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The World Is Not Black and White: Racial Bias in the Decision to Shoot in a Multiethnic Context

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We examined implicit race biases in the decision to shoot potentially hostile targets in a multiethnic context. Results of two studies showed that college-aged participants and police officers showed anti-Black racial bias in their response times: they were quicker to correctly shoot armed Black targets and to indicate "don't shoot" for unarmed Latino, Asian, and White targets. In addition, police officers showed racial biases in response times toward Latinos versus Asians or Whites, and surprisingly, toward Whites versus Asians. Results also showed that the accuracy of decisions to shoot was higher for Black and Latino targets than for White and Asian targets. Finally, the degree of bias shown by police officers toward Blacks was related to contact, attitudes, and stereotypes. Overestimation of community violent crime correlated with greater bias toward Latinos but less toward Whites. Implications for police training to ameliorate biases are discussed.

As the country becomes increasingly diverse, attempts to address overt and subtle forms of prejudice and discrimination based on race and/or ethnicity take on a new importance. The U.S. Census Bureau (2008) projects that by 2050, racial and ethnic minorities combined will constitute 54% of the population, the numerical

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majority. The largest changes to the racial/ethnic composition of the country are expected in the decrease of non-Latino, single-race Whites, and corresponding increase in Latinos and Asians. Whites are expected to decrease from 66% to 46% of the population. In contrast, Latinos are expected to increase from 15% to 30% and Asians are expected to increase from approximately 5–9% of the population. The representation of Blacks is expected to remain relatively stable, constituting about 15% of the population.

In understanding the racial and ethnic transition the country will face, two implications seem evident. First, research on stereotyping, prejudice, and discrimination should increase its attention to bias toward people of Latino or Asian descent (Martinez, 2007; Peterson & Krivo, 2005). Second, researchers should anticipate that the shift of Whites from the numerical majority to a minority is likely to strain relations among racial/ethnic groups within the United States. In fitting with this special issue, the current research examined how implicit racial biases toward Blacks, Latinos, and Asians may be evidenced in the decision to open fire on suspects in the United States.

From this point forward, we use "race" rather than "race/ethnicity" for simplicity because most available national sources record race or ethnicity, but not both (the census is an exception). Our choice of race is meant to represent physical attributes such as skin color, hair, etc., that facilitate categorization. It should be noted that it is possible that race and ethnicity each contributes independently to biases, or that the differences attributed to race are at least in part due to ethnic differences.

Race and Law Enforcement

Data drawn from national sources such as the U.S. Department of Justice (DOJ; 2001) and Bureau of Justice Statistics (BJS; 2007) provide evidence that some minorities, especially young Black males, are incarcerated at disproportional rates. Compared to their proportion of the general population, Blacks are grossly overrepresented and Whites are underrepresented as inmates. Latinos, in contrast, are incarcerated at rates approximately equal to their representation in the population.

Equally disturbing is the fact that some minorities are overrepresented in the suspects shot and killed by police officers. The DOJ (2001) reports that Black suspects were killed by police at a rate about five times greater than White suspects in the period from 1976 to 1998. Information on the rates of justifiable homicide for Asians and Latinos are less clear. Asians are designated simply as "other" (a category encompassing multiple races) and at a maximum account for 2 or 3% of those shot. The prevalence rates for Latinos cannot be directly discerned from the DOJ data because Latinos are included in the racial category "White." Some sources report, however, that Latinos are shot and killed more often by police than Whites but less than Blacks (for a review, see Geller, 1982).

The available national-level data clearly point to Blacks being killed by police more often, and Whites and Asians less often, than would be expected given the percent of the population they represent in the United States. It should be noted that evidence for disparate treatment of ethnic minorities, immigrants, or "foreigners" by the criminal justice system has been found cross-culturally (Albrecht, 1997; Johnson, van Wingerden, & Nieuwbeerta, 2010). However, the focus of the current work is on implicit racial biases that may underlie differential treatment in the United States.

It is one thing to document the discrepancy in treatment of racial/ethnic minorities by police and/or the criminal justice system in the United States, and it is quite another to understand why it exists. A major debate in the criminology literature involves the degree to which this discrepancy reflects bias in the justice system, the tendency for minorities to engage in more criminal activity, or both (Cureton, 2001; Goldkamp, 1976). In other words, are minorities more likely than Whites to participate in criminal behavior (justifying the differences in incarceration) or is the law differentially enforced for suspects as a function of their race?

Evidence on this point is mixed. The subculture of violence (Wolfgang & Ferracuti, 1967) and danger perception (MacDonald, Kaminski, Alpert, & Tennenbaum, 2001) theories suggest that minorities are more likely than Whites to commit crime due to the history of each group in the United States, cultural variations in response to minor affronts, and/or distrust in the justice system to resolve disputes. The overrepresentation of minorities in prison, especially Blacks, is often cited in support of this view. However, survey research has found no evidence that African Americans endorse violence as more acceptable than other races (Parker, 1989; Smith, 1992). Further, Hannon (2004) reviewed 950 cases of nonjustifiable homicide and found no evidence that victim provocation patterns differed by offender race. Thus, African Americans perpetrators were no more or less likely than White perpetrators to react with lethal force to minor transgressions.

Perhaps, the most researched theory of law enforcement in the United States, conflict theory, proposes that the purpose of law is to sustain the position of the majority in society (Turk, 1969) building an inherent bias into the system. Historically, in the United States, this has meant buttressing the position of Whites against the "threat" of minority groups based on race and socioeconomic and immigrant status (Holmes, 2000). This theory lends itself to two immediate corollaries: First, police officers may label or "criminalize" minorities unfairly and police them differently than Whites (Cureton, 2001) and second, as the ethnic composition of the country changes, minorities should pose a greater threat to the majority and attempts to police and control them will intensify (this has been labeled the threat hypothesis, MacDonald et al., 2001). Given the current climate of concern over racial bias, it seems unlikely that blatant, intentional discrimination of the sort proposed by conflict theory is responsible for differential outcomes experienced by racial groups in the criminal justice system at present. Instead, it is more likely

that stereotypes insidiously influence behavior without awareness or intention. Nevertheless, as called for by Kang (2012), it will be the charge of law and law enforcement to adjust to the shifting basis of discrimination.

Whatever the "cause" of the overrepresentation of minorities in the criminal justice system at the national level, we propose that knowledge of this racial/ethnic discrepancy may impact perceptions and conduct of police officers in encounters with civilians. To be clear, the current research does not and cannot determine whether or not disproportionate minority involvement with law enforcement is justified. But regardless of its cause, we suggest that the mere association between minorities (particularly Black and Latino groups) and crime at the societal level may have consequences for police behavior at the individual level.

In some encounters, police officers must make life-or-death decisions quickly. In these moments, prior expectations—be they fact or fiction, personally endorsed or simply prevalent in the culture—may influence how information is processed. Knowledge that racial minorities, and Blacks in particular, are overrepresented in prison and jail (BJS, 2007) and are more likely to use a firearm in commission of a crime (DOJ, 2001) may contribute to an increased perception of minorities as threats. Also relevant are characteristics of the neighborhood served. Violent crime rates and the proportion of non-White people in an area have been associated with increased perception of threat (Cureton, 2001). Taken in sum, these factors may influence the level of threat officers expect in interactions with minorities. Couple with this, the distrust racial/ethnic minorities report toward police (Locke, 1996), and fodder for a self-fulfilling prophecy of aggressive encounters is laid. Awareness of a societal-level phenomenon, whatever its underlying cause, may thus be associated with implicit biases that impact cognitive processing or behavior (Fisher & Borgida, 2012). Applied to the context of race and law enforcement, the mere association of race and criminality at the societal level may impact, for example, the speed with which stimuli are processed and the likelihood of a decision to open fire.

Race and the Decision to Shoot

It is difficult to determine whether or not race influences the course of encounters between police officers and suspects. In the real world, minority status is (on average) associated with a number of factors such as poverty, living in disadvantaged neighborhoods, and living within disorganized family structures (Sampson & Lauritsen, 1997), making a clear attribution difficult (e.g., were the officers responding to the suspect's race or to the threatening neighborhood?). However, experimental research that isolates the effect of race on shoot/don't shoot decisions demonstrates that race alone can influence responses to threatening objects. Correll, Park, Judd, and Wittenbrink (2002) asked college-aged participants to perform a first-person-shooter (FPS) task, so-called because the participants take

the first-person perspective of an officer who must make rapid judgments about whether or not to shoot Black and White male suspects (targets) who appear on the screen holding either a gun or a nonthreatening object (such as a wallet or cell phone). Participants were faster to shoot armed Black targets than armed White targets, and they were faster to decide not to shoot unarmed White targets than unarmed Blacks. Further, this effect transferred into mistaken decisions or behaviors when participants were forced to respond extremely quickly. Importantly, the degree of racial bias against Black targets did not differ between White and Black participants.

In these simulations, target race is not diagnostic of the presence or absence of a weapon. This is important because it allows the investigators to conduct a direct examination of the impact of racial cues, *per se*, on the tendency to shoot. Given the time pressure and complexity of stimuli employed, the ability to exert control over responses was diminished, making it likely that observed racial biases in behavior were implicit or operating outside of conscious control. Although compelling, demonstrations of implicit racial bias among college students in the laboratory lack external validity. Examining the phenomenon among police officers provides a better gauge of the extent to which implicit racial bias may impact the decision to open fire and thus contribute to the disparity in rates of minorities versus Whites shot and killed by police.

Two groups of researchers have investigated the effect of race on decisions to shoot with police officers (Correll et al., 2007; Peruche & Plant, 2006; Plant & Peruche, 2005). Correll et al. (2007) found that police officers and community members both showed bias in the speed of their responses (responding more quickly to stereotypic targets). Consistent with prior work, the extent of racial bias in response times did not differ between White and non-White officers. But in spite of this bias in reaction time, police officers were no more likely to shoot an unarmed Black target than they were to shoot an unarmed White. In other words, despite the influence of race on the time taken to make correct decisions, police officers were able to overcome the impact of race and choose whether or not to "open fire" as a function of the weapon held, not the race of the person holding it. Using a different paradigm, Plant and Peruche (2005) found that although police officers initially exhibited racial bias in the decision to shoot, bias decreased with practice. Thus, college students, community members, and police officers all evidenced an implicit racial bias in the time taken to make a decision to shoot; however, police officers were able to overcome this bias when instigating a behavioral response.

The Current Research

No prior research has investigated bias toward Latinos and Asians in a shoot/don't shoot scenario. In light of differential minority contact with law enforcement and the profound demographic changes taking place in the

United States, such an investigation is both timely and important. The current research examined implicit racial bias in the decision to shoot White, Black, Latino, and Asian male targets in a FPS task in two studies. In the first study, we investigated the performance of college students on two primary outcomes. First, we examined the average response times needed to *correctly* determine if targets of each race were armed or unarmed. Racial bias in reaction times is indicated by faster responses to stereotypic combinations (e.g., armed Black target) than counter-stereotypic combinations (e.g., unarmed Black target). Second, we examined whether target race influenced the pattern of correct versus incorrect responses. Both racial bias measures are assumed to reflect the influence of cultural stereotypes; however, our previous work suggests that they may reflect different components of cognitive processing (Correll et al., 2007). Although stereotypes may impact the speed with which correct responses are made, whether or not they affect the ultimate decision to shoot may depend on the extent to which perceivers can exert control over their behavioral response.

In the second study, we examined implicit racial bias in reaction times and errors among police officers, and whether these biases varied as a function of community characteristics and personal or cultural beliefs. For example, one might expect that officers who serve areas in which the predominant criminal element is Latino should show a greater bias toward Latinos than they do toward Blacks. To allow for sufficient variability in types of communities and personal beliefs, we recruited police officers from the Southeast, Southwest, and Northwest regions of the United States.

The present research thus exemplifies "full-cycle social psychology" (Cialdini, 1980; Dasgupta & Stout, 2012) wherein the phenomenon of interest was borne of real-life events (i.e., mistaken shootings of unarmed minority suspects by police officers) and examined both in the laboratory and with experts from the field. Inclusion of both samples allows for an investigation of whether or not implicit racial bias findings from the lab converge with those of officers who are accountable for decisions to use deadly force on the job. Another benefit of an investigation of police officers may be that "...implicit bias in decision-making from these studies can be directly connected to societal-level disparities" (Dasgupta & Stout, 2012).

Study 1: Overview

To examine the effect of different race/ethnic groups on the decision to shoot, we created a multiethnic environment in a computer task. We employed a four-group FPS task with target race randomly varying from trial to trial between Black, White, Latino, and Asian males.

Participants

Sixty-nine undergraduate students from the University of Colorado at Boulder participated in exchange for partial credit toward a course requirement. Participants were approximately equally divided on gender (34 males, 30 females, and 5 missing) and predominantly White (75% White, 2% Black, 5% Asian, 3% Latino, 3% Native American, and 8% other). Although there were too few Black participants in Study 1 to examine if Black and White participants performed differently on the FPS task, previous work found no evidence that bias varied between these groups (Correll et al., 2002).

Video Game Simulation

The original FPS task, developed by Correll and colleagues (see Correll et al., 2002), focused on bias in the decision to shoot Black compared to White males. To make a multiethnic version of the task, Latino and Asian American male targets were added. Latino and Asian college-aged males, recruited from three college campuses in the Denver metropolitan area, were paid $8 to be photographed holding four plastic guns (silver and black revolvers and automatic handguns) and four nonthreatening objects (black wallet, black cell phone, silver cell phone, and silver soda can) in each of five poses (e.g., standing with hand holding object positioned near the shoulder). Consent was obtained from all men to use their photographs in future research.

We chose new targets to be included in the shooter task based on a pilot study in which their race was correctly identified by a majority of police officers and community members.

Design

The multiethnic FPS task was based on the 4 (Target Race: Black vs. Latino vs. Asian vs. White) $\times$ 2 (Object: Gun vs. No Gun) within-participant design. During each trial, one to three preceding empty background scenes (e.g., a bus terminal or a city park) was presented for 200 to 500 ms each. The number of preceding backgrounds and the duration of the backgrounds were randomly determined per trial. Next, the target background appeared for 500–800 ms before the target photo appeared on the background. From stimulus onset, participants were required to respond within an 850 ms time window. Participants were instructed to "shoot" targets holding guns and to indicate "don't shoot" for targets holding innocuous objects. Responses were made on button boxes with the leftmost button labeled "don't shoot" and the rightmost button labeled "shoot" (the button box orientation was reversed for left-handed participants in order to have all participants "shoot"

with their dominant hand). Participants were instructed to leave their thumbs or forefingers over the buttons in between trials.

A point structure for trial-by-trial performance was used to make the game and its potential consequences, personally relevant for participants. Mirroring real life, the cost of mistakes was greater than the reward of accurate responses, especially the error of failing to shoot a threatening target. Correct responses earned five points (not shooting an unarmed target) or 10 points (shooting an armed target). Incorrect responses were more heavily weighted and cost 20 points (mistakenly shooting an unarmed target) or 40 points (failing to shoot an armed target). A time-out, or failing to respond within the 850 ms window, resulted in a 10-point deduction. At the end of each trial, participants received auditory and on-screen feedback regarding the points earned or lost during the trial and a cumulative point total.

The multiethnic FPS task included 20 targets for each racial group, each presented once armed and once unarmed. Thus, there were 40 test trials per race group and 160 test trials overall. Twenty-four practice trials were also included. The sequence of trials was randomly determined within practice and test trials. Reaction time and whether or not the decision was correct were recorded per trial.

Procedure

An experimenter met participants and guided them to individual cubicles for the duration of the study. The experimenter explained that participants were to quickly and accurately respond to photographs of males on-screen based on the type of object they held. Detailed instructions and the FPS task were presented using Psyscope software (Cohen, MacWhinney, Flatt, & Provost, 1993) on iMac desktop computers. Participants wore headphones to receive auditory feedback and reduce interference from participants in neighboring rooms. Finally, the experimenter instructed participants to fill out a questionnaire packet that was left in a manila envelope in the room after they finished the video game. Participants were thanked and debriefed at the end of the session.

Results and Discussion

Reaction Time

Reaction times for trials on which participants responded correctly (94.8% of trials across participants) were log-transformed. An average log-transformed reaction time was then computed for each participant for each type of target (e.g., Black with gun and White with no gun). Log-transformed reaction times were analyzed by a Target Race (Black or Latino or White or Asian) $\times$ Object (Gun or

Table 1. Reaction Time and Sensitivity as a Function of Object and Target Race (Study 1)

	Target race							
	Black		Latino		Asian		White	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Reaction time (ms)								
Gun	543_a	43	537_b	38	558_c	37	552_d	41
No gun	623_a	38	593_b	41	617_a	40	605_c	42
Average	583_a	36	565_b	36	588_c	35	579_a	37
Sensitivity (d')	3.55_a	.51	3.61_a	.52	3.39_b	.51	3.41_b	.58

Note. Differing subscripts within a row indicate significant differences, $p < .05$, except for the comparison between Black/unarmed and Asian/unarmed, $p < .06$. All sensitivity means significantly differed from zero, $p < .05$. $N = 69$.

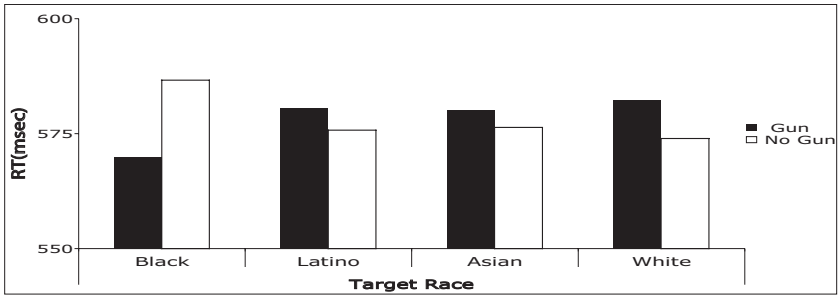

Fig. 1. Reaction time as a function of object and target race (Study 1).

Note. Reaction times were mean polished.

No Gun) repeated measures ANOVA. Means backtransformed to the millisecond metric are presented in Table 1 and Figure 1. Reported effect sizes are PREs that reflect the proportional reduction in error due to a predictor or planned contrast (Judd, McClelland, & Ryan, 2008). In the analyses we report, PRE is equivalent to a partial eta-squared.

There was a significant main effect of object, F (1, 68) = 299.00, $p < .001$, PRE = .81. Participants correctly responded more quickly, on average, to gun ($M = 548$) than no gun trials ($M = 610$). There was also a significant main effect of race, F (3, 204) = 51.24, $p < .001$. We tested all possible pairwise comparisons among target groups. On average, across the object held by targets, participants responded more quickly when making the correct decision for Latino targets ($M = 565$) than Black targets ($M = 583$), F (1, 68) = 108.16, PRE = .61, $p < .001$; White targets ($M = 579$), F (1, 68) = 54.91, PRE = .447, $p < .001$; and

Asian targets ($M = 588$), F (1, 68) = 17.22, PRE = .20, $p < .001$. Participants responded *more slowly* overall when making the correct decision to Asian targets than White targets, F (1, 68) = 17.22, PRE = .20, $p < .001$, or Black targets, F (1, 68) = 7.67, PRE = .10, $p = .007$. As in our previous work, the comparison in mean reaction times for Black versus White targets was not significant, F (1, 68) = 2.72, PRE = .035, *n.s.*

Of primary interest were the Race × Object interactions that gauge racial bias in the decision to shoot. The omnibus Race × Object interaction was significant, F (3, 204) = 16.81, $p < .001$. We tested all pairwise "simple" Race × Object interactions to examine the patterns of bias as a function of specific pairwise race comparisons. For example, we tested if responses to gun versus no-gun trials differed when the objects were held by Black versus Latino targets. Further, to interpret the Race × Object interactions, we applied a mean polish transformation to the reaction time data within each pairwise comparison. Rosnow and Rosenthal (1989) noted that researchers often misinterpret interactions by looking at simple effect tests among original cell means. This approach is problematic because differences in the original cell means also reflect lower order effects (e.g., main effects) thereby obscuring the nature of the higher order interaction. The advantage of using the mean polish transformation is that it expresses the mean reaction time for each cell of the Race × Object design as a residual from the average reaction time to that particular race and that particular object. For example, in the Latino/gun cell, the mean polished Latino/gun average is computed per participant as:

$$\mathrm{RT}_{\mathrm{Latino/gun\ mean\ polished}} = \left(\mathrm{RT}_{\mathrm{Latino/gun}}\right) - \left(\mathrm{RT}_{\mathrm{gun}}\right) - \left(\mathrm{RT}_{\mathrm{Latino}}\right) + \left(\mathrm{RT}_{\mathrm{Grand\ Mean}}\right)$$

where values are averages calculated per participant and per cell of the design. The mean polished cell value yields the difference in how a participant responds to Latinos who are armed removing both the main effect to respond faster overall to gun trials, and faster overall to Latino targets. We chose the mean polish transformation to aid in interpretation of racial bias effects because for the first time in this line of research, we found differences in how quickly participants responded to different races, across the type of object held (i.e., main effect of race).

Black targets versus all others groups. All Race × Object interactions involving Black targets were significant: Black versus White interaction, F (1, 68) = 45.83, PRE = .40, p < .001, Black versus Latino interaction, F (1, 68) = 22.18, PRE = .25, $p < .001$, and Black versus Asian interaction, F (1, 68) = 32.14, PRE = .32, $p < .001$. These effects demonstrate bias such that participants were especially likely to favor the "shoot" response over the "don't shoot" response when the target was Black rather than any other race.

Latino targets versus Asians and Whites. There were no significant Race × Object interactions comparing Latino and White targets or Latino and Asian targets, *F*s (1, 68) < 1, *PRE*s < .01, *n.s.*

Asian targets versus Whites. The Race × Object interaction for Asians and Whites was not significant, F (1, 68) = 1.40, PRE = .02, *n.s.*

Thus, in Study 1, we found consistent evidence of the interactive influence of race and object on reaction times only toward Black targets compared to targets of other races. As shown in Figure 1, we replicated the implicit racial bias found in previous research for Black versus White targets. Participants correctly responded more quickly on gun trials to Black than White targets but correctly responded more slowly on no-gun trials to Black than White targets. A strikingly similar pattern of bias emerged for Black compared to Latino or Black compared to Asian targets.

Signal Detection Analyses

We next examined if race influenced the pattern of errors versus correct decisions made based on the object that targets held. On average, participants made incorrect responses on 3.3% of trials and time-outs on 2.5%. Overall, participants performed quite well on the task, a pattern consistent with previous work with the FPS task that employed extended response windows (850 ms; Correll et al., 2002).

The number of correct and incorrect responses for a given target race was submitted to signal detection theory (SDT) analysis. SDT extrapolates two normal curves on a continuous judgment dimension from correct and incorrect responses to targets holding guns versus nonguns. For the FPS task, we conceive of this dimension as the amount of threat posed by targets. Placed on the dimension is one curve that represents the distribution of responses on no-gun trials (low threat) and another curve that represents the distribution of responses on gun trials (high threat). Two statistics are computed. First, the d' statistic, or *sensitivity,* assesses the degree of separation between the gun and no-gun curves. Higher d' values indicate that the curves do not overlap much, i.e., participants are able to discriminate between gun and no-gun trials and to make accurate responses in general (fire on armed targets, do not shoot unarmed targets). Lower d' values indicate that the curves overlap more and that participants mistakenly shoot when they should not (false alarm) or fail to shoot when they should (miss). The more overlapping the curves, the greater difficulty perceivers have in discerning weapons from nonthreatening objects. Second, the c statistic, or *decision criterion,* reflects the threshold at which targets are perceived as threatening enough to shoot. Although racial bias in the placement of the criterion has previously been found with the FPS task (e.g., Correll et al., 2002; Correll et al., 2007), there was only one significant pairwise race comparison on the decision criterion across studies. However, in

Table 2. Reaction Time and Sensitivity as a Function of Object and Target Race (Study 2)

	Target race							
	Black		Latino		Asian		White	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Reaction time (ms)								
Gun	548_a	41	537_b	40	575_c	37	573_d	37
No gun	640_a	36	615_b	37	629_a	39	639_c	37
Average	595_a	35	577_b	34	607_c	34	594_d	34
Sensitivity (d')	3.53_a	.51	3.66_b	.55	3.44_c	.59	3.46_c	.60

Note. Differing subscripts within a row indicate significant differences, ps $< .001$. Except average reaction difference between Black and White targets, $p < .10$. All sensitivity means significantly differed from zero, ps $< .05$. $N = 224$.

previous research, this result generally emerges when the response window for the task is 630 ms or less. Thus, the failure to find effects on the criterion in the current studies, which use an 850-ms time window, is not surprising. Analyses of this measure are not discussed further.

We computed d' values separately for each target group and found that the mean sensitivity (d') toward each group significantly differed from zero, all ts (68) > 48.84, ps $< .001$. The positive d' values in Table 2 indicate that participants distinguished guns from nonthreatening objects and, on average, were able to make appropriate decisions based on the object.

ANOVA. Sensitivity scores were submitted to a repeated measures ANOVA with Target Race (Black or Latino or White or Asian) as the within-participant factor. There was a main effect of target race, F (3, 204) = 6.20, PRE = .03, $p < .001$. More pertinent for our purposes were the pairwise comparisons of sensitivity between target groups. Results showed that accuracy was significantly higher toward Blacks and Latinos than toward Whites and Asians (Blacks vs. Whites, t (68) = 2.23, PRE = .07, $p = .029$, Blacks vs. Asians, t (68) = 2.73, PRE = .10, $p = .008$, Latinos vs. Whites, t (68) = 3.46, PRE = .15, $p < .001$, and Latinos vs. Asians, t (68) = 3.49, PRE = .15, $p < .001$). There was no evidence that participants were able to better discriminate guns from nonthreatening objects for Blacks than Latinos, t (68) = 1.12, *n.s.*, nor was there a difference between Whites and Asians, $t < 1$.

Racial bias in the amount of time needed to correctly determine whether or not to shoot Blacks perseveres in a multiethnic context. Participants were faster to correctly "shoot" a Black armed target than a White, Latino, or Asian armed target but slower to correctly "not shoot" a Black unarmed target than a White, Latino, or Asian unarmed target. There was no evidence, however, of race impacting the time

to respond to Latino versus White or Asian targets, or White versus Asian targets regardless of the object held. Thus, the perceived threat Blacks pose appears to overwhelm any potential threat from other groups. In Study 2, we investigate the extent to which such bias is found among police officers, and if the degree of bias varies as a function of community characteristics and individual differences in officer beliefs about the groups.

Study 2: Overview

Police officers are among a selected few whose job it is to make shoot/don't shoot decisions. Although guidelines exist to limit when deadly force may be used, there are nonetheless allowances for officer discretion to open fire. Chief among these is the perceived imminent threat posed by the suspect to innocent bystanders, fellow officers, or the officer himself/herself.

Factors that may be associated with threat, such as stereotypes about suspect race and aggression, may influence how a potentially deadly encounter unfolds. Prior work with the shooter task found that police officers were prone to the same bias in reaction times toward Black than White targets shown by college students and community members, though, importantly, their ultimate decision of whether or not to shoot was not affected by target race (Correll et al., 2007). One purpose of Study 2 was to investigate if the pattern of racial biases toward Blacks versus Latinos, Asians, and Whites found with college-aged participants in Study 1 would similarly be replicated among police officers.

The second purpose of Study 2 was to investigate if characteristics of the community and explicit personal beliefs and attitudes of officers might be affiliated with implicit multiethnic racial biases in the shooter task. Our prior work showed that the degree of racial bias in reaction times toward Black versus White targets in a sample of police officers from a variety of cities was associated with several characteristics of the community served. In particular, bias was larger for officers from larger cities, those cities with higher minority and/or Black populations, and for officers who perceived greater violent crime in the community served (Correll et al., 2007). Using a similar computer simulation, Peruche and Plant (2006) found that police officers with general negative expectations about Blacks tended to show more racial bias in reaction times on early task trials. Thus, research has shown that differences in racial bias toward Blacks than Whites may be related to both community characteristics and individual officer beliefs. The present study will extend prior work by examining the factors related to multiethnic racial bias toward Latinos and Asians.

To obtain variation in officers' experiences with Black, Latino, or Asian suspects, we recruited police officers from the Southeast, Southwest, and Northwest regions of the United States. Officers completed the four-group multiethnic FPS task and provided information about the community in which they served, their

history of service in law enforcement, and their beliefs and attitudes toward each of the four racial groups.

Method

Participants and Design

Police officers attending a voluntary two-day training seminar in the Southeast, Southwest, and Northwest were recruited. Officers were compensated $50 for their time. Two hundred and twenty-four officers participated (41% from a seminar in Florida, 35% from a seminar in New Mexico, and 24% from a seminar in Washington). Although many officers were from the state in which the seminar was held, 11 states were represented across the seminars. Most participants were patrol officers (61%) and male (86%). The majority of officers were Caucasian (53%) and Latino (31%). Fewer than 3% of the officers reported being African, Asian, or Native American (5% missing). Note that we found no evidence in Study 2 that officer race (minority versus White, or Latino versus White) was associated with differential racial bias in response times or accuracy, Fs $(1, 214) < 1$, *n.s.*

Police officers completed the 160 trial multiethnic FPS task with Black, Latino, Asian, and White male targets. The study was a Race (4: Black or Latino or Asian or White) $\times$ Object (2: Gun or No gun) within-participants design.

Materials

Intergroup attitudes. The discrimination scale (Wittenbrink, Judd, & Park, 1997) is an 11-item scale that gauges the extent to which people believe that discrimination toward African Americans is currently a problem. The scale was modified to address racial discrimination, in general, by substituting "ethnic minorities" for "Blacks." Example items included, "Members of ethnic minorities often exaggerate the extent to which they suffer from racial inequality," and "In the United States, people are no longer judged by their skin color." Ratings were made on a 1 (strongly disagree) to 9 (strongly agree) response scale. The scale was found to be reliable ($\alpha = .86$).

Stereotypes. The *stereotype rating scale* consisted of three items measuring the extent to which a group was viewed as aggressive, violent, or dangerous (Correll et al., 2002). For each item, participants marked an "X" on a 5-inch line with 12 evenly spaced tick marks, including endpoints. The line was anchored with not having the trait (e.g., not aggressive) to having the trait (e.g., aggressive). The *percent estimate task* also consisted of three items to assess the aggressiveness of a group, however, in this task, ratings were of the percent of people in the group who were believed to participate in specific behaviors. Participants rated what

percent of the group commits violent crimes, owns a handgun, and dies at the hands of an in-group member. Participants completed these stereotype measures twice, once for their personal stereotypes and once for cultural stereotypes. In the former case, they were asked to report their own personal beliefs. In the latter case, they were asked to rate how they believed "people in general in the United States would respond."

Intergroup contact was measured with three items for each group. Participants were asked the amount of contact they had with each racial/ethnic group in the neighborhood in which they spent the most time growing up, at the high school from which they graduated, and with childhood friends. Responses on each item could range from 1 (none) to 7 (many).

Community characteristics and demographics. Officers were asked to provide information about their history in law enforcement and the community they served. Officers reported the total number of years on the police force and in the department in which they were currently assigned. Officers estimated the rate of violent crime in their community relative to the FBI 2000–2002 rate of 500 offenses per 100,000 people. They chose between five options ranging from "much lower than average" to "much higher than average." In addition, we generated the extent to which officers over- or underestimated the amount of violent crime in their community by comparing the self-report percentages to those we gathered from the Uniform Crime Reports (2007) per city (or county, if city information was not available). Both variables were standardized, and then a difference score was computed ($Z_{\text{self-report}} - Z_{\text{UCR}}$).

The ethnic makeup of the community was also derived from two sources. Police officers estimated the percent of African, Asian, Latino, Native, and European Americans in the area. We also obtained U.S. Census Bureau (2000) information on the racial/ethnic makeup of the area served. Both variables were standardized and a difference score ($Z_{\text{self-report}} - Z_{\text{Census}}$) reflecting the degree to which officers over- or underestimated the percentage of a group in the community.

Officers also provided demographic information including their gender, ethnicity, education, and political orientation.

Procedure

Police officers were recruited to participate through announcements made each day as the seminar reconvened from lunch break. Officers reported to a room in the hotel in which the seminar was held. Participation took place in the evenings after the seminar concluded for the day. Although we could not isolate officers in individual cubicles, no more than two officers were seated at a table at a time and officers did not face each other during the study. To reduce disruption from other participants, officers wore headphones. Officers completed the FPS task on

Macintosh iBook laptop computers with 13-inch screens. The button boxes were the same ones used to collect responses in the laboratory in Study 1. Following the FPS task, officers completed the questionnaire packet and sealed it in a manila envelope. Officers were paid, thanked, and fully debriefed.

Results and Discussion

Reaction Time

Log-transformed reaction times for correct trials were analyzed by a Target Race (4: Black or Latino or White or Asian) × Object (2: Gun or No Gun) repeated measures ANOVA. All pairwise comparisons among target race groups (e.g., Black vs. Latino) and between target race pair and object (e.g., Black vs. Latino by Object interaction) were tested. Means backtransformed to the millisecond metric are presented in Table 2. There was a significant main effect of object, F (1, 223) = 1970.62, $p < .001$, PRE = .90. Participants were faster, on average, to gun ($M = 553$) than no gun trials ($M = 631$). There was also a significant main effect of race, F (3, 669) = 256.41, $p < .001$, PRE = .53. On average, across gun and no gun trials, participants were faster to correctly respond to Latino targets ($M = 575$) than Black targets ($M = 592$), F (1, 223) = 250.27, PRE = .53, $p < .001$, White targets ($M = 591$), F (1, 223) = 221.12, PRE = .50, $p < .001$, and Asian targets ($M = 605$), F (1, 223) = 795.80, PRE = .78, $p < .001$. Participants responded more slowly to Asian targets than White targets, F (1, 223) = 163.33, PRE = .42, $p < .001$, or Black targets, F (1, 223) = 141.61, PRE = .39, $p < .001$. There was no significant difference in mean reaction times for Black versus White targets, F (1, 223) = 1.23, PRE = .01, *n.s.* This pattern of results parallels that found in Study 1.

The omnibus Race × Object interaction was significant, F (3, 669) = 52.35, $p < .001$, as were all pairwise race × Object interactions (described below). As in Study 1, we used mean-polished values to aid in interpretation of the interactions.

Black targets versus all others groups. As shown in Figure 2, implicit racial bias was found toward Black versus White targets, F (1, 223) = 81.90, PRE = .27, $p < .001$, Black versus Latino targets, F (1, 223) = 22.47, PRE = .09, $p < .001$, and Black versus Asian targets, F (1, 223) = 189.06, PRE = .46, $p < .001$. As in Study 1, police officers correctly responded more quickly to guns, but more slowly to nonguns, held by Black targets than by targets of any other race.

Latino targets versus Asians and Whites. In addition, the Latino versus White, F (1, 223) = 16.00, PRE = .67, $p < .001$, and Latino versus Asian interactions were significant, F (1, 223) = 90.82, PRE = .29, $p < .001$. Officers showed racial bias in the decision to shoot Latinos relative to Whites and Asians.

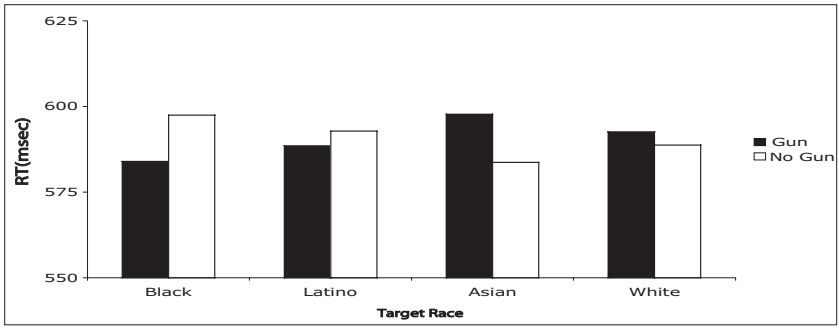

Fig. 2. Reaction time as a function of object and target race (Study 2).

Note. Reaction times were mean polished.

Asian targets versus Whites. We also found a significant Asian versus White × Object interaction, F (1, 223) = 24.90, PRE = .10, $p < .001$. Opposite to the typical pattern of bias toward racial/ethnic minorities, police officers were faster to shoot White than Asian armed targets, but slower to decide not to shoot White than Asian unarmed targets. In other words, racial bias was shown as a bias in favor of shooting Whites rather than Asians.

Signal Detection Analysis

Police officers performed well on the four-group FPS task with incorrect responses on 2.9% of the trials and time-outs on 2.6% of the trials. Sensitivity (d') scores were submitted to a repeated-measures ANOVA with target race (Black or Latino or White or Asian) as a within-participant factor. The means appear in Table 2. The main effect of target race was significant, F (3, 669) = 18.48, $p < .001$.

Black targets versus all others groups. Pairwise comparisons revealed that police officers were better able to discriminate weapons from nonthreatening objects when they were held by Black than White targets, F (1, 223) = 4.88, $p = .028$, PRE = .02, or Asian targets, F (1, 223) = 7.29, $p = .007$, PRE = .03. These results suggest that if minorities are policed differently than nonminorities (as posited by conflict theory), such differences are not due to poorer sensitivity toward Blacks. Unlike the results in Study 1, there was also a significant difference in sensitivity toward Black versus Latino targets among police officers, F (1, 223) = 24.40, $p < .001$, PRE = .10. Police officers evidenced higher levels of accuracy based on object for Latinos than Blacks.

Latino targets versus Asians and Whites. Similarly, sensitivity was higher to Latino than White targets, $F\ (1, 223) = 40.45$, $p < .001$, PRE $= .15$, or Asian targets, $F\ (1, 223) = 51.98$, $p < .001$, PRE $= .19$.

Asian targets versus or Whites. Overall accuracy to Asian and White targets was not found to differ, $F < 1$.

In sum, the pattern of sensitivity to objects as a function of target race found for police officers replicates the previous study reported herein, with one exception: police officers show higher accuracy to Latino than Black targets. Finally, it is interesting to note that reaction time bias and sensitivity bias were generally uncorrelated. The only exception was a significant negative relationship for White targets, $r\ (223) = -.16$, $p < .05$. The more bias in reaction times to White targets is, the less accurately participants responded to the objects White targets held.

Racial Bias Correlates

We were interested in the extent to which characteristics of the community and officers' experiences with, and beliefs about, Blacks, Latinos, Whites, and Asians related to bias in the FPS task. We correlated the composite score for each questionnaire measure with two variables computed from the FPS task: racial bias in reaction times and sensitivity in the task. Because we wanted to examine correlations separately for each target race, we calculated the simple effect of object type on the mean-polished reaction times per group (e.g., Object $\text{Effect}_{\text{Black}} = \text{Black RT}_{\text{No Gun}} - \text{Black RT}_{\text{Gun}}$), which represents the tendency to respond correctly to armed targets more quickly than to unarmed targets. This effect is important because it represents a predisposition to shoot: shooting armed targets quickly and choosing not to shoot an unarmed target slowly. The simple object effect was chosen because it can be examined for each group alone, rather than relative to another group (e.g., differences in reaction times toward Blacks by type of object rather than racial bias in reactions to Blacks versus Whites). Mean-polished values were used to isolate the effect of object for a particular target race, once the main effects of object and race were removed.

The bivariate correlations of beliefs and community characteristics to reaction time and sensitivity per target race and FPS task outcome are presented in Table 3. We also tested the partial relationships between individual beliefs and racial bias in reaction times and sensitivity controlling for community characteristics and vice versa. The pattern of effects was the same as with the bivariate correlations, indicating that the individual and community characteristics reported were uniquely related to bias.

Table 3. Correlations between Bias in Reaction Times, Accuracy, and Community Characteristics and Police Officer Beliefs

	Object effect (RT)				Sensitivity (*d'*)			
	Black	Latino	Asian	White	Black	Latino	Asian	White
Community characteristics								
Population of city officer serves	−.03	−.07	.04	.08	.04	.05	−.09	.02
Census% of race group	−.02	.06	.02	.04	−.04	.02	−.18*	.00
Self-reported violent crime	.05	.07	−.01	−.12+	−.07	.01	.00	.05
UCR violent crime	−.02	.01	.04	−.02	.03	.01	.11	−.14*
Violent crime difference	−.05	.16*	.04	−.13+	−.07	.03	−.02	.05
Police officer beliefs								
Personal stereotype rating	.06	.12+	−.02	−.03	.02	.04	.07	−.02
Personal stereotype percent estimate	.05	.13+	.07	−.11	.05	−.12+	.00	.03
Cultural stereotype rating	.01	−.05	.08	−.05	.17*	−.06	.11+	−.08
Cultural stereotype percent estimate	−.04	.04	.15*	−.10	.09	−.10	.10	.06
Contact with race group	.21*	−.04	−.01	−.01	.12+	−.04	.00	−.04
Discrimination scale	.14*	−.10	.04	−.05	.03	−.08	−.01	.05

Note. The object effect ($RT_{no\,gun} - RT_{gun}$) per target race was mean polished. Due to missing data, correlations are based on *N*s of 208 to 218. $^{*}p < .05$, $^{+}p < .10$.

Reaction Time Correlates

Community characteristics. We examined the reaction time bias to shoot as a function of community characteristics including measures of city population, the percentage of a target race in the community, and violent crime. Across target races, violent crime indices were often related to the bias to shoot. There was a tendency for the object effect (the bias to shoot) to decrease as perceptions of violent crime in an area increased, $r\ (206) = -.12$, $p = .083$. The violent crime difference was significantly positively related to the degree of bias to shoot Latino targets, $r\ (194) = .16$, $p = .025$, and marginally negatively related to the bias to shoot White targets, $r\ (194) = -.13$, $p = .063$. These correlations indicate that the more officers overestimated the amount of violent crime in their area compared to the Uniform Crime Reports (2007), he more bias shown toward Latinos, but the less bias shown toward Whites. There were no significant correlations regarding the overall size of the city or the number of members of a target race in the area, all *r*s $< .10$.

Officer beliefs. The officer beliefs we examined included personal and cultural stereotypes, attitudes toward racial/ethnic minorities in general, and the amount of contact with a target race. Reaction time bias to shoot Black targets increased as a function of both reported contact with Blacks, $r\ (206) = .21$,

$p = .002$, and prejudice reported on the discrimination scale, $r\ (206) = .14$, $p = .042$. Bias to shoot Latino targets was marginally associated with personal stereotypes as reported on the rating scale, $r\ (205) = .12$, $p = .079$, and the percent estimate task, $r\ (204) = .13$, $p = .068$. The more officers endorsed stereotypes of Latinos as violent and dangerous, the faster they tended to respond to armed than unarmed Latino targets. Racial bias toward Asian targets as a function of object was significantly higher, the more officers rated the cultural stereotype of Asians to be aggressive on the percent estimate task, $r\ (205) = .15$, $p = .033$. We found no significant relationships between beliefs about Whites and reaction time bias to shoot.

In summary, racial bias in reaction time across target races was associated with the extent to which officers overestimated the amount of violent crime in a community. As violent crime increased, bias to shoot Latino targets increased, but bias to shoot White targets decreased. Further, for Black targets, contact and discrimination predicted racial bias, whereas personal stereotypes were related to bias toward Latinos and cultural stereotypes were related to bias toward Asians. Though not wholly consistent, these observed relationships suggest that attitudes and/or stereotypes can affect bias in latencies among officers.

Sensitivity Correlates

Community characteristics. We also examined the relationships between racial bias in sensitivity and community characteristics. The amount of violent crime in an area was related to the ability to correctly distinguish a gun from a nonthreatening object. The more violent crime according to the Uniform Crime Reports (2007), the less able officers were to distinguish objects held by White targets, $r\ (206) = -.14$, $p = .041$. New in the accuracy data was a significant correlation between the proportion of Asians according to census data and discriminability for Asian targets, $r\ (206) = -.18$, $p = .008$. As the number of Asians increases in an area, accuracy in determining the object an Asian target held during the shooter task decreases.

Officer beliefs. Across target races, the pattern of significant relationships between officer beliefs and sensitivity was similar to that found for reaction times. For Black targets, the correlation between sensitivity and contact was marginally significant, $r\ (213) = .12$, $p = .068$. Officers who reported more contact with Blacks showed a tendency toward higher accuracy in distinguishing guns from nonthreatening objects. Although general discrimination was not related to the accuracy of responses to Black targets, there was a significant association between sensitivity and cultural stereotypes of Blacks, $r\ (212) = .17$, $p = .013$. The more violent and aggressive police officers perceived the cultural stereotype of Blacks to be, the more accurate they were in decisions of whether or not a Black target was

armed. For Latino targets, personal stereotypes on the percent estimate task were marginally related to sensitivity, $r\ (211) = -.12$, $p = .073$. The more aggressive their personal stereotype of Latinos, the less able officers were to accurately distinguish objects. For Asian targets, accuracy was marginally related to cultural stereotypes on the rating task, $r\ (213) = .11$, $p = .093$. As cultural stereotypes of Asians as aggressive increase, accuracy increases. None of the officer beliefs correlated significantly with accuracy toward White targets.

In summary, the community characteristics and officer beliefs associated with accuracy are similar to that found for reaction time bias, although the relationships are not always in the same direction and tended to be smaller in magnitude. Violent crime in an area was related to the ability to discriminate objects held by White targets. Greater sensitivity for Black targets was associated with more contact and sensitivity for Asian targets with higher cultural stereotypes, whereas sensitivity for Latino targets decreased for officers who more highly endorsed personal stereotypes.

General Discussion

We examined implicit racial bias in the decision to shoot Blacks, Latinos, Asians, and Whites. Replicating prior research, racial bias in response times to decide whether or not to shoot Black targets was pervasive. Interestingly, this was the only reaction time bias to emerge among college-aged participants. However, police officers showed additional racial biases in reaction times, on average, toward Latinos relative to Asians and Whites, and toward Whites relative to Asians, suggesting racial bias in the decision to shoot is not simply an anti-Black phenomenon.

To our knowledge, the current research is the first to find a differential pattern of racial bias in reaction times between participant samples, which highlights the importance of substantiating evidence garnered from convenience samples with field samples (Dasgupta & Stout, 2012). The multiethnic shooter task posed a greater challenge to participants, given that there were more irrelevant racial cues present in the task, and no predictability about which racial cue would occur from trial to trial. The difficulty of the task for college participants may have resulted in a tendency to default to the stereotype of Blacks as most aggressive. On the other hand, cultural stereotypes and local norms germane to the likelihood that groups will aggress may be more available and practiced among police officers. After all, police officers must constantly evaluate the potential threat posed by people. Several officers across conferences we attended spoke of searching for the "wolves" among the "sheep."

The second outcome considered was the accuracy of the decision to shoot. In contrast to the differential pattern of bias found for reaction times, both college participants and police officers were better able to distinguish weapons from

nonthreatening objects when held by Black and Latino targets than by Asian and White targets, an unexpected effect given our previous work (Correll, et al., 2002; Correll et al., 2007). We suspect that in the more challenging multiethnic shooter task, both participant samples may have shifted attention to Blacks and Latinos, the groups potentially more associated with threat. This result is consistent with recent evidence that suggests that threat-based attentional biases may serve as a mechanism for the impact of race on such decisions (Donders, Correll, & Wittenbrink, 2008; Trawalter, Todd, Baird, & Richeson, 2009). The P200, an event related potential (ERP) that reflects orientation to threatening stimuli in the environment, is greater in response to Black than White faces (Ito & Urland, 2005). Further, Correll, Urland, and Ito (2006) found that the more threatening Blacks were than Whites (as indexed by the P200), the greater the impact of race on the decision to shoot. If perceived threat differences can be inferred from racial bias in the FPS task (Correll et al., 2007), our results suggest that Blacks and Latinos may be more stereotypically associated with violence than Whites and Asians.

Finally, we examined if the degree of racial bias in reaction time and accuracy in the decision to shoot was related to community characteristics and personal beliefs reported by police officers. There was evidence that individual beliefs were related to the extent of bias, though the specific individual differences that correlated with beliefs depended on target groups. Officers who overestimated the amount of violent crime in a community showed a greater bias toward Latinos and less toward Whites. The personal beliefs most associated with racial bias varied with the target group, but were generally strongest for Blacks. Contact, discriminatory attitudes, and cultural stereotypes of aggressiveness and danger were related to bias toward Blacks. There was a trend for relationships between racial bias toward Latinos and personal stereotypes of Latino aggressiveness, and between bias toward Asians and cultural stereotypes about Asians. There was no evidence that bias toward Whites was related to personal beliefs.

Training

Although we cannot speak definitively to the genesis of the stereotypic association between violence and certain minority groups, such as Blacks and Latinos, our results suggest that even when race is not diagnostic for the task at hand, expectations regarding the danger posed by some groups, and further, individual variation in such beliefs, can affect response time. Stated differently, Black, Latino, Asian, and White targets were equally likely to appear armed or unarmed in the shooter task but the association of Blacks and Latinos with danger in U.S. culture may have led to faster correct responses to armed than unarmed targets from these groups compared to Whites and Asians, who are not associated with danger to the same degree. It is interesting to note that biases in reaction times toward Blacks and Latinos were overcome by the time a decision was made, and

in fact, there was no evidence that target race biased a police officer's ability to correctly shoot armed targets and to not shoot unarmed targets.

Our accuracy results seemingly bode well for police officers in that implicit racial biases affected the speed of responses but not behavior, but there is reason to temper the optimism in generalizing the results to officers in the field. First, a relatively long response window was used, possibly allowing both college students and police officers sufficient time to enact control over their decisions of whether or not to shoot. It is possible that participants were able to enact distraction-inhibiting goals to avoid basing decisions on race or response-facilitating goals to shoot only if they see a gun (Mendoza, Gollwitzer, & Amodio, 2010). In the field, however, the luxury of time and ability to focus on implementation intentions is far from guaranteed. Second, the environmental conditions under which police officers complete the FPS task may foster relatively high levels of accuracy. Officers are seated comfortably, distractions are reduced, and there is no possibility of imminent physical threat. In contrast, conditions vary greatly in the field that may compromise the performance. For instance, the average accuracy rate with which shots fired at suspects find their target is only about 20% (Geller, 1982). Factors that amplify the perceived threat in an encounter result in even lower accuracy such as a suspect with a firearm (Schade, Bruns, & Morrsion, 1989). Presumably, the average threat level is significantly higher on the job than in the lab. If so, the controlled processes needed to compensate for racial bias may not be implemented as easily. It is conceivable that race-based perceptions of threat (which seem to affect reaction times in the lab) may, in the real world, translate into the decision to open fire. If this is the case, racial biases may, in fact, play a role in encounters between police officers and suspects.

It may prove useful to broaden training considerations from how police officers react to suspect behavior ("passive" role of officers) to how they themselves behave as a situation unfolds (proactive role of officers). Mere expectation that a suspect will be violent may engender a self-fulfilling prophecy: the officer may behave in such a way to elicit aggressive behavior from the suspect resulting in an escalation of the situation. Binder and Scharf (1980) suggested that decisions made in early stages of an encounter predict whether an officer is likely to open fire as the encounter unfolds. Fridell and Binder (1992) found that a crucial stage leading to a decision to open fire is that of information exchange between officer and suspect. Situations in which an officer was unable to ascertain pertinent information, or when suspects were agitated or noncompliant, were more likely to end with use of deadly force.

We argue that it is precisely in the early stages of an encounter that expectations police officers hold based on race, neighborhood, gender, etc., may unintentionally influence officer behavior and contribute to an escalation of the situation. A poignant anecdote comes from a conversation the first author had with a young Black male officer. He relayed a conflict between the Black culture in which he

was raised and the police training he received regarding how to interact with a suspect. In his neighborhood, making eye contact with someone, particularly in a tense situation, was a sign of aggression. Compliance, on the other hand, was accomplished by avoiding eye contact. In dramatic contrast, as a police officer he was trained that lack of direct eye contact by a suspect was suspicious and associated with noncompliance. Such differences in the interpretation of nonverbal cues are likely to have marked effects on the progression of an encounter. To reduce the influence of such factors in escalation of police-community encounters, it may be beneficial for police departments to assign officers to districts in which they grew up whenever possible. We do not intend to suggest that it is necessary for officers to be of the same race as the community they serve, only that officers from the district are likely to be familiar with the neighborhood norms for verbal and nonverbal cues to aggression. It should be noted that our data cannot speak directly to this issue, but nonetheless, it may be fruitful for future research to pursue.

Another avenue for police departments to pursue is simulation training. Research has shown that those officers trained with a combination of video and "live fire" simulation training took more preventive actions to avoid escalation in subsequent encounters (Helsen & Starkes, 1999). It is possible that implementing such training would reduce the impact of suspect race on how an encounter progresses (cf. Reisig, McCluskey, Mastrofski, & Terrill, 2004).

Limitations and Extensions

An advantage of implementing an experimental approach to the study of race and the decision to shoot is the ability to manipulate race independently of other factors that may covary with race in the real world. Targets were presented on a common set of backgrounds, their dress was similar (e.g., no ball caps, jackets), and they stood or kneeled in select stances. Because race was not diagnostic of weapon held, we could determine if prior expectations on the part of perceivers were associated with bias in the FPS task. However, the control was achieved at the cost of external validity. We are currently conducting research using a video simulation method that police departments across the country use to provide interactive training to officers. This research brings us one step closer to emulating the psychological and physiological stress officers experience in encounters with suspects, and thus, to an examination of the impact of suspect race in the field.

Our investigation of racial bias provided an extension to prior work through inclusion of three distinct minority groups as targets rather than solely African Americans. We demonstrated that the extent to which bias was present depended on the subject population. College students were biased against African–Americans, whereas police officers evidenced bias toward Latinos in addition to African Americans, and to a differential degree depending on individual differences, such as level of contact or stereotype endorsement. A limitation of this work, however,

derives from the fact that it was conducted with U.S. participants. Although our intuition is that treatment of specific minority groups would depend both on the cultural context, i.e., on the stereotypes regarding dangerousness of particular groups in a culture, and variations in belief in the beliefs propagated within that context, it will be the charge of future studies to determine what factors contribute to racial bias cross-culturally (Sampson & Lauritsen, 1997).

Conclusion

Most social psychological work on racial biases in the United States has focused on African Americans and how they are discriminated against in the context of a society dominated by Whites. Our own previous reports of implicit racial bias are very much in this tradition. The present work is based on the premise that an increasingly diverse American society demands that we assess patterns of bias toward multiple ethnic and racial target groups. Doing so highlights the ubiquity of bias in the FPS paradigm against African Americans relative to Whites. But it also brings to light some evidence of bias against Latinos, and bias in favor of Asians (again, relative to Whites). Given that the United States continues to evolve into an increasingly multiethnic nation, research that speaks to such complexity becomes ever more important.

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