

Implicit motivation to control prejudice

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Abstract

This research examines whether spontaneous, unintentional discriminatory behavior can be moderated by an implicit (nonconscious) motivation to control prejudice. We operationalize implicit motivation to control prejudice (IMCP) in terms of an implicit negative attitude toward prejudice (NAP) and an implicit belief that oneself is prejudiced (BOP). In the present experiment, an implicit stereotypic association of Blacks (vs. Whites) with weapons was positively correlated with the tendency to “shoot” armed Black men faster than armed White men (the “Shooter Bias”) in a computer simulation. However, participants relatively high in implicit negative attitude toward prejudice showed no relation between the race-weapons stereotype and the shooter bias. Implicit belief that oneself is prejudiced had no direct effect on this relation, but the interaction of NAP and BOP did. Participants who had a strong association between self and prejudice (high BOP) but a weak association between prejudice and bad (low NAP) showed the *strongest* relation between the implicit race-weapons stereotype and the Shooter Bias, suggesting that these individuals freely employed their stereotypes in their behavior.

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Recent theoretical and empirical developments in three areas of research on social cognition converge to suggest that some people may have implicit (i.e., nonconscious) motivations to control their prejudice and thereby inhibit unintended, automatic discriminatory behavior. First, research on implicit intergroup attitudes (e.g., Greenwald & Banaji, 1995) has revealed that they operate outside of conscious awareness and predict unintended, automatic behaviors (Cunningham, Preacher, & Banaji, 2001; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997). Second, research employing questionnaire measures of motivations to control prejudice (Dunton & Fazio, 1997; Plant & Devine, 1998) has demonstrated that there are meaningful individual differences in such motivations that moderate the explicit expression of prejudice (e.g., Fazio, Jackson, Dunton, & Williams, 1995). Finally, recent studies have

indicated that, like cognitions and affect, goals and motives can exist and operate outside of conscious awareness and control (Chartrand & Bargh, 1996; Glaser & Banaji, 1999; Glaser & Kihlstrom, 2005; Shah & Kruglanski, 2003). It follows from these lines of research that goals to be egalitarian may also operate outside of conscious awareness and control, and if they do they could serve to inhibit unintended, automatic prejudiced attitudes and behavior—processes previously presumed to be uncontrollable (Bargh, 1999). Accordingly, the purpose of the present study is to investigate a new construct, Implicit Motivation to Control Prejudice (IMCP), which is distinct from its questionnaire-assessed counterparts in that it reflects processes that operate outside of conscious awareness and control and is capable of inhibiting automatic expressions of prejudice.

Recent research suggests that motivation to control prejudice can operate implicitly and automatically. Studies using Plant and Devine’s (1998) Internal and External Motivation to Respond without Prejudice Scales

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have yielded relevant results. These researchers' Internal subscale (IMS) is designed to assess personally endorsed, internalized goals to be non-prejudiced. The External subscale (EMS), on the other hand, aims to tap more extrinsic concerns about appearing prejudiced. Those high in IMS and low in EMS, accordingly, are theorized to have the purest, most intrinsic egalitarian motives that are more likely to be deeply internalized. In fact, Devine, Plant, Amodio, Harmon-Jones, and Vance (2002) found that those who were high in IMS and low in EMS exhibited less implicit race bias in a sequential priming task. Similarly, Hausmann and Ryan (2004) reported that IMS was negatively related to implicit bias. Amodio, Harmon-Jones, and Devine (2003) found that high IMS/low EMS participants exhibited less race bias as indexed by differential startle eyeblinks to Black and White face stimuli. Although suggestive of implicit motivation and automatic control, because these studies measure only the relation between IMS/EMS and implicit bias their results could be explained by high-IMS/low-EMS people actually having less bias, as opposed to controlling their bias.

The most direct evidence of implicit motivation to control prejudice comes from work by Moskowitz, Gollwitzer, Wasel, and Schaal (1999). These researchers' indirect measure of "chronic egalitarianism" predicted the inhibition of stereotype activation. They assessed chronic egalitarianism by measuring participants' attempts to compensate for having previously exhibited gender stereotyping, and found that those high, but not low, in chronic egalitarianism failed to exhibit automatic gender stereotyping. Moskowitz et al. (1999, Experiment 4) provided more direct evidence of stereotype inhibition, finding negative priming of gender attributes among high chronic egalitarians only.

Measuring implicit motivation to control prejudice

Research on nonconscious cognitions and evaluations has employed methods that afford relatively direct inferences, specifically measuring the strengths of associations by the speed of responding to paired stimuli. Motivations, however, appear to be different in this regard. While they can be primed—even subliminally (e.g., Shah & Kruglanski, 2003)—measuring them in a similar manner is more complex, perhaps due to their dynamic nature. They do not represent an association between two static constructs but rather a drive toward a desired state.

Although it might not be possible to measure implicit motivations directly, we propose measuring two logical antecedents: an implicit *negative attitude toward prejudice* (NAP) and an implicit *belief that oneself is prejudiced* (BOP). Our theory holds that these two implicit orientations, NAP primarily, and BOP, secondarily, should be influential with regard to the nonconscious control of unintended discriminatory behavior.

Implicit negative attitude toward prejudice (NAP)

We reasoned that IMCP would be linked, first and foremost, to an implicit *negative attitude toward prejudice* (NAP). Specifically, individuals who possess a deeply ingrained, reflexive distaste for prejudice ought to have internalized a similarly implicit motivation to avoid it; conversely, there is little reason to expect individuals with no particular distaste for prejudice to possess a deeply ingrained drive to avoid it.

Implicit belief that oneself is prejudiced (BOP)

While NAP alone may constitute an effective measure of IMCP, we also sought to determine whether another implicit association might augment or attenuate NAP's effectiveness in this regard. Specifically, an implicit *belief that oneself is prejudiced* (BOP) might play an important role in translating individuals' attitudes toward prejudice into a motivation to avoid it. Individuals high in NAP, but who consider themselves immune to bias (i.e., are low in BOP), might not be implicitly motivated to avoid bias. Similarly, those high in BOP would not be motivated to avoid bias if they do not think it is a bad thing (i.e., they are low in NAP).

Measuring NAP and BOP

We used the Implicit Association Test (IAT), a well-validated measure of automatic attitudes and beliefs (Cunningham et al., 2001; Nosek, Greenwald, & Banaji, 2005), to assess NAP and BOP. To measure NAP we constructed an IAT that pairs the categories "prejudice" and "tolerance" with the categories "bad" and "good." BOP was assessed with an IAT pairing "prejudiced" and "tolerant" with "me" and "not me."

IMCP and the inhibition of unintended discriminatory behavior

It has been shown that explicit motivation to control prejudice moderates the relation between implicit prejudice and explicit prejudice (Fazio et al., 1995), that those high in IMS and low in EMS exhibit lower levels of implicit bias (e.g., Amodio et al., 2003; Devine et al., 2002), that those merely high in IMS can also exhibit less implicit bias (Hausmann & Ryan, 2004), and that those high in chronic egalitarianism inhibit automatic stereotype activation (Moskowitz et al., 1999). What then, would IMCP uniquely predict? Although questionnaire measures have shown weaker implicit stereotyping among those high in motivation to control prejudice, it remains possible that the vestiges of those stereotypes nevertheless influence spontaneous behavior. If IMCP reflects a truly nonconscious goal, it should have the effect of inhibiting automatic discriminatory behavior *even in the presence of* implicit stereotypes. A strong test of IMCP would therefore involve

demonstrating a moderating effect on the relation between an implicit stereotype and a related automatic discriminatory behavior.¹

We designed an experiment to test this hypothesis. In addition to using our IAT measures of NAP and BOP to assess IMCP, we employed a race-weapons stereotype (RWS) IAT (Blacks/Whites and weapons/tools) and an adaptation of the “Shooter Task,” a computer simulation developed by Correll, Park, Judd, and Wittenbrink (2002) involving a series of images wherein a Black or White man is holding either a gun or a benign object. Participants are instructed to “shoot” or indicate safety as quickly as possible when there is a gun or benign object, respectively. Correll et al. (2002) found participants to be faster and more likely to shoot when the target is Black and to indicate safety when the target is White. They also found that the Shooter Bias was related to the stereotype of Blacks as dangerous. The purpose of the present study is to test whether our operationalization of IMCP moderates a similar relationship. The use of the shooter task is especially important because, due to the speeded nature of the procedure and the strong stigmatization of racial bias in policing, the “Shooter Bias” (proneness to shoot Blacks) almost certainly reflects an unintended form of discrimination that one would control if one could.

Method

Participants

Forty-eight University of California, Berkeley undergraduate students participated for partial credit toward psychology courses. Thirty-one were women. Twenty-six reported being East Asian, 18 White, three Latino/Latina, and one South Asian.

Procedure

Participants performed a series of computerized tasks in the following fixed order: Shooter Task, BOP IAT, NAP IAT, Race Prejudice IAT, and Race-Weapons Stereotype (RWS) IAT. Following the computerized tasks, participants answered a series of questions, including several scales relating to prejudice and motivation to control prejudice, presented in random order. The implicit measures were given first because they were of primary interest, and their order was fixed to minimize error variance because we

were investigating relations among the constructs rather than absolute levels of any particular bias.

The shooter task

The Shooter Task used in this study is adapted from the procedure developed by Correll et al. (2002)² to assess the tendency to shoot or refrain from shooting Blacks vs. Whites who are or are not holding guns. The “Shooter Bias” is a greater facility to shoot Blacks with guns and/or indicate safety for Whites without guns. In our procedure, each participant carried out a series of 56 experimental trials separated by 1 s intervals. In each trial, a “get ready” screen appeared for 1.5 s, followed by an image of a location (e.g., street corner, shopping plaza). After an interval of 1, 2, 3, or 4 s, an image of a man appeared near the center of the background. He was either Black or White and holding either a gun or a benign object (i.e., cell phone or soda can). When the target held a gun, the participant, grasping a computer gamestick, was supposed to squeeze the trigger as quickly as possible. When the target did not have a gun, the participant was supposed to pull back on the gamestick to indicate safety. Each participant had fourteen trials in each condition, and there were ten different men from each race serving as targets.

Implicit negative attitude toward prejudice

The hypothesized antecedent of IMCP, an implicit negative attitude toward prejudice (NAP), was measured using an IAT that paired categorizations of *bad* (sample stimuli: gloom, pain) vs. *good* (joy, warmth) with categorizations of *prejudiced* (unjust, bigoted) vs. *tolerant* (accepting, inclusive). Participants had sets of 10 practice trials wherein they did the categorizations for each dimension (*bad* vs. *good*; *prejudiced* vs. *tolerant*) separately and then combined before a data collection block including 40 randomly ordered trials (ten trials for each category). The task was to hit one of two possible response keys (left vs. right) to indicate the category to which each word belongs. In an IAT, when categories are conceptually compatible (e.g., *flowers* with *pleasant* and *insects* with *unpleasant*), people tend to respond faster, and the test has proven effective in tapping meaningful individual and group differences in implicit attitudes and beliefs (e.g., Greenwald, McGhee, & Schwartz, 1998; Greenwald, Nosek, & Banaji, 2003). For the NAP measure, faster responding when *bad* and *good* are paired with *prejudiced* and *tolerant*, respectively, should reflect an implicit negative attitude toward prejudice.

Implicit belief that oneself is prejudiced

In order to test the effect of implicit belief that oneself is prejudiced (BOP), we created an IAT measure that paired categorizations of *me* (sample stimuli: I, me, my) vs. *not-me*

¹ One might reasonably expect IMCP to predict lower rates of implicit stereotyping because stereotype activation would be inhibited. While we cannot rule this possibility out, and while it could undermine the power of our test, it seems more likely that implicit stereotypes would be activated (and therefore measurable) and then inhibited prior to influencing behavior. This may be akin to what Eimer and Schlaghecken (2002) describe as “inhibition following activation” and Maier, Berner, and Pekrun (2003) call “activation dependent inhibition.”

² A similar procedure was developed and validated by Greenwald, Oakes, and Hoffman (2003), but the procedure we adopted is closer to that of Correll et al. (2002) and, in fact, employs many of their stimulus photographs, which they generously shared.

(they, them, their) with *prejudiced* vs. *tolerant*. The procedure was identical to that of the NAP IAT except that the *bad/good* categorization was replaced by *me/not-me*. For the BOP measure, faster responding when *me* and *not-me* are paired with *prejudiced* and *tolerant*, respectively, should reflect an implicit belief that oneself is prejudiced.

Implicit Race-Weapons stereotype

Correll et al. (2002) reported a positive correlation between knowledge of a cultural stereotype (participants' self-reported beliefs about the extent to which Americans associate Blacks more than Whites with danger, aggression, and violence) and the Shooter Bias. We hypothesized that those high in IMCP would be motivated to prevent stereotypes from influencing their behavior. Accordingly, we employed a race-weapons stereotype (RWS) IAT pairing categorizations of Black- and White-sounding names (e.g., Malik, Tyrone, Chip, Brad) with categorizations of words naming either weapons (e.g., gun, pistol) or tools (e.g., chisel, wrench). The extent to which one is faster to make the categorizations when Black and weapons are paired should reflect a stereotypic association between race and weapons, if not danger more generally. We also administered a standard *Black/White-bad/good* IAT (e.g., Greenwald et al., 1998), referred to as Implicit Preference for Whites (IPW). Correll et al. (2002) had not found prejudice to be related to the Shooter Bias (and neither did we in this study).

Explicit questionnaire measures

After the implicit measures were administered, a series of questionnaires were presented, in random order, on the computer. Explicit measures of motivation to control prejudice were included. Specifically, Dunton and Fazio's (1997) Motivation to Control Prejudiced Reactions (MCPR) scale and Plant and Devine's (1998) Internal and External Motivation to Respond without Prejudice Scales (IMS and EMS, respectively) were administered. The two latter subscales are intended to assess intrinsic, personally important (internal) motivations for avoiding prejudice and motivation reflecting extrinsic, societal (external) pressures.

To assess explicit prejudice, Katz and Hass's (1988) Pro-Black/Anti-Black Attitudes Questionnaire was used, as was McConahay, Hardee, and Batts's (1981) Modern Racism Scale. Finally, participants were asked to self-identify their political ideology on a seven-point scale from "very liberal" to "very conservative."

Predictions

Of greatest importance for the purposes of this study were the relations among implicit associations and automatic discriminatory behavior as operationalized with Shooter Bias. First, in a conceptual replication of a Correll et al. (2002) finding, we expected that the RWS would predict the Shooter Bias, indicating that the tendency to shoot

Black men faster reflects at least in part an association between Blacks and weapons.

Questionnaires assessing motivation to control prejudice should not generally predict unintended behavior. However, Plant and Devine's Internal Motivation to Respond without Prejudice subscale (IMS), as well as the interaction of IMS and EMS, posed some promise to do so, given that these indices are intended to reflect deeply internalized goals and have been shown to relate negatively to implicit stereotypes. Any negative relation between IMS and Shooter Bias could be due to lower levels of implicit bias among those high in IMS. However, we hypothesized that neither IMS, EMS, nor the interaction of IMS and EMS would moderate the relation between an implicit stereotype (RWS) and a spontaneous discriminatory behavior (Shooter Bias). IMCP, on the other hand, representing a truly implicit goal, should be able to short-circuit the effect of implicit anti-Black stereotypes on automatic anti-Black behavior. We expected a weaker relation between RWS and Shooter Bias among those high in IMCP than among those low in this motivation. Our primary index of IMCP was NAP; however, we also sought to examine whether any effect of NAP on the stereotype-behavior link might be conditioned on participants having some association between prejudice and the self (i.e., BOP).

Results and discussion

Table 1 presents means, standard deviations, and correlations between all measured independent variables in the present study.

Computation of IAT Scores

Following Greenwald and colleagues (1998), we eliminated outliers by replacing latencies under 300 ms and over 3000 ms with 300 and 3000 ms, respectively. We then subjected the data to reciprocal transformations. In addition to further normalizing the distribution, this transformation had the effect of converting the latency metric into one of reaction speed, wherein higher values reflect faster responses.

Participants' IAT scores were assessed using the size of the effect of test block (conceptually compatible vs. conceptually incompatible) on reaction speeds (Greenwald, Nosek et al., 2003). The measure of effect size was Cohen's *d* (Cohen, 1977). Thus, we subtracted each participant's mean reaction speed in the incompatible block from his or her mean speed in the compatible block, and then divided this difference by the participant's pooled standard deviation. To illustrate, for the IAT assessing NAP, the mean reaction speed in the incompatible block (*good+ prejudice*) was subtracted from the mean speed in the compatible block (*bad+ prejudice*); this difference was divided by the participant's overall standard deviation of speeds. The resulting index reflects the relative ease with which a participant

Table 1
Means and standard deviations of, and correlations between, independent variables ($N = 48$)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Pro-Black/Anti-Black	3.47	0.68	—	.50***	.38**	-.32*	.05	.15	.40**	.22	-.16	.00
2. Modern Racism	2.02	0.61	—	—	.38**	-.41**	-.18	.27†	.24	.23	.03	.20
3. EMS	4.46	1.75	—	—	—	.19	.41**	.09	.34*	.05	-.19	.00
4. IMS	7.01	1.62	—	—	—	—	.55***	-.21	-.16	-.42**	-.04	-.28†
5. MCPR	4.18	0.83	—	—	—	—	—	.07	.31**	-.34*	-.14	-.11
6. Conservatism	3.67	1.28	—	—	—	—	—	—	.06	.04	.12	-.26†
7. IPW IAT	0.83	0.65	—	—	—	—	—	—	—	-.09	-.21	.01
8. NAP IAT	1.43	0.59	—	—	—	—	—	—	—	—	.00	.15
9. BOP IAT	-.041	0.45	—	—	—	—	—	—	—	—	—	-.01
10. RWS IAT	0.34	0.49	—	—	—	—	—	—	—	—	—	—

Note. EMS/IMS = External and Internal Motivation to Respond without Prejudice Scales (Plant & Devine, 1998). MCPR = Motivation to Control Prejudiced Reactions (Dunton & Fazio, 1997). IPW = Implicit Preference for Whites. NAP = Negative Attitude toward Prejudice. BOP = Belief that Oneself is Prejudiced. RWS = Race-Weapons Stereotype. IAT = Implicit Association Test (Greenwald et al., 1998). Means for IATs reflect average z -scored effects for different reaction speeds between blocks.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

† $p < .10$.

mapped single responses onto category pairs that are compatible with the construct being measured (a higher value reflects a more negative attitude toward prejudice).

Shooter bias data preparation

Following Correll and colleagues' (2002) analysis of reaction latencies in the shooter task, we included only correct responses (in which participants fired at armed targets or pulled back for unarmed targets) in the analyses. Participants responded correctly 92.4% of the time. To prepare the shooter data for analysis, we first normalized participants' reaction latencies by (a) discarding latencies shorter than 300 ms or longer than 2000 ms (resulting in the loss of 4.2% of trials) and reciprocally transforming reaction latencies (thus creating a measure of reaction speed).

Replication of previous findings

Correll and colleagues (2002) found that cultural stereotypes about Blacks moderated Shooter Bias. We first examined whether we succeeded in replicating this effect. Because the shooter task data were nested, with 56 trials per participant, hierarchical linear modeling in HLM 6.0 (Raudenbush, Bryk, Cheong, & Congdon, 2004) was used. We began by constructing a level-1 equation describing individual participants' behavior in the shooter task. In this equation, target race (TR), object type (OT), and their interaction (reflecting the Shooter Bias) predicted reaction speeds. Four level-2 (between-subjects) equations were created, each of which used RWS and Implicit Preference for Whites (IPW) as predictors of one within-subject effect (including the within-subject intercept).

Table 2 summarizes results for the model predicting reaction speed in the shooter task. The interaction of target race by object type, reflecting the Shooter Bias, was not sta-

Table 2
HLM Analysis of Reaction Speed in the Shooter Task as a Function of Race-Weapons Stereotype (RWS) and Implicit Preference for Whites (IPW)

Variable	B	SE B	df	<i>t</i>
Intercept	1.47	0.04	45	35.62***
Target Race (TR)	0.02	0.01	45	2.65*
Object Type (OT)	0.21	0.02	45	11.24***
TR × OT (Shooter Bias)	0.01	0.01	45	1.12
Race-Weapons Stereotype (RWS)	-0.07	0.11	45	-0.58
Implicit Preference for White (IPW)	-0.01	0.05	45	-0.13
RWS × TR	-0.00	0.02	45	-0.15
RWS × OT	0.03	0.05	45	0.65
RWS × Shooter Bias	0.07	0.03	45	2.17*
IPW × TR	-0.01	0.01	45	-1.01
IPW × OT	-0.01	0.03	45	-0.51
IPW × Shooter Bias	-0.01	0.02	45	-0.54

Note. Target race is dummy coded such that -1 = White and 1 = Black; object type is coded such that -1 = benign and 1 = gun.

* $p < .05$.

*** $p < .001$.

tistically significant in this model.³ Of greater interest, however, is the effect of the race-weapons stereotype on the interaction term embodying the Shooter Bias. Consistent with Correll et al. (2002), the cross-level interaction

³ Variance in the degree and direction of stereotype endorsement points to one reason for our failure to replicate Correll et al.'s (2002) typically robust Shooter Bias effect. That is, our sample appears to have held stereotypes linking Blacks and weapons/aggression/danger to a lesser extent than did Correll and colleagues' participants. In Correll et al. (2002, 2003), participants one *SD* below the mean on the stereotype measure reported an anti-Black stereotype, whereas similarly low scorers on our RWS IAT evidenced a stronger association between Whites and weapons. Further, the adaptation of the Shooter Task reported here may have been less sensitive than the procedure developed by Correll and colleagues. In the service of shortening and simplifying the task, we used fewer trials, eliminated time pressure and rewards for speed and accuracy, and presented only one background per trial.

between RWS and Shooter Bias was significant. In order to visualize this interaction, we graphed predicted reaction latencies (reconverted from speeds for ease of interpretation) in accordance with procedures articulated by Aiken and West (1991). Fig. 1 depicts the shape of the Shooter Bias interaction for individuals one *SD* below and one *SD* above the mean on the RWS IAT; these levels reflected a mild reverse stereotype associating Whites with weapons ($d = -0.15$) and a strong stereotype associating Blacks with weapons ($d = 0.83$), respectively. Individuals possessing a relatively strong stereotype linking Blacks and weapons clearly show the Shooter Bias: They were faster to shoot armed Blacks than armed Whites and slower to indicate safety to unarmed Blacks than unarmed Whites. In contrast, individuals possessing a mild *White + weapons* stereotype exhibited the reverse of Shooter Bias.

Primary analyses

Our primary hypothesis was that IMCP would moderate the influence of race-weapons stereotypes on the Shooter Bias, such that individuals high in IMCP—as proxied using NAP and BOP—would exhibit the weakest association between RWS and Shooter Bias. To the extent that disliking a behavior should motivate one to try to inhibit it, NAP should moderate the effect of RWS on Shooter Bias. But one’s beliefs about one’s own proneness to that behavior should also be influential. To test these questions, we constructed a two-level model in which NAP, BOP, RWS, and each of their two- and three-way interactions were used to predict the level-1 effects of target race, object type, and the crucial Target Race × Object Type (Shooter Bias) interaction.

Table 3 displays partial results for this model; because testing a five-way interaction involves testing a great many lower-order interactions, only those subsidiary interactions worthy of comment are shown. First, in this more complex model, the Shooter Bias interaction was more robust, and

Table 3

HLM Analysis of Reaction Speeds in the Shooter Task as a Function of Race-Weapons Stereotype (RWS), Negative Attitude toward Prejudice (NAP), and Belief that Oneself is Prejudiced (BOP)

Variable	B	SE B	df	t
Target Race × Object Type (Shooter Bias)	0.01	0.01	40	1.88 [†]
Belief that Oneself is Prejudiced (BOP)	0.08	0.08	40	1.07
Negative Attitude toward Prejudice (NAP)	-0.04	0.09	40	-0.47
Race-Weapons Stereotype (RWS)	-0.03	0.10	40	-0.32
BOP × NAP	-0.28	0.16	40	-1.76 [†]
BOP × Shooter Bias	-0.02	0.02	40	-1.30
NAP × Shooter Bias	0.02	0.01	40	1.17
RWS × Shooter Bias	0.05	0.02	40	3.03**
BOP × NAP × Shooter Bias	0.07	0.04	40	1.88 [†]
BOP × RWS × Shooter Bias	0.06	0.04	40	1.46
NAP × RWS × Shooter Bias	-0.10	0.03	40	-3.39**
BOP × NAP × RWS × Shooter Bias	-0.22	0.09	40	-2.38*

Note. Target race is dummy coded such that -1 = White and 1 = Black; object type is coded such that -1 = benign and 1 = gun.

* $p < .05$.

** $p < .01$.

[†] $p < .10$.

marginally significant. Second, the influence of RWS on Shooter Bias remained significant. Neither NAP nor BOP alone was significantly related to the Shooter Bias. The BOP × NAP interaction effect on Shooter Bias was the opposite of what one might expect, reflecting greater bias for higher levels of NAP and BOP; however, this effect is only marginally significant.

Turning to the central question of what moderates the link between RWS and Shooter Bias, NAP significantly qualified the influence of the race-weapons stereotype on the Shooter Bias. Fig. 2 depicts the effect of NAP on the RWS-Shooter Bias relation. In the graph, each line represents the effect of RWS on the Shooter Bias for participants exhibiting relatively high or low levels of NAP (i.e., one *SD* above or below the mean). The high NAP line is essentially flat, $p = .80$, indicating that for those whose implicit attitude toward prejudice is particularly negative, the strength of their implicit stereotype is not related to the strength of their unintended discriminatory behavior. In contrast, the

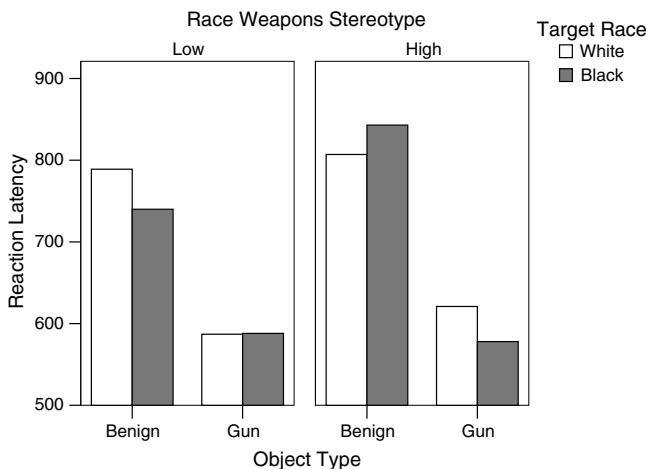


Fig. 1. Reactions latencies in the shooter task as a function of target race (Black vs. White), object type (benign vs. gun), and participants’ Race-Weapons Stereotype (RWS; low vs. high).

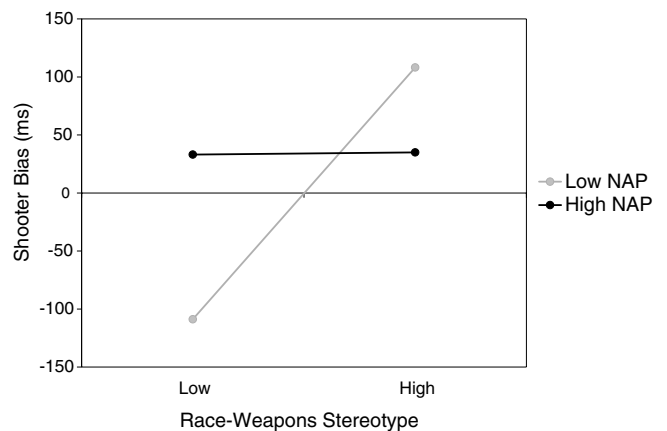


Fig. 2. Relation between participants’ Race-Weapons Stereotype (RWS) and Shooter Bias among those low vs. high in Negative Attitude toward Prejudice (NAP).

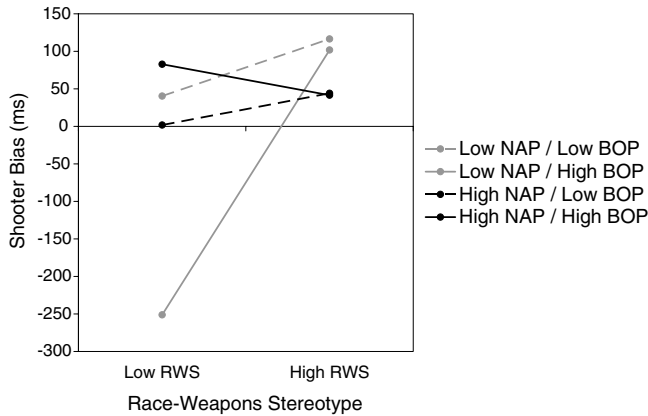


Fig. 3. Relation between participants' Race-Weapons Stereotype (RWS) and Shooter Bias for each combination of high and low Belief that One-self is Prejudiced (BOP) and Negative Attitude toward Prejudice (NAP).

low NAP line has a steep, significant positive slope, $p < .0001$, indicating a strong effect of the stereotype on shooter bias. From this result, it is apparent that NAP alone is sufficient to moderate the effect of an implicit stereotype on an unintended discriminatory behavior.

Further, as predicted, there was a significant $BOP \times NAP \times RWS$ effect on Shooter Bias (bottom row of Table 3). This reveals that BOP moderated the extent to which NAP predicted the magnitude of association between stereotype and behavior. In order to probe this effect, we conducted a "simple slopes" test (Aiken & West, 1991) on the $NAP \times RWS$ effect at high and low levels of BOP (i.e., one SD above and below the mean). These data are depicted in Fig. 3. Individuals who implicitly attributed bias to themselves (high BOP; solid lines in Fig. 3) showed a strong $NAP \times RWS$ interaction, $p < .0001$. However, individuals low in self-attributed bias (low BOP; dashed lines in Fig. 3) exhibited no $NAP \times RWS$ interaction, $p = .95$. It therefore appears that the $NAP \times RWS$ interaction depicted in Fig. 2 is limited almost entirely to individuals high in the belief that oneself is prejudiced. However, it should be noted that this effect appears to be driven by those who are low NAP, high BOP, and low RWS. This group alone has markedly lower levels of Shooter Bias—whereas all others have comparable levels.⁴ It is logical that those who do not view prejudice disapprovingly (low NAP) but nevertheless perceive themselves as prejudiced (high BOP) are more content than others to allow their stereotypes to guide their behavior. This could also explain the observed reversed Shooter Bias (greater facility to shoot

White targets) among this same group (those low NAP/high BOP participants who are low on the race-weapons stereotype measure). In fact, this group had, on average, a negative RWS (i.e., rather than just a low bias toward Blacks, they tended to associate Whites more than Blacks with weapons; see footnote 4). If these reversed stereotypes are also uninhibited, they should yield reversed Shooter Bias, as observed here.

In sum, the effect of NAP on the RWS-Shooter Bias relation is readily interpretable; those who implicitly view prejudice as especially bad show no relationship between implicit stereotypes and spontaneous behavior. Conversely, those who tend to find prejudice more acceptable show a strong relationship between their implicit stereotypes and automatic behavior. This effect is further qualified, however, by the higher order interaction revealing BOP to be relevant as well. It is only for those high in BOP that the level of NAP matters. That NAP but not BOP alone is influential is not surprising. One can be motivated to act by an attitude toward an end state (Custers & Aarts, 2005), even if one does not believe one is personally prone to it. But the belief that one is prone to an end state is not sufficient to motivate action toward or away from it. The attitude (in this case, toward prejudice) is necessary to determine goal pursuit (in this case, toward egalitarianism).

Self-report measures of the motivation to control prejudice

We did not expect questionnaire measures of motivation to control prejudice to moderate the effect of an implicit race-weapons stereotype on spontaneous discriminatory behavior. In order to examine this, we re-ran the HLM analysis reported above, replacing NAP and BOP with IMS and EMS in the level-2 model.⁵ All other model specifications remained the same. Table 4 depicts the relevant results from this analysis. The self-report variables failed to moderate the Shooter Bias. Furthermore, although the relation between RWS and Shooter Bias was not qualified by IMS or the $IMS \times EMS$ interaction, EMS did moderate the RWS-Shooter Bias relation: High EMS participants exhibited no relationship between the stereotype and Shooter Bias while low EMS participants exhibited a strong positive relation, a pattern resembling that for NAP.

At this point we can only speculate about the effect of EMS. EMS is not significantly correlated with NAP, BOP, or their interaction, so these constructs are not redundant. It is possible that, like those low in NAP, those low in EMS are so unconcerned with being prejudiced that they do not attempt to inhibit their stereotypes on any level and therefore have not automatized that inhibition at all. As a consequence, their behavior would be especially strongly influenced by their stereotypes.

⁴ In order to test whether the unusually low Shooter Bias average for low RWS, low NAP, high BOP was due to a small, volatile group, we grouped subjects according to median splits on RWS, NAP, and BOP, finding the eight groups to have reasonably homogeneous sizes, varying from 5 to 8 participants, with the group of interest having 6 participants. Furthermore, the mean RWS for that group was $-.2$ (they tended to associate Whites more than Blacks with weapons). This could explain their overall negative average Shooter Bias score.

⁵ Similar tests were run for Dunton and Fazio's (1997) MCPR, yielding no significant moderating effects, but Plant and Devine's approach regarding the interaction of IMS and EMS was expected to have greater potential to relate to RWS and Shooter Bias.

Table 4
HLM Analysis of Reaction Speeds in the Shooter Task as a Function of Self-Report Variables and RWS

Variable	B	SE B	df	t
Target Race × Object Type (Shooter Bias)	0.01	0.01	40	1.65 [†]
IMS	−0.03	0.03	40	−0.95
EMS	0.01	0.02	40	0.65
Race-Weapons Stereotype (RWS)	−0.12	0.10	40	−1.23
IMS × EMS	0.03	0.02	40	1.51
IMS × Shooter Bias	0.01	0.01	40	1.57
EMS × Shooter Bias	0.01	0.01	40	1.14
RWS × Shooter Bias	0.06	0.02	40	2.66*
IMS × EMS × Shooter Bias	−0.01	0.01	40	1.08
IMS × RWS × Shooter Bias	0.01	0.01	40	0.50
EMS × RWS × Shooter Bias	−0.05	0.02	40	−2.63*
IMS × EMS × RWS × Shooter Bias	0.00	0.01	40	0.38

Note. IMS = Internal (explicit) Motivation to Respond without Prejudice; EMS = External (explicit) Motivation to Respond without Prejudice. Target race is dummy coded such that −1 = White and 1 = Black; object type is coded such that −1 = benign and 1 = gun.

* $p < .05$.

[†] $< .10$.

That NAP and EMS are not correlated is important because they should represent distinct routes to reduced bias, with NAP reflecting motivation derived from the concern with prejudice itself and EMS derived from concerns about self-presentation. Still, we can only speculate as to how EMS would relate to these implicit constructs. It may be worth considering that EMS was measured after the reaction time measures and its relations with them could reflect some reactivity. We must also consider that the effect of EMS may reflect a Type I error, and an *a priori* replication would be useful in this regard.

Conclusion

Research and theory on automaticity has long held that automatic processes, once triggered, play out inexorably (Bargh, 1999), and early conceptions of implicit racial stereotypes held that they were universal and inevitable (Devine, 1989). More recent research has suggested some meaningful variability (Blair, 2002; Devine et al., 2002) and opportunities for altering the content of those implicit stereotypes (e.g., Dasgupta & Greenwald, 2001; Kawakami, Dovidio, Moll, Hermsen, & Russin, 2000; Plant & Peruche, 2005). However, to the extent that unintended discriminatory behavior resulting from truly implicit biases is controllable, such control would also have to operate outside of consciousness. We believe that implicit motivation to control prejudice represents such a nonconscious influence. The evidence indicates that those high in an implicit negative attitude toward prejudice show less influence of implicit stereotypes on automatic discrimination. Implicit belief that oneself is prejudiced further moderates this effect in that the effect of implicit negative attitude toward prejudice is present only when implicit belief that oneself is prejudiced is relatively strong.

Future research on IMCP should further examine the nonconscious and motivational nature of the construct, contrast it with related explicit constructs, and explore methods for enhancing IMCP in the service of reducing subtle discriminatory behaviors.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.
- Amodio, D. M., Harmon-Jones, E., & Devine, P. G. (2003). Individual differences in the activation and control of affective race bias as assessed by startle eyeblink response and self-report. *Journal of Personality and Social Psychology, 84*, 738–753.
- Bargh, J. A. (1999). The cognitive monster: the case against the controllability of automatic stereotype effects. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 361–382). New York: Guilford Press.
- Blair, I. V. (2002). The malleability of automatic stereotypes and prejudice. *Personality and Social Psychology Review, 6*, 242–261.
- Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of impression formation and memorization goals: nonconscious goal priming reproduces effects of explicit task instructions. *Journal of Personality and Social Psychology, 71*, 464–478.
- Cohen, J. (1977). *Statistical power analysis for the behavioral sciences* (Rev. ed.). Hillsdale, NJ: Erlbaum.
- Correll, J., Park, B., Judd, C. M., & Wittenbrink, B. (2002). The police officer's dilemma: using ethnicity to disambiguate potentially threatening individuals. *Journal of Personality and Social Psychology, 83*, 1314–1329.
- Cunningham, W. A., Preacher, K. J., & Banaji, M. R. (2001). Implicit attitude measures: consistency, stability, and convergent validity. *Psychological Science, 12*, 163–170.
- Custers, R., & Aarts, H. (2005). Positive affect as implicit motivator: on the nonconscious operation of behavioral goals. *Journal of Personality and Social Psychology, 89*, 129–142.
- Dasgupta, N., & Greenwald, A. G. (2001). On the malleability of automatic attitudes: combating automatic prejudice with images of admired and disliked individuals. *Journal of Personality and Social Psychology, 81*, 800–814.
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology, 56*, 5–18.
- Devine, P. G., Plant, E. A., Amodio, D. M., Harmon-Jones, E., & Vance, S. L. (2002). The regulation of explicit and implicit race bias: the role of motivations to respond without prejudice. *Journal of Personality and Social Psychology, 82*, 835–848.
- Dovidio, J. F., Kawakami, K., Johnson, C., Johnson, B., & Howard, A. (1997). On the nature of prejudice: automatic and controlled processes. *Journal of Experimental Social Psychology, 33*, 510–540.
- Dunton, B. C., & Fazio, R. H. (1997). An individual difference measure of motivation to control prejudiced reactions. *Personality and Social Psychology Bulletin, 23*, 316–326.
- Eimer, M., & Schlaghecken, F. (2002). Links between conscious awareness and response inhibition: evidence from masked priming. *Psychonomic Bulletin & Review, 9*, 514–520.
- Fazio, R. H., Jackson, J. R., Dunton, B. C., & Williams, C. J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: a bona fide pipeline? *Journal of Personality and Social Psychology, 69*, 1013–1027.
- Glaser, J., & Banaji, M. R. (1999). When fair is foul and foul is fair: reverse priming in automatic evaluation. *Journal of Personality and Social Psychology, 77*, 669–687.
- Glaser, J., & Kihlstrom, J. F. (2005). Compensatory automaticity: unconscious volition is not an oxymoron. In R. Hassin, J. S. Uleman, & J. A. Bargh (Eds.), *The new unconscious*. New York: Oxford University Press.

- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: attitudes, self-esteem, and stereotypes. *Psychological Review*, *102*, 4–27.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: the implicit association test. *Journal of Personality and Social Psychology*, *74*, 1464–1480.
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, *85*, 197–216.
- Greenwald, A. G., Oakes, M. A., & Hoffman, H. (2003). Targets of discrimination: effects of race on responses to weapons holders. *Journal of Experimental Social Psychology*, *39*, 399–405.
- Hausmann, L. R. M., & Ryan, C. S. (2004). Effects of external and internal motivation to control prejudice on implicit prejudice: the mediating role of efforts to control prejudiced responses. *Basic and Applied Social Psychology*, *26*, 215–225.
- Katz, I., & Hass, R. G. (1988). Racial ambivalence and American value conflict—correlational and priming studies of dual cognitive structures. *Journal of Personality and Social Psychology*, *55*, 893–905.
- Kawakami, K., Dovidio, J. F., Moll, J., Hermsen, S., & Russin, A. (2000). Just say no (to stereotyping): effects of training in the negation of stereotypic associations on stereotype activation. *Journal of Personality and Social Psychology*, *78*, 871–888.
- Maier, M. A., Berner, M. P., & Pekrun, R. (2003). Directionality of affective priming: effects of trait anxiety and activation level. *Experimental Psychology*, *50*, 116–123.
- McConahay, J. B., Hardee, B. B., & Batts, V. (1981). Has racism declined in America? It depends on who is asking and what is asked. *Journal of Conflict Resolution*, *25*, 563–579.
- Moskowitz, G. B., Gollwitzer, P. M., Wasel, W., & Schaal, B. (1999). Pre-conscious control of stereotype activation through chronic egalitarian goals. *Journal of Personality and Social Psychology*, *77*, 167–184.
- Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the Implicit Association Test: II. Method variables and construct validity. *Personality and Social Psychology Bulletin*, *31*, 166–180.
- Plant, E. A., & Devine, P. G. (1998). Internal and external motivation to respond without prejudice. *Journal of Personality and Social Psychology*, *75*, 811–832.
- Plant, E. A., & Peruche, B. M. (2005). The consequences of race for police officers' responses to criminal suspects. *Psychological Science*, *16*, 180–183.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., & Congdon, R. (2004). Hierarchical Linear and Nonlinear Modeling (Version 6.01a) [Computer software]. Lincolnwood, IL: Scientific Software International.
- Shah, J. Y., & Kruglanski, A. W. (2003). When opportunity knocks: bottom-up priming of goals by means and its effects on self-regulation. *Journal of Personality and Social Psychology*, *84*, 1109–1122.