group identified as 41.4% male (*N*=12) and 58.6% female (*N*=17). A majority of participants in the law enforcement group identified their racial background as White (89.7% *N*=26), while the remaining sample identified as 3.4% Hispanic (*N*=1), 3.4% Asian (*N*=1), and 3.4% indicated "other" (*N*=1). The remaining 110 participants served as the control group (non-law enforcement group) for the law enforcement group. This sample consists of 32.7% males (*N*=36) and 67.3% females (*N*=74). Control group 1 identified as 71.8% White (*N*=79), 17.3% Black (*N*=19), 3.6% Hispanic, (*N*=4), 1.8% Asian (*N*=2), 3.6% indicated "other" (*N*=4), and 1.8% (*N*=2) provided no answer. A chi-square test was performed and no significant relationship was found between race/ethnicity and the frequency of intent to pursue a career in law enforcement, χ^2 (1, N = 137) = 3.48, p =.062, indicating that White participants and non-White participants endorsed an interest in a future law enforcement career at rates that did not differ from what would be expected by chance.

Intent to Pursue Law Enforcement and Racial Bias

Hypothesis one predicted that a sample of individuals who self-reported their intention to pursue a career in law enforcement would achieve a mean *D* score on the Race IAT that would represent significantly higher levels of negative implicit bias towards African Americans as compared to the mean *D* score achieved by a control sample. Figure 1 depicts the IAT *D* score distribution of participants in the law enforcement group as compared to the score distribution of participants in the non-law enforcement group.

The primary dependent variable was group mean *D* scores achieved on the Race IAT. Race IAT *D* score data from individuals who indicated they planned to pursue a career in law enforcement (law enforcement group) was compared to data from individuals who did not (non-law enforcement group) using an independent samples *t*-test. Results indicated significantly higher levels of implicit negative bias towards African Americans among individuals interested in law enforcement (*M*=.54, *SD*=.40) as compared to individuals who indicated no such interest (*M*=.32, *SD*= .47); $t(137)=-2.33$, $p = 0.021$. Further, Cohen's effect size value ($d = .50$) suggested moderate practical significance. A multiple linear regression was calculated to predict Race IAT *D* scores based on participants' interest in a law enforcement career, gender, and ethnicity. A significant regression equation was found $F(3, 133)= 6.625$, $p <.001$, $R^2 = .130$. Together, interest in a law enforcement career, ethnicity, and gender accounted for about 13% of the variability in Race IAT *D* scores. Interest in a law enforcement career significantly predicted Race IAT *D* score, $\beta = .18$, $SE = .09$, $p = .031$. As interest in law enforcement increased one standard deviation, Race IAT *D* score increased by .18 standard deviations, holding gender and racial/ethnic background constant. Racial/ethnic background also significantly predicted Race IAT *D* score, $\beta = -.3$, $SE = .04$, $p > .001$. Identifying as non-White was associated with a decrease in IAT *D* score of -.30 standard deviations, holding interest in law enforcement and gender constant.

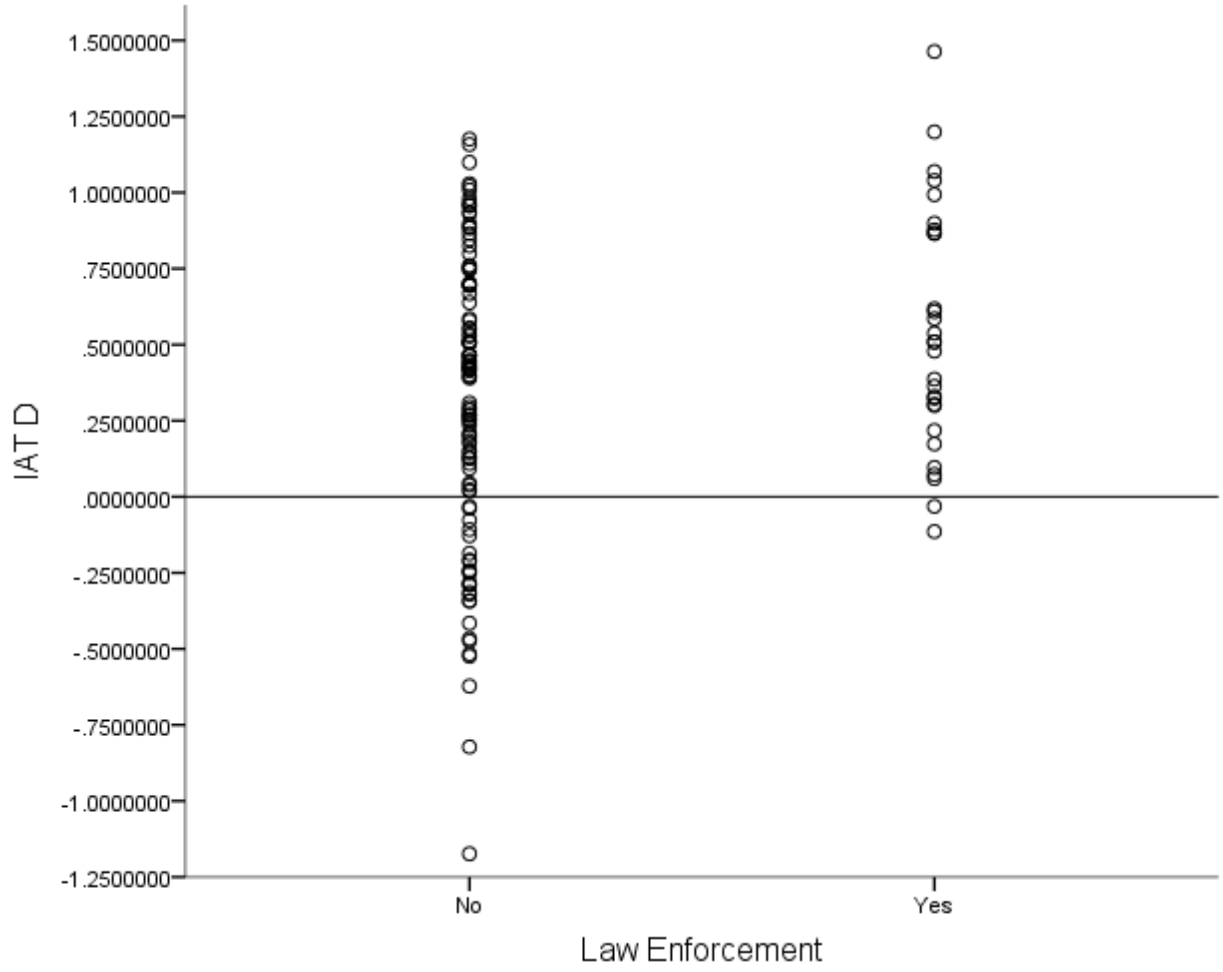

Figure 1. Race IAT *D* score distribution of participants who intended to pursue a career in law enforcement as compared to the score distribution of participants who did not.

Intent to Pursue Law Enforcement and Hostile Attribution Bias

Hypothesis two predicted that a sample of individuals that self-reported their intention to pursue a career in law enforcement would achieve a mean score on the hostile attribution measure of the HIQ that represented significantly more hostile attribution bias as compared to the mean score achieved by a control sample. Figure 2 depicts the HIQ hostile attribution bias score distribution of participants in the law enforcement group as compared to the score distribution of participants in the non-law enforcement group.

Regarding hypothesis two, the primary dependent variable was group mean scores achieved on the HIQ measure of hostile attribution bias. HIQ hostile attribution bias score data from individuals who indicated they planned to pursue a career in law enforcement (law enforcement group) was compared to data from individuals who did not (non-law enforcement group) using an independent samples *t*-test. Results indicated non-significantly lower levels of hostile attribution bias among individuals interested in law enforcement (M=16.6, SD=4.84) as compared to individuals who indicated no such interest (M=18.11, SD=4.12); $t(137)=1.67$, $p = 0.098$. Further, Cohen's effect size value ($d = .34$) suggested low to moderate practical significance. A multiple linear regression was calculated to predict HIQ hostile attribution bias scores based on participants' interest in a law enforcement career, gender, and ethnicity. A significant regression equation was found $F(3, 133)= 3.513$, $p = .017$, $R^2 = .07$. Together, interest in a law enforcement career, gender, and ethnicity accounted for about 7% of the variability in hostile attribution scores as measured by the HIQ. Racial/ethnic background significantly predicted HIQ hostile attribution score, $\beta = .21$, $SE = .38$, $p = .016$. Identifying as non-White was associated with an increase in HIQ hostile attribution score of .21 standard deviations, holding interest in law enforcement and gender constant.

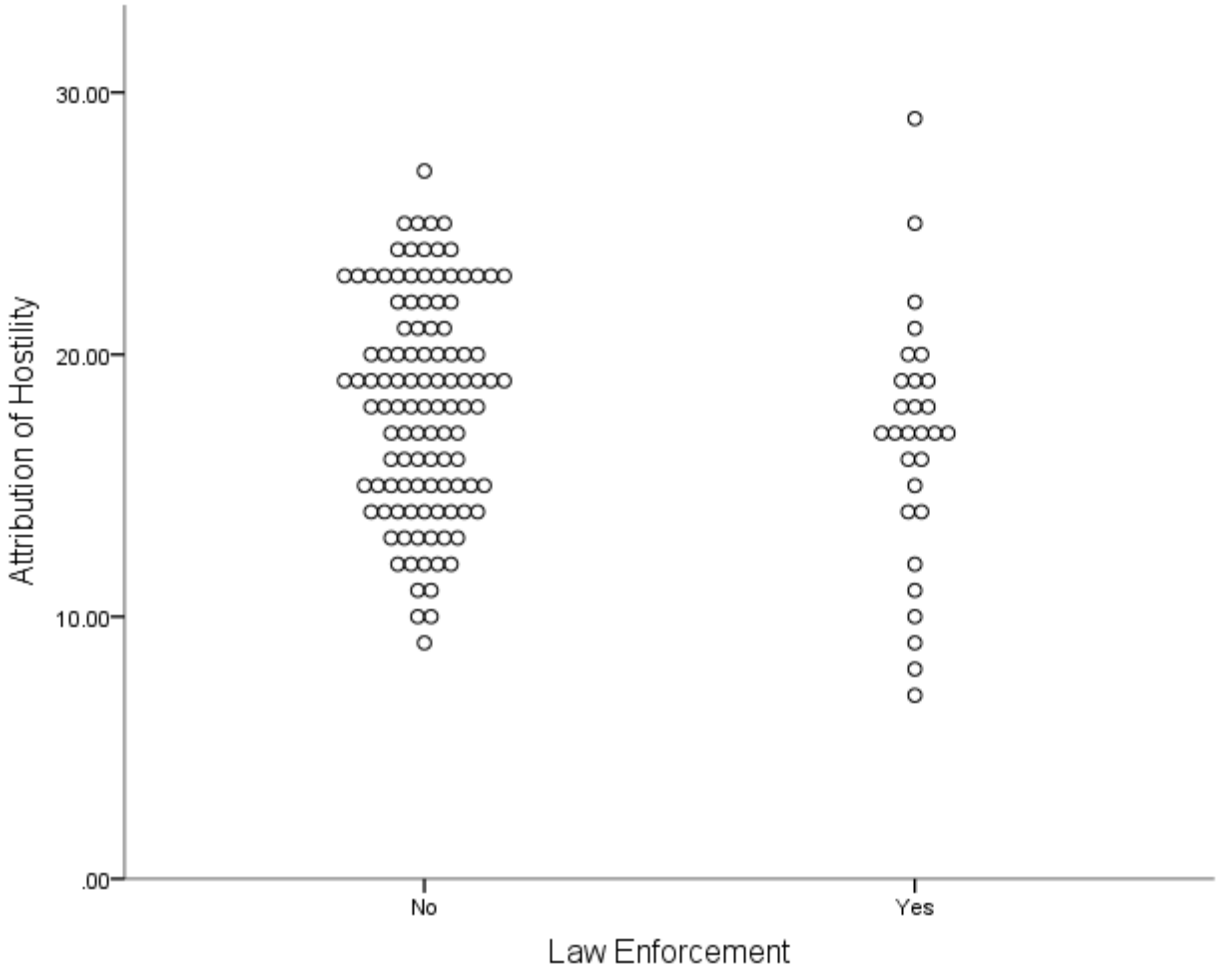

Figure 2. HIQ hostile attribution bias score distribution of participants who intended to pursue a career in law enforcement as compared to the score distribution of participants who did not.

Relationship between Racial Bias and Hostile Attribution Bias

Hypothesis three predicted that levels of hostile attribution bias and negative implicit bias towards African Americans, as measured by the HIQ and the Race IAT respectively, would be significantly and positively correlated.

Regarding hypothesis three, a weak yet statistically significant negative correlation was found between participants' mean IAT *D* scores and their mean HIQ hostile attribution bias

scores, r = -0.17, n = 139, p = 0.047. As negative implicit bias towards African Americans increased, hostile attribution bias decreased. Since IAT *D* scores and hostile attribution bias scores were shown to be significantly different between White and non-White participants, additional analyses were conducted to examine potential differences in how the two variables correlated within White as compared to non-White participants. Among all White, participants IAT *D* scores and hostile attribution bias scores were not significantly correlated, r = -0.037, N = 105, p = 0.706. The correlation between IAT D scores and hostile attribution bias was larger (though still non-significant) among all non-White participants, r = -0.150, N = 32, p = 0.411.

Criminal Justice Majors and Future Law Enforcement Combined

An additional five participants indicated that they were criminal justice majors but did not indicate that they planned to pursue a career in law enforcement. Because it can be expected that criminal justice majors have some common interests with individuals seeking a future career in law enforcement, law enforcement group two was created for an additional analysis with criteria for inclusion being either an interest in a future law enforcement career or being a current criminal justice major. The law enforcement group two experimental sample consisted of 34 participants of which 38.2% identified as male (N=13) and 61.8% identified as female (N=21). Across race, experimental group 2 participants identified as 91.2% White (N=31) and 8.8% Hispanic, Asian, or other (N=3). Law enforcement group two was compared to the remaining 105 participants that were neither intent on pursuing a career in law enforcement or were criminal justice majors (non-law enforcement group two). Participants in this group identified as 33.3 percent male (N=35) and 66.7% female (N=70). Regarding racial background, participants in non-law enforcement group two identified as 70.5% White (N=74), 18.1% Black (N=19), 3.8% Hispanic (N=4), 1.9% Asian (N=2), and 5.7% selected “other” or did not specify (N=6). A

chi-square test was performed and a significant relationship was found between race/ethnicity and the frequency of interest in law enforcement or pursuing a criminal justice degree, χ^2 (1, N = 137) = 5.336, p =.021, indicating that White participants endorsed an interest in law enforcement or were pursuing a degree in criminal justice more frequently than non-White participants to a degree that was higher than would be predicted by chance.

Intent to Pursue Law Enforcement/Criminal Justice and Racial Bias

Hypothesis four predicted that individuals that identified as current criminal justice majors or as interested in a future law enforcement career would show significantly more negative implicit bias towards African Americans as measured by the IAT when compared to a control sample. Figure 3 depicts the IAT *D* score distribution of participants in the law enforcement/criminal justice group as compared to the score distribution of participants in the non-law enforcement/criminal justice group.

The primary dependent variable was group mean *D* scores achieved on the Race IAT. Race IAT *D* score data from individuals that indicated they intended to pursue a law enforcement career or indicated that they were current criminal justice majors (law enforcement group two) was compared to data from individuals that did not endorse either (non-law enforcement group two) using an independent samples *t*-test. Results indicated significantly higher levels of implicit negative bias towards African Americans among individuals interested in law enforcement or who were criminal justice majors (*M*=.59, *SD*=.39) as compared to individuals who indicated no such major or interest (*M*=.29, *SD*= .46); *t*(137)=-3.34, *p* = 0.001. Further, Cohen's effect size value (*d* = .70) suggested moderate to high practical significance. A multiple linear regression was calculated to predict Race IAT *D* scores based on participants' interest in a law enforcement career or status as a criminal justice major, gender, and ethnicity. A significant regression

equation was found $F(3, 133)= 8.445$, $p <.001$, $R^2 = .16$. Together, interest in a law enforcement career/criminal justice major, ethnicity, and gender accounted for about 16% of the variability in Race IAT *D* scores. Interest in a law enforcement career and/or majoring in criminal justice significantly predicted Race IAT *D* score, $\beta = .25$, $SE = .08$, $p = .002$. As interest in law enforcement increased one standard deviation, Race IAT *D* score increased by .25 standard deviations, holding gender and racial/ethnic background constant. Racial/ethnic background also significantly predicted Race IAT *D* score, $\beta = -.29$, $SE = .04$, $p > .001$. Identifying as non-White was associated with a decrease in IAT *D* score of -.29 standard deviations, holding interest in law enforcement and gender constant.

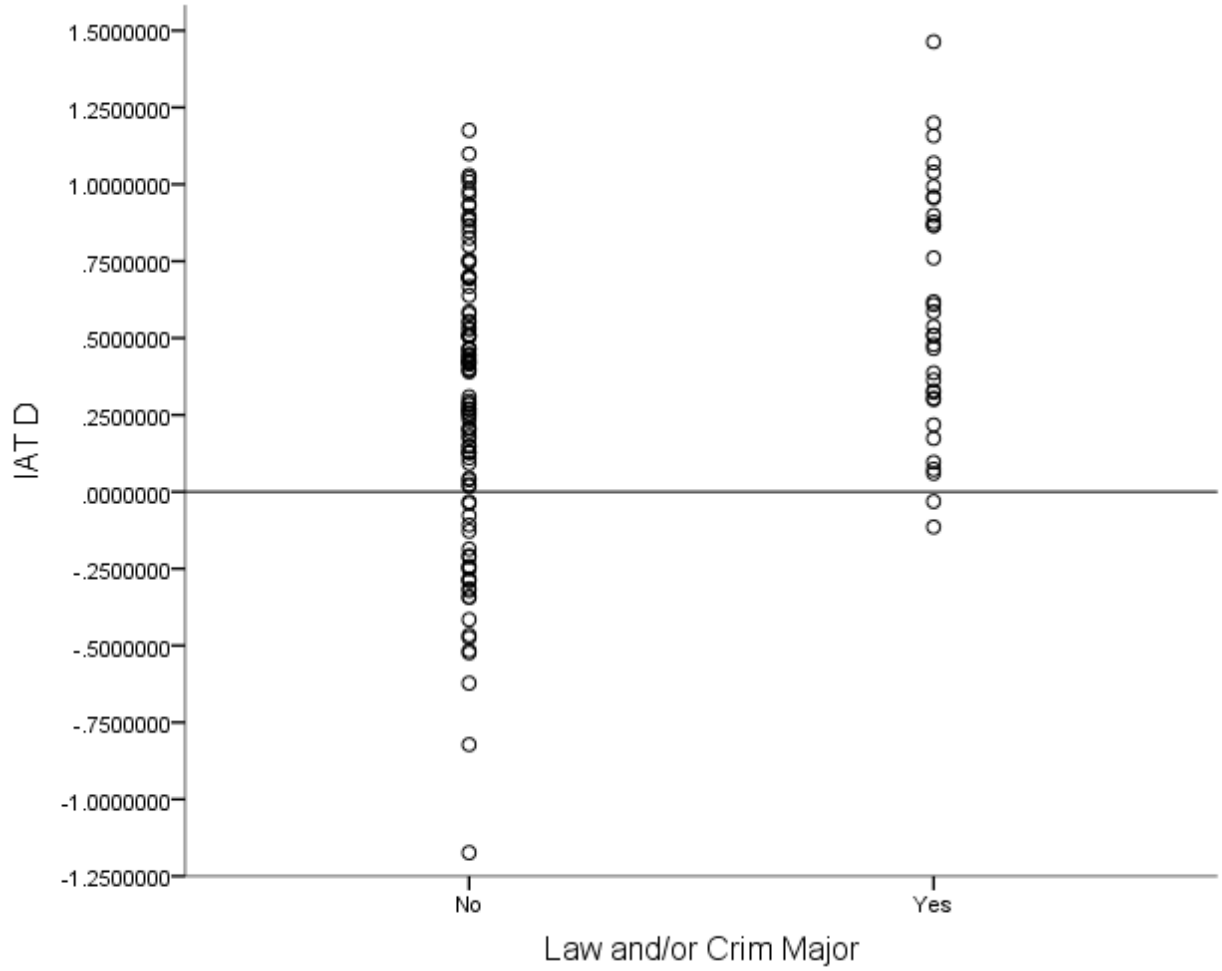

Figure 3. Race IAT *D* score distribution of participants who intended to pursue a career in law enforcement or who were criminal justice majors as compared to the score distribution of participants who had no such interest and who were not criminal justice majors.

Intent to Pursue Law Enforcement/Criminal Justice and Hostile Attribution

Hypothesis five predicted that an analysis of individuals that identified as current criminal justice majors or as interested in a future law enforcement career will show significantly more hostile attribution bias as measured by the HIQ when compared to a control sample. Figure 4 depicts the HIQ hostile attribution bias score distribution of participants in the law

enforcement/criminal justice group as compared to the score distribution of participants in the non-law enforcement/criminal justice group.

The primary dependent variable was group mean scores achieved on the HIQ measure of hostile attribution bias. HIQ hostile attribution bias score data from individuals who indicated they planned to pursue a career in law enforcement or were current criminal justice majors (law enforcement group two) was compared to data from individuals who did not have interest in a law enforcement career and who were not criminal justice majors (non-law enforcement group two) using an independent samples *t*-test. Results indicated marginally significantly lower levels of hostile attribution bias among individuals interested in law enforcement or who were criminal justice majors (M=16.59, SD=4.51) as compared to individuals who indicated no such interest or major (M=18.19, SD=4.18); $t(137)=1.91$, $p = 0.059$. Further, Cohen's effect size value ($d = .37$) suggested low to moderate practical significance. A multiple linear regression was calculated to predict HIQ hostile attribution scores based on participants' interest in a law enforcement career or selection of the criminal justice major, gender, and ethnicity. A significant regression equation was found $F(3, 133)= 3.698$, $p <.013$, $R^2 =.08$. Together, interest in a law enforcement career and/or being a criminal justice major, gender, and ethnicity accounted for about 8% of the variability in hostile attribution scores as measured by the HIQ. Racial/ethnic background significantly predicted HIQ hostile attribution score, $\beta = .20$, $SE = .38$, $p = .019$. Identifying as non-White was associated with an increase in HIQ hostile attribution score of .20 standard deviations, holding interest in law enforcement and /or being a criminal justice major, and gender constant.

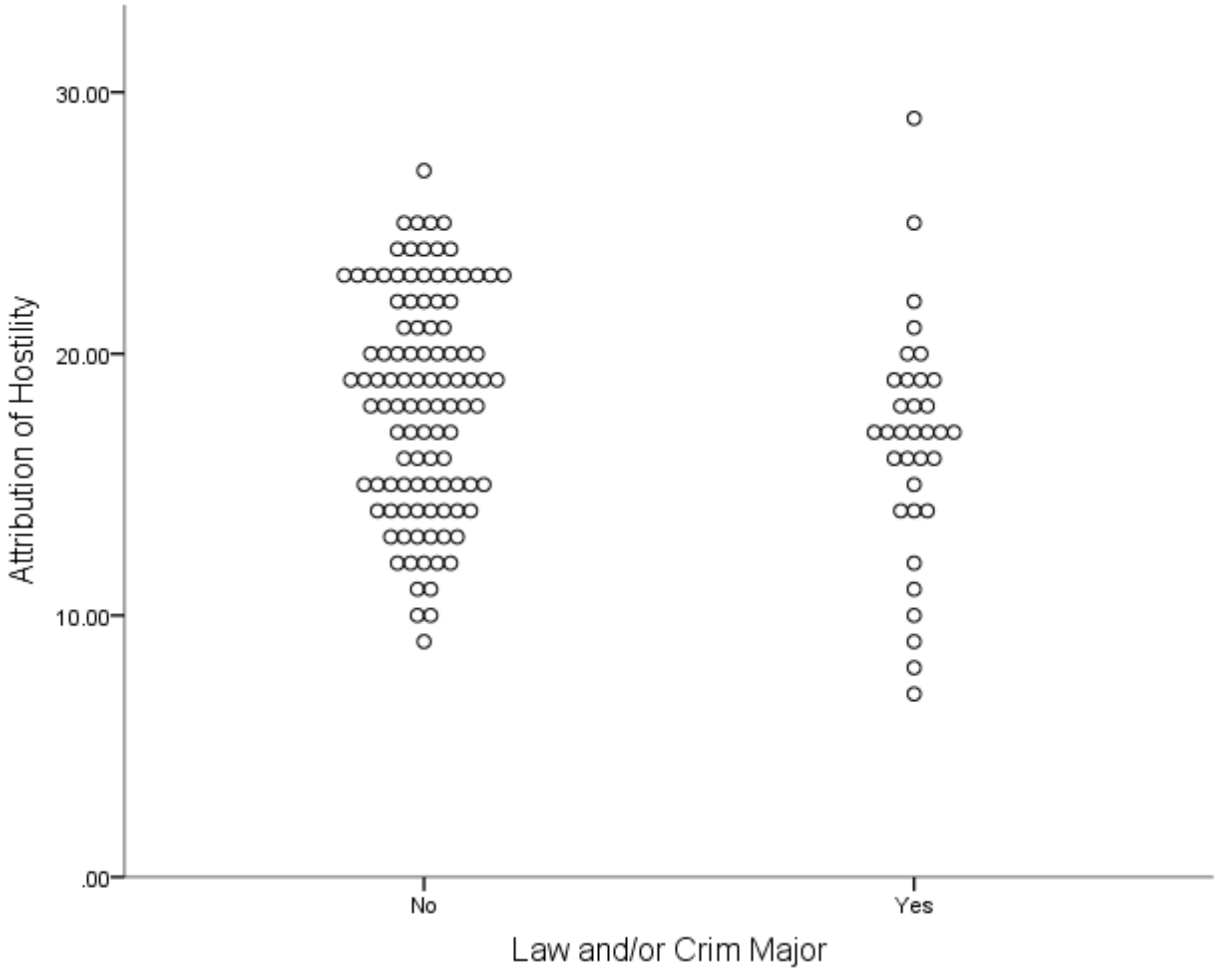

Figure 4. HIQ hostile attribution bias score distribution of participants who intended to pursue a career in law enforcement or who were criminal justice majors as compared to the score distribution of participants who had no such interest and who were not criminal justice majors.

CHAPTER IV

DISCUSSION

Hypothesis one predicted that a sample of individuals that self-reported their intention to pursue a career in law enforcement would achieve a mean *D* score on the Race IAT that would be indicative of significantly higher levels of negative implicit bias towards African Americans when compared to the mean *D* score achieved on the Race IAT by a control sample consisting of peers that did not report an intention to pursue a career in law enforcement. The results fully support hypothesis one's prediction; individuals that endorsed an intention to pursue a future career in law enforcement produced mean *D* scores on the Race IAT that indicated significantly higher levels of negative implicit bias towards African Americans as compared to the mean *D* score achieved on the Race IAT by a control group comprised of peers that had endorsed no interest in a future career in law enforcement.

The results of hypothesis one support the widely held belief within the African American community that law enforcement officials are biased against them (Brunson, 2007; Gau, & Brunson, 2010; Lee, Steinberg, & Piquerom, 2010; Parker, Onyekwuluje, & Murty, 1995; Weitzer & Tuch, 2005; Wu, 2014), and suggests that this implicit racial bias is more extreme than the level found in the general population. Importantly, this result also indicates that this increased level of implicit bias is present in individuals prior to beginning their law enforcement career.

It is possible that the higher levels of implicit negative bias towards African Americans found in those interested in law enforcement careers is a predispositional trait as described by Twersk-Glassner (2005). Applying this model, higher levels of implicit negative bias towards African Americans could be part of a personality construct that is attracted to law enforcement.

Another possibility, ripe for future research, is that those doing the hiring for law enforcement agencies may themselves have similar traits that predispose them to hire individuals with attitudes and traits congruent with their own. Once hired into a law enforcement agency, an individual with higher levels of implicit bias may find themselves surrounded by others with similar traits, and these traits, including racial bias, may be reinforced and strengthened by the organizational culture (Twersky-Glassner, 2005). In this way, the potentially problematic higher levels of implicit racial bias found in those interested in law enforcement could potentially become more extreme once they are employed as law enforcement officials.

Hypothesis two predicted that a sample of individuals that self-reported their intention to pursue a career in law enforcement would achieve a mean score on the hostile attribution measure of the HIQ that represented significantly more hostile attribution bias as compared to the mean score achieved by a control sample. The results do not support hypothesis two's prediction. Participants interested in law enforcement showed slightly lower levels of hostile attribution bias compared to individuals that were not interested in a career in law enforcement, although this difference was non-significant.

This unexpected finding can be at least partially explained by differences in the demographics of the comparison groups. Participants who identified as non-White tended to have significantly higher levels of hostile attribution bias as compared to participants that identified as White, and non-White participants were disproportionally likely to indicate that they were not interested in a career in law enforcement. Individuals that identify as non-White may develop higher levels of hostile attribution bias as a result of life-long exposure to systematic oppression, explicit bias, implicit bias, overt hostility, and micro-aggressions due to their racial background. Higher levels of hostile attribution bias in minority populations could be

adaptive, as individuals from diverse backgrounds are more likely to experience real hostility at the individual and cultural level, developing a lower threshold to initially perceive hostility may be protective, both psychologically and, at times, physically.

Hypothesis three predicted that levels of hostile attribution bias and negative implicit bias towards African Americans, as measured by the HIQ and the Race IAT respectively, would be significantly and positively correlated. Results did not support hypothesis three's prediction. In fact, a significant yet weak negative correlation was found, such that as negative implicit bias towards African Americans increased, hostile attribution bias decreased slightly. As in hypothesis two, we investigated whether the results were impacted by participant race, although the correlation was negative for both White and non-White participants, it was larger for non-White participants.

The negative correlation between implicit racial bias and hostile attribution found among non-White participants is interesting and seemingly counterintuitive. One possible explanation for the relationship may be tied to the degree to which non-White individuals identify with their particular race and subculture. Individuals that strongly identify as a race other than White may more forcefully reject White culture, and may associate more frequently with other members of their identified race. Individuals that more strongly identify as a racial minority may perceive or be exposed to more hostility on an individual and cultural level, which may lead to higher levels of hostile attribution bias. At the same time, because these individuals strongly identify with their race and subculture, and may reject more aspects of the majority culture, their levels of implicit racial bias may be reduced.

Hypothesis four predicted that an analysis of individuals that identified as either criminal justice majors or as interested in a future law enforcement career would show significantly more

negative implicit bias towards African Americans as measured by IAT *D* scores when compared to a control sample. The results support hypothesis four's prediction. Individuals that endorsed an intention to pursue either a future career in law enforcement or that were majoring in criminal justice produced mean *D* scores on the Race IAT that indicated significantly higher levels of negative implicit bias towards African Americans as compared to the mean *D* score achieved on the Race IAT by a control group comprised of peers that had endorsed no interest in a future career in law enforcement or were not majoring in criminal justice.

Interestingly, the addition of the five criminal justice majors who did not identify as interested in law enforcement to the experimental group served to slightly widen the chasm in mean race IAT *D* scores between the experimental and control group. That is, the experimental group's measured implicit racial was slightly increased by their addition, while the control groups measured implicit bias was slightly decreased as compared to the results of hypothesis one. This finding, although limited by the small sample size, could suggest that heightened implicit racial bias may be a characteristic found in individuals more broadly interested in crime and criminal conduct, and is perhaps not unique to those who are intent on a career physically enforcing the law.

Hypothesis five predicted that an analysis of individuals that identified as current criminal justice majors or as interested in a future law enforcement career would show significantly more hostile attribution bias as measured by the HIQ when compared to a control sample. The results do not support hypothesis five's prediction. Instead, marginally statistically significant lower levels of hostile attribution bias were found among individuals interested in law enforcement compared to individuals that were not interested in a career in law enforcement.

The results of hypothesis one and hypothesis five are similar in much the same manner as hypothesis one and hypothesis four are similar. That is, the movement of the five participants who identified as criminal justice majors from the control group to the experimental group for additional analysis again served to slightly increase the differences between the experimental group and the control group observed in hypothesis two. In this case, the unexpected finding that hostile attribution bias was lower in participants who were interested in law enforcement was slightly strengthened by the addition of those pursing a degree in criminal justice to the law enforcement group, causing the difference to nearly reach statistical significance.

Limitations

This study was limited by the relatively small sample size of individuals that identified as being interested in a career in law enforcement, and by the fact that this group included no individuals who identified as Black. Thus statistical comparisons between races within intended occupations were impossible. Furthermore, the small number of criminology majors who did not intend to pursue law enforcement prevented post-hoc analyses to examine potential differences between these groups.

The small sample size may also have limited how well the experimental group represented the population of individuals interested in a law enforcement career. The sample was comprised of college students who may differ from non-students interested in law enforcement. In addition, the university the students were drawn from is a state-owned facility whose student population primarily hails from locations within the state, potentially limiting its generalizability. The sample of students majoring in criminal justice included only five individuals who did not indicate that they were interested in a career in law enforcement, severely limiting what could be determined about the characteristics of this population. Finally, only criminal justice students

enrolled in courses taught by instructors who offered extra credit for their participation in research opted to engage in this study. Some students enrolled in courses with instructors who did not offer extra credit expressed interest in participating, but ultimately did not attend their scheduled appointment with the evaluator.

This study was also limited by its reliance on participants' self-reports of their *intention* to pursue a career in law enforcement. It is possible that there are substantial differences between those who merely indicate that they intend to one day pursue a career in law enforcement, and those that have already taken meaningful steps in order to do so, and/or among those that have already successfully completed the hiring process and entered the profession. Indeed, there may even be meaningful differences in levels of implicit racial bias among individuals already in law enforcement that had been hired after being positively evaluated using psychological screening measures as compared to those that were hired in their absence.

Further, while the study was able to determine that participants with the intention to pursue a career in law enforcement had higher levels of implicit racial bias than those that did not, it did not explore how their levels of implicit racial bias may change over time if they were to successfully obtain a career in law enforcement, nor what if any impact their higher initial levels of implicit racial bias may or may not have upon their professional conduct. Lastly, the nature of the study did not allow for an analysis of the etiology of the differences in implicit racial bias that were observed.

Implications and Future Directions

The unexpected finding that levels of hostile attribution bias are elevated in individuals that identify as a race or ethnicity other than White is one area worthy of future exploration. Future research should include testing this finding with larger samples of participants that

identify as members of particular minority populations, for example, African Americans. Provided that future research confirms this study's initial result, future hypothesis testing to determine the potential causes for the discrepancy, such as prolonged exposure to societal oppression, and/or as a mechanism to facilitate greater in-group identification should be undertaken.Confirmation that minority populations harbor higher levels of hostile attribution bias could have implications for law enforcement training and retraining. Law enforcement officials that understand why actions they take that they perceive to be neutral may be met with defensiveness or hostility by members of a minority community may be better able to calmly deescalate the situation safely, which would benefit both parties.

The finding that individuals interested in a career in law enforcement had significantly higher levels of implicit bias towards African Americans is ripe with potential implications. It would seem to add support to the widely held belief among members of the African American community that members of law enforcement are negatively biased towards them, and indeed are more biased against them than the average person in the broader community. This important finding implies that law enforcement agencies may have a self-selection problem, that is, they may be especially attractive to individuals with implicit attitudes that have the potential to negatively impact their interactions with members of the African American community. The negative consequences of higher levels of negative implicit bias towards African Americans may include the inequitable enforcement of laws, increased negative encounters between members of the communities, and subsequent increased levels of animosity and distrust between law enforcement and African American civilians which may lead to violence.

In extreme cases, the consequences of high levels of negative implicit bias towards African Americans among law enforcement could be severe, and may contribute to the use of

unjustified lethal force against members of the African American community. The use of unwarranted lethal force by law enforcement against African Americans is understandably often met with outrage by members of the African American community, and this outrage is likely to increase the potential for negative attitudes and acts by members of the African American community towards law enforcement officials. Ultimately, the higher levels of implicit negative bias towards African Americans held by individuals interested in careers in law enforcement may be a key factor in perpetuating the problematic relationship and cycle of violence between the two communities.

As discussed in chapter 1, higher levels of measured implicit racial bias have been found to be more predictive of biased behavior than explicit measures of racial attitudes (Greenwald, et al. 2009). Greenwald, Banaji, and Nosek (2015) argued that IAT measures are especially well suited to predicting discrimination at the system-level, where implicit racial biases of a small to medium effect size would be predictive of substantial and consequential amounts of discriminatory behaviors. Given this study's finding that those interested in law enforcement careers collectively had substantially higher levels of implicit racial bias than those that did not, and given the Race IAT's ability to predict discriminatory racism at the systemic level, future research to determine implicit racial bias levels within law enforcement agencies is warranted. In addition, little research has examined how increased levels of implicit racial bias may manifest as racially biased behaviors specific to law enforcement. For example, future research to determine the relationship between implicit racial bias and racially biased law enforcement acts, including the unjustified use of deadly force, could yield valuable information.

Future research should test the generalizability of this study's findings to individuals who have already taken concrete steps towards securing careers in law enforcement, such as

individuals enrolled in a law enforcement training program. Further, future research should explore if increased implicit racial bias is prevalent and to what degree it presents in currently active members of law enforcement agencies as compared to members of the communities they serve, as well as exploring the direction and degree that current law enforcement official's levels of implicit racial bias changes over the course of their careers, with attention paid to which specific factors contribute to any such changes.

It is in the interest of both the law enforcement and African American communities to better understand why individuals with higher levels of implicit racial bias appear to be drawn to law enforcement careers. Future research aimed at better understanding what underlies this relationship is warranted. Future studies should also aim to discover which, if any, currently used law enforcement screening procedures, identify individuals with increased levels of implicit racial bias, perhaps via a correlation with another more commonly assessed characteristic. Finally, even given the current dearth of research aimed at understanding specifically how implicit racial bias negatively impacts equitable law enforcement, future research with the goal of developing tools and techniques to reduce implicit racial bias in law enforcement officers seems a worthy area of future study. Ideally, law enforcement officials would hold lower mean levels of implicit racial bias than the populations they serve, which could reduce the potential for biased law enforcement and violence, and subsequently allow the rift between the African American and law enforcement communities to begin to heal.

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Appendix A

Informed Consent Form

Indiana University of Pennsylvania
www.iup.edu

Counseling Center
Suites on Maple East, G-31
901 Maple Street
Indiana, Pennsylvania 15705-1074

P 724-357-2621
F 724-357-7728
www.iup.edu/counselingcenter

Information Concerning Participation in a Research Study
Title: An Exploration of Attitudes

You are invited to participate in a research study. You are invited to participate because you are enrolled in the psychology subject pool or because you are criminal justice major with junior or senior standing. The following information is provided to help you make an informed decision whether or not to participate. Your participation is completely voluntary, and not participating will not affect your class grade. You must be at least 18 years old to participate in this study.

Purpose of the Study: The purpose of this study is to examine participants' attitudes in a variety of contexts. Participation in this study will require approximately thirty minutes of your time. You will be asked to complete a computer task quickly associating images with words, to answer a series of questions about your attitudes towards events depicted in vignettes, and to provide demographic information.

Risks & Benefits: There are minimal risks associated with participation in this study. If you become upset or are concerned about any aspect of the study you may withdraw from the study at any time without penalty by notifying the experimenter. If you chose to withdraw from the study during the course of the study any data collected will be destroyed, however if you choose to withdraw following the completion of the study we cannot destroy your data because it will be anonymous and not identifiable. Although this study is not designed to help you personally, you may find the learning experience enjoyable and may learn a little bit about how psychological research is conducted.

Privacy: Any information obtained during this study that could identify you will be kept strictly confidential. All response sheets and collected data will be identified only by an anonymous number and paper documents will be kept in a locked file cabinet in the faculty advisor's office and your responses will be analyzed only in combination with the responses from other participants.

Compensation: Completion of this study earns one credit towards PSYC 101: Introduction to Psychology if you are participating as part of the Psychology Subject Pool, or you may be given extra credit by your professor if you have been recruited from a Criminal Justice course. Participants recruited from criminal justice classes will be provided a letter documenting your participation. You are free to decide not to participate in this study or to withdraw at any time by notifying the researcher. Withdrawing will not adversely affect your relationship with the investigators or IUP. Participation in human participant research is not required to earn credit in any class. Participants in the psychology pool may complete read and review assignments in lieu of research participation.

Questions: You may ask questions of the researcher and have those questions answered, before agreeing to participate or during the research. You may call or email the researcher at any time. Any information provided when contacting or communicating with the researcher will be kept strictly confidential. If you have any questions about the study or your rights as a research participant, you may contact the researcher: Brian J. Ferraccio M.A., VQMT@iup.edu, or his faculty advisor Dr. Reardon (Margaret.Reardon@iup.edu).

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).

By continuing with the study, you willingly consent to participate in this research.

Appendix B

Debriefing Form

Experiment Debriefing

Thank you for your participation in this research.

The purpose of this study is to examine the relationship between interest in law enforcement, implicit racial bias, and hostile attribution. There has been much recent controversy and concern regarding law enforcement's possible biases against African Americans, however the existence and nature of these potential biases has not been adequately researched. We are additionally interested in whether higher levels of implicit racism are predicted by a tendency to attribute hostility to neutral circumstances.

If you have questions about this research or would like to know the results of this research, please contact Brian J. Ferraccio MA (VQMT@IUP.EDU).

If you have any concerns, comments or questions about this research experience please contact Dr. Reardon (Margaret.Reardon@iup.edu).

- Please do not discuss this research with anyone else for the next **six months.**

For more information about implicit racism see:

Greenwald, A.G., McGhee , *D.* E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: the implicit association test. *Journal of personality and social psychology, 74(6),* 1464.

Nosek, B. A., Greenwald, A. G., & Banaji, M. R (2005). Understanding and using the Implicit Association Test ll. Method variables and construct validity. *Personality and Social Psychology Bulletin, 31(2),* 166-180.

For more information about hostile attribution bias see:

Helfritz-Sinville, L. E., & Stanford, M. S. (2014). Hostile attribution bias in impulsive and premeditated aggression. *Personality and individual differences, 56,* 45-50.

Appendix C

Demographic Questionnaire Form

Demographic questions

Please answer the following demographic questions. This information is used solely to describe the characteristics of respondents when reporting our results, and will not be reported for individual participants.

Please indicate your gender.

Male	Female	Other (please specify below)

How old are you? _____

What is your major? _____

Do you intend to obtain a career in law enforcement?_____

If Yes, please check one of the below option

	Police
	Military
	Other (Please Specify)

What is your racial/ethnic background?

	White, Non-Hispanic
	Black, Non-Hispanic
	Hispanic
	Asian
	Other