Journal of Personality and Social Psychology
2005, Vol. 89, No. 4, 583–592

0022-3514/05/$12.00 DOI: 10.1037/0022-3514.89.4.583

Social Tuning of Automatic Racial Attitudes: The Role of Affiliative Motivation

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Consistent with the affiliative social tuning hypothesis, this study showed that the desire to get along with another person shifted participants' automatic attitudes toward the ostensible attitudes of that person. In Experiment 1, the automatic racial attitudes of women but not men emulated those of an experimenter displaying race-egalitarian attitudes or attitudes neutral with respect to race. Mediational analysis revealed that the gender difference in social tuning was mediated by liking for the experimenter. In Experiment 2, the likability of the experimenter was manipulated. Individuals who interacted with a likable experimenter exhibited social tuning more so than did those who interacted with a rude experimenter. These findings suggest that affiliative motives may elicit malleability of automatic attitudes independent of manipulations of social group exemplars.

Keywords: IAT, racial attitudes, automatic attitudes, shared reality, social tuning

Although automatic attitudes were commonly assumed to be born of a lifetime of learning and to be thus virtually immutable (e.g., Devine, 1989), an emerging body of research suggests that they are quite malleable via a range of situational factors, mental strategies, and social motives (for a review, see Blair, 2002). Much of this work focuses on two means of impacting automatic intergroup attitudes: changing the representatives of a social group or the context in which representatives of that group are presented (Blair, Ma, & Lenton, 2001; Dasgupta & Greenwald, 2001; Livingston & Brewer, 2002; Mitchell, Nosek, & Banaji, 2003; Wittenbrink, Judd, & Park, 2001) and being motivated to control one's prejudice (Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002; Moskowitz, Gollwitzer, Wasel, & Schaal, 1999; Moskowitz, Salomon, & Taylor, 2000; Richeson & Ambady, 2002). Guided by shared reality theory (Hardin & Conley, 2001; Hardin & Higgins, 1996; Lowery, Hardin, & Sinclair, 2001), we examine the possibility that automatic attitudes serve a social regulatory function and therefore are sensitive to the social demands of interpersonal interactions. As such, we demonstrate a different means by which automatic attitudes are influenced—by the desire to get along with others.

Although most work on the role of social motives in the moderation of automatic intergroup attitudes focuses on the desire to control one's prejudice, a few experiments have shown that social motives not directly related to the expression of prejudice can also affect such automatic attitudes. For example, Spencer, Fein, Wolfe, Fong, and Dunn (1998) found that the motivation to protect self-esteem influences one's level of automatic racial prejudice. Participants expressed more negative automatic racial attitudes after receiving self-esteem-threatening, negative feedback on an intelligence test than after receiving positive feedback (Spencer et al., 1998). Similarly, L. Sinclair and Kunda (1999) found that after being criticized by a Black doctor, participants expressed automatic attitudes consistent with negative beliefs about Blacks, but when praised by this person, they expressed automatic attitudes consistent with their beliefs about doctors. The authors of this study also argued that observed shifts in automatic attitudes represent the effect of participants' motivation to protect their self-esteem.

We suggest that social motives related to interpersonal bonding should also affect the expression of automatic intergroup attitudes. According to shared reality theory, social bonds are established and maintained to the degree that social beliefs are perceived to be shared by individuals (Hardin & Conley, 2001; Lowery et al.,

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This research was supported by a Templeton Positive Psychology Young Scholar Grant to Stacey Sinclair and Brian S. Lowery. We thank Lisa Strade for assistance with data collection. We also thank Tim Wilson, Brian Nosek, Claude Steele, Teceta Thomas, Elisheva Gross, Adam Fingerhut, Ludwin Molina, Kevin Binning, Julie Smurda, Jennifer Pfeiffer, and Naomi Eisenberger for comments on earlier drafts of the article. All data collection complied with American Psychological Association ethical guidelines.

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2001). Although this proposed connection between the regulation of interpersonal interaction and the mutual validation of beliefs generates several hypotheses, the following pair of experiments focuses on the affiliative social tuning hypothesis. Because achieving shared reality (i.e., a sense that social beliefs are shared) is thought to establish and maintain social bonds, it follows that people should experience a heightened desire to develop shared reality with another social actor to the extent that they want, or are situationally required, to get along with her or him (i.e., experience high affiliative motivation). One way individuals can achieve this heightening of shared reality is by adjusting their attitudes toward the ostensible, relationship-relevant attitudes of this person when the desire to get along is high. The postulate that individuals will adjust, or "tune," their beliefs to the ostensible beliefs of another social actor when they desire to get along with this person is referred to as the affiliative social tuning hypothesis.

To date, most support for the affiliative social tuning hypothesis comes from research demonstrating that the desire to get along with a proximal social actor and the local attitudes ostensibly held by a person work in concert to shape explicit beliefs (e.g., Davis & Rusbult, 2001; McCann & Hancock, 1983; McCann & Higgins, 1990). For example, Higgins and McCann (1984) found that the descriptions of an individual provided by people who valued positive interactions with superiors (i.e., "high authoritarians") corresponded with the ostensible views of a high-status audience but not a low-status audience. In other words, these individuals experienced attitude convergence with superiors, whom they care about, but not inferiors, whom they do not care about. In addition, S. Sinclair, Huntsinger, Skorinko, and Hardin (2005) showed that individuals' explicit stereotype-relevant self-views shifted in accordance with the perceived views of a social interaction partner when motivation to get along with that person was high as opposed to low.

Although support for the affiliative social tuning hypothesis primarily comes from research demonstrating the vicissitudes of explicit attitudes, shared reality theory does not postulate an ontological distinction between explicit and automatic attitudes. From this perspective, both explicit and automatic attitudes are constructed within an interpersonal context. Because the affiliative social tuning hypothesis is derived from shared reality theory, it should apply to both explicit and automatic attitudes.

A few recent demonstrations of the malleability of automatic intergroup attitudes are consistent with the affiliative social tuning hypothesis. For example, in a series of experiments, Lowery et al. (2001) found that White participants expressed lower levels of automatic racial prejudice in the presence of a Black experimenter versus a White experimenter. The authors argued that the shift in automatic prejudice represented social tuning toward the presumed relatively pro-Black beliefs of Black experimenters as compared with White experimenters in response to the desire to get along stemming from social demand in the experimental situation. More directly implicating the desire to get along with others, Richeson and Ambady (2002) found that individuals expressed less automatic racial prejudice when interacting with a Black superior than with a Black subordinate. From our perspective, this study suggests that the desire for smooth and pleasant interpersonal interactions with one's superior can result in affiliative social tuning.

Although these findings are consistent with affiliative social tuning of automatic racial attitudes, they are also consistent with the hypothesis that these attitudes shift in response to exposure to a positive Black exemplar—a shift in attitude object. Hence, two innovations are required to provide evidence for affiliative social tuning as a process distinct from the activation of a counterstereotypic exemplar. First, it is necessary to decouple the ostensible attitudes of a social actor from his or her social group membership, thereby eliminating exposure to a counterstereotypic exemplar as a potential explanation for subsequent attitude change. Second, it is necessary to isolate differences in affiliative motivation toward the social actors. The present experiments meet these criteria.

The Current Experiments

The experiments reported here contribute to the understanding of the malleability of automatic attitudes by showing that individuals tune their attitudes to those of another social actor to the extent that they experience affiliative motivation toward this person. This was accomplished across two measures of automatic attitudes: the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) and a subliminal sequential priming task (e.g., Lowery et al., 2001). We tested our predictions by using the paradigm that originally ignited controversy regarding the vicissitudes of racial prejudice—manipulation of experimenter characteristics. This paradigm has shown that Whites report more race-egalitarian explicit and automatic attitudes in the presence of a Black person than of a White person (e.g., Hatchett & Schuman, 1976; Lowery et al., 2001; Schuman & Converse, 1971). However, the strategy used in these experiments relies on affecting the variables expected to influence automatic racial attitudes without shifting the social group membership or apparent stereotypicality of the experimenter.

To decouple the ostensible attitudes of experimenters from their social group memberships in Experiment 1, a White or Black experimenter wearing a t-shirt that conveyed egalitarian or neutral racial attitudes led participants through an IAT assessing automatic anti-Black/pro-White automatic prejudice. In Experiment 2, participants were led through a subliminal priming task by a White female experimenter in one of the aforementioned shirts. In each case, we are able to discern whether changes in automatic racial attitudes were a function of the category membership of the experimenters or their ostensible attitudes.

Affiliative motivation toward the experimenter was isolated in three ways: gender differences in interpersonal orientation (Experiment 1), measured liking of the experimenter (Experiment 1), and manipulated likability of the experimenter (Experiment 2). We chose to operationalize affliative motivation as liking of the experimenter in the current experiments because there are strong reasons to believe that individuals want to get along with people they like. For example, pilot data indicated that the extent to which individuals like someone is positively correlated with (a) how much they wanted to get along with the person ($r = .79$), (b) how close they wanted to be to the person ($r = .70$), (c) how much they wanted to be friends with the person ($r = .79$), and even (d) how much they wanted to be roommates with that person ($r = .68$), as

well as (e) how much they wanted that person to like them (r = .70).[1]

In light of research suggesting a gender difference in interpersonal orientation (e.g., Tannen, 1990), we expected women to spontaneously want to get along with an experimenter behaving in the typical professional manner associated with this role more so than would men. To the extent that this is the case, women should be more likely than men to exhibit affiliative social tuning. To confirm that gender differences in participants' spontaneous affiliative reactions to the experimenter mediate gender differences in social tuning, we also measured liking of the experimenter in Experiment 1. In Experiment 2, the likability of the experimenter was manipulated by having her behave in a notably likable or rude manner. Given that gender differences are thought to recede in the presence of strong situational cues (Deaux & Major, 1987; Eagly & Crowley, 1986; Eaton & Enns, 1986; Reis, Senchak, & Solomon, 1985), both men and women should engage in affiliative social tuning to a similar degree when the experimenter behaves in a notably likable manner.

Experiment 1

To test the hypothesis that automatic attitudes are subject to affiliative social tuning, women and men completed a measure of automatic racial prejudice in the presence of an experimenter who was portrayed as having more versus less egalitarian beliefs. The role of affiliative motivation in resultant shifts in automatic racial prejudice was assessed in two ways. First, it has been widely argued that as compared with men, women are more interpersonally oriented (e.g., Chodorow, 1978; Gilligan, 1982; Tannen, 1990). Support for this assertion comes from research demonstrating that women are more likely than men to (a) have relational self-construals (Clancy & Dollinger, 1993; Cross & Madson, 1997; Josephs, Markus, & Tafarodi, 1992); (b) smile and exude warmth during social interaction (Hall, 1984; Hall, Carter, & Horgan, 2000); (c) be adept at decoding the emotional states of others (DePaulo, Epstein, & Wyer, 1993; Hall, 1984); (d) speak in ways that invite others to participate in the conversation (Tannen, 1990); and (e) enjoy intimate, satisfying, and supportive social networks (Reis et al., 1985; Taylor et al., 2000). If women are more open to, and interested in, pleasant and intimate social interactions with others, it is likely that they will be more apt than men to spontaneously desire to get along with an experimenter behaving in the professional and courteous but unremarkable manner common to most research settings. Given the gender difference in interpersonal orientation, the affiliative social tuning hypothesis suggests that women, more so than men, will tune to the experimenter's ostensible beliefs in this situation. Second, to confirm whether gender differences in social tuning can be explained by gender differences in participants' spontaneous affiliative reactions to the experimenter, participants' liking of the experimenter was measured and mediational analyses were performed.

Method

Participants

Forty-three White men and 86 White women at the University of Virginia participated in this experiment as part of a class demonstration.[2]

Procedure

Groups of approximately 20 participants were randomly assigned to sessions in which they were led through a pencil-and-paper version of an IAT measuring automatic racial prejudice by one of four White or one of three Black experimenters. The experimenter began by passing out a packet of materials that included the IAT and a short questionnaire. He or she also instructed participants to read and sign the informed consent form attached to the front of the packet if they wished to allow their responses to be used for research purposes. Individuals who did not wish to allow their responses to be used for research purposes participated in the class demonstration and simply refrained from turning their responses in at the end of the session or relied on the experimenter to destroy packets without a signed consent form. Ostensible attitudes of the experimenter were manipulated by having him or her wear an antiracism shirt (i.e., Eracism) or a plain shirt of the same color. Upon completion of the IAT, participants completed a short questionnaire that assessed perceptions of the experimenter's racial attitudes; participant's liking of the experimenter; and basic demographics, such as age, year in school, ethnicity, and gender.

Materials

Racial prejudice IAT. We used a paper-and-pencil version of the IAT that allows for data collection in groups. (For a more detailed description of this pencil-and-paper version, see Lowery et al., 2001.) This measure required participants to categorize (a) lists of names as Black or White, (b) lists of words as pleasant or unpleasant, and (c) combinations of names and words based on racial group or valence as quickly and accurately as they could in 20 s. Automatic racial attitudes were operationalized as the difference in the number of correct categorizations participants were able to make when categorizing names and words in the relevant combined list as Black or unpleasant versus White and pleasant (anti-Black/pro-White) and the number of correct categorizations participants were able to make when categorizing names and words in the relevant combined list as Black or pleasant versus White or unpleasant (pro-Black/anti-White). Higher numbers indicated greater anti-Black/pro-White associations.

Follow-up questionnaire. The perceived racial attitudes of the experimenter were measured with the item "How important do you think not being racist is to the experimenter?" Liking for the experimenter was measured with the item "How much do you like the experimenter?" All responses were provided by using a Likert-type scale ranging from 1 (*not at all*) to 7 (*very important* or *very much*).

Results

Preliminary Analyses

We examined the efficacy of the ostensible attitudes manipulation with a 2 (ostensible attitudes: antiracist, neutral) × 2 (exper-

[1] Twenty-eight individuals were each shown pictures of seven people. After seeing each person, they were asked to rate how much they liked that person, how close they wanted to be to that person, how much they wanted to be that person's friend, how much they wanted to get along with that person, how much they would like to have that person as a roommate, and how much they wanted that person to like them. Their responses were provided on Likert scales ranging from 1 (*not at all*) to 7 (*very much* or *very close,* as appropriate).

[2] Lowery et al. (2001) demonstrated that social tuning with respect to anti-Black/pro-White automatic prejudice may be limited to Whites in this paradigm because this type of automatic prejudice is more obviously relevant to social interactions between Whites and Blacks than to interactions among Whites, Blacks, and members of other racial or ethnic groups.

imenter race: Black, White) × 2 (participant gender: male, female) between-subjects analysis of variance (ANOVA). Participants thought that not being racist was more important to the experimenter wearing the antiracism shirt ($M = 5.60$, $SD = 1.72$) than the blank shirt ($M = 4.59$, $SD = 1.97$), $F(1, 120) = 7.36$, $p < .008$, $\eta^2 = .06$. No other significant effects emerged. So the ostensible attitudes manipulation (the shirt the experimenter wore), and not experimenter race, drove participants' perceptions of the experimenters' racial attitudes. In addition, this result implies that men and women's perceptions of the experimenter's racial attitudes were similarly impacted by this manipulation.

The same analytic strategy also revealed that women spontaneously exhibited greater liking toward the experimenter ($M = 5.10$, $SD = 1.08$) than did men ($M = 4.44$, $SD = 1.05$), $F(1, 119) = 10.87$, $p = .001$, $\eta^2 = .08$. No other significant effects emerged on this dependent variable.

Finally, the overall error rate for the IAT was less than 2%. Using the analytic strategy described above, we found that it did not differ as a function of condition.

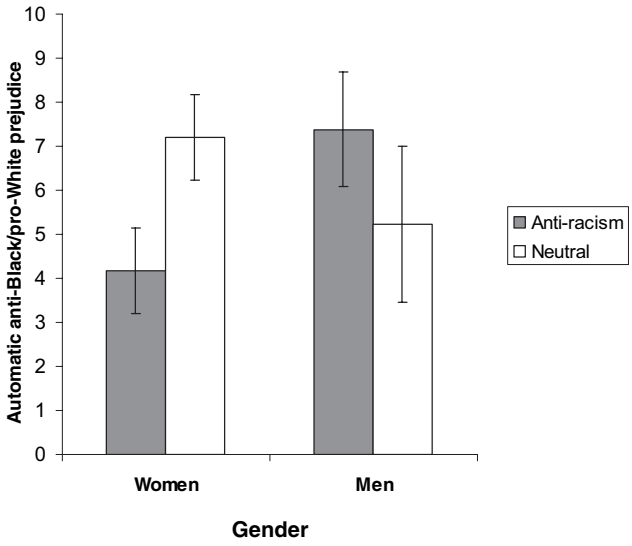

Figure 1. Automatic anti-Black/pro-White prejudice measured by using the Implicit Association Test as a function of participant gender and ostensible racial attitudes of the experimenter.

Main Analyses

Given that women liked the experimenter more than did men and perceptions of the experimenter's racial attitudes were driven solely by the ostensible attitudes manipulation (the experimenter's t-shirt), the affiliative social tuning hypothesis suggests that women, more so than men, will tune their automatic racial prejudice to the views portrayed by the experimenter's shirt. To examine this hypothesis, we conducted a 2 (ostensible attitudes: antiracist, neutral) × 2 (experimenter race: Black, White) × 2 (participant gender: male, female) between-subjects ANOVA with automatic anti-Black/pro-White prejudice as the dependent variable.

As expected, the ostensible attitudes of the experimenter had a different impact on women than men, as indicated by a significant Participant Gender × Ostensible Attitudes interaction, $F(1, 121) = 4.00$, $p < .05$, $\eta^2 = .03$. As shown in Figure 1, women exhibited lower anti-Black/pro-White automatic prejudice in the presence of an experimenter wearing an antiracism shirt than a blank shirt, $t(121) = 2.22$, $p = .01$, one-tailed,[3] $\eta^2 = .04$; but men did not show a significant difference in automatic anti-Black/pro-White prejudice as a function of the ostensible attitudes of the experimenter, $t(121) < 1$. In other words, among women but not men, automatic anti-Black/pro-White prejudice tuned toward the ostensible attitudes of the experimenter.

According to the affiliative social tuning hypothesis, this gender difference should be explained by differences in the degree to which participants liked the experimenter. To examine this contention, we conducted a hierarchical regression, entering participants' self-reported liking of the experimenter (i.e., liking), a continuous variable, and ostensible attitudes, a dichotomous variable, in the first step and the interaction between these variables in the second step, with automatic anti-Black/pro-White prejudice as the dependent variable. Both independent variables were standardized prior to conducting this analysis. The predicted interaction was found ($\beta = -.23$, $p < .01$). Simple slopes analyses showed that when liking for the experimenter was one standard deviation above the mean, participants' automatic anti-Black/pro-White prejudice lowered as the experimenters' ostensible views became more egalitarian ($\beta = -.37$, $p < .005$), but as expected, these variables were unrelated when liking for the experimenter was one standard deviation below the mean ($\beta = .08$, $p = 50$). See Figure 2; for comparability with Figure 1, the illustration depicts the continuous variable *liking* split at the median.

To establish that the relationship between liking and ostensible attitudes actually explains the effect of the relationship between gender and ostensible attitudes on automatic anti-Black/pro-White prejudice, we conducted a mediational analysis (Baron & Kenny, 1986; Kenny, Kashy, & Bolger, 1998). To do so, we created dummy variables that captured the interaction between participant gender and ostensible attitudes and the interaction between liking and ostensible attitudes and entered them into a series of regression analyses. According to Baron and Kenny (1986), mediation is established by the attainment of three criteria: (a) the initial variable is related to the outcome variable, (b) the initial variable is related to the proposed mediator, and (c) the proposed mediator is related to the outcome variable when controlling for the initial variable. To test for mediation we conducted three regression analyses examining (a) the relationship between the Participant Gender × Ostensible Attitudes interaction (the initial variable) and automatic anti-Black/pro-White prejudice (the outcome variable), (b) the relationship between the Participant Gender × Ostensible Attitudes interaction (the initial variable) and the Liking × Ostensible Attitudes interaction (the proposed mediator), and (c) the relationship between the Liking × Ostensible Attitudes interaction (the proposed mediator) and automatic anti-Black/pro-White prej-

[3] In this instance, one-tailed tests are justified by the clear directional prediction shared reality theory makes regarding affiliative social tuning among individuals who are likely to interpersonally engage the experimenter (i.e., women).

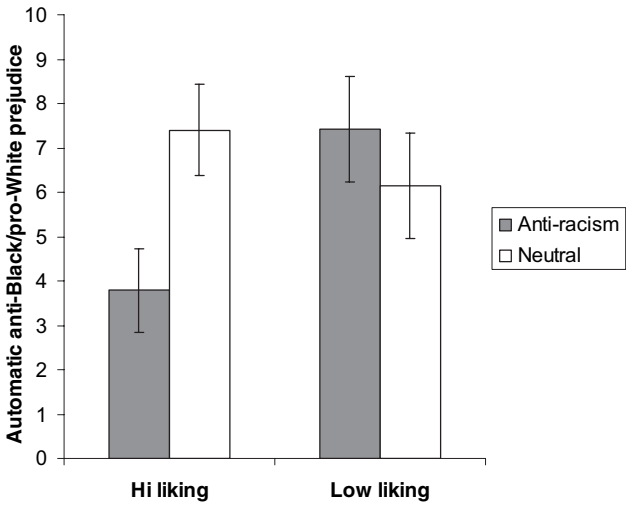

Figure 2. Automatic anti-Black/pro-White prejudice measured by using the Implicit Association Test as a function of measured liking of the experimenter and ostensible racial attitudes of the experimenter. Hi = high.

udice (the outcome variable) controlling for the Participant Gender × Ostensible Attitudes interaction (the initial variable). To ensure that these analyses examined only the relationships between variance uniquely accounted for by the relevant interaction terms, we controlled for the main effects of participant gender, liking, experimenter race, and ostensible attitudes in each of the regression equations. Although these main effects were entered into all reported regressions, the question of interest pertains to the interactions, so we will focus on this aspect of the analyses when describing the results (for a similar strategy, see L. Sinclair & Kunda, 1999).

Meeting the first criterion for mediation, and consistent with the previously reported ANOVA, a regression equation with the main effects mentioned above and the Participant Gender × Ostensible Attitudes interaction as predictors and automatic anti-Black/pro-White prejudice as the criterion showed that the unique variance associated with the Participant Gender × Ostensible Attitudes interaction was significantly related to automatic anti-Black/pro-White prejudice ($\beta = -.83$, $p < .05$). Meeting the second criterion, a regression equation with the main effects mentioned above and the Participant Gender × Ostensible Attitudes interaction as predictors and the Liking × Ostensible Attitudes interaction as the criterion showed that the unique variance associated with the Participant Gender × Ostensible Attitudes interaction (the initial variable) was significantly related to the unique variance associated with the Liking × Ostensible Attitudes interaction (the proposed mediator; $\beta = .25$, $p < .005$). As predicted, and meeting the third criterion, when the main effects mentioned above, the Gender × Ostensible Attitudes and Liking × Ostensible Attitudes interactions, were simultaneously entered as predictors into a regression equation with automatic anti-Black/pro-White prejudice as the criterion, the absolute value of the relationship between the unique variance associated with the Gender × Ostensible Attitudes interaction (the initial variable) and automatic anti-Black/pro-White prejudice (the outcome variable) was substantially reduced ($\beta = -.59$, $p = .17$), whereas the relationship between the unique variance associated with the Liking × Ostensible Attitudes interaction (the proposed mediator) and automatic anti-Black/pro-White prejudice (the outcome variable) remained statistically significant ($\beta = -1.03$, $p < .05$). This pattern of results indicates that the relationship between the Gender × Ostensible Attitudes interaction and automatic anti-Black/pro-White prejudice is mediated by the Liking × Ostensible Attitudes interaction, a finding substantiated by a marginally significant Baron and Kenny (1986) modified Sobel test ($z = 1.78$, $p = .08$).

This experiment demonstrated that one's automatic attitudes can be influenced by the ostensible attitudes of another social actor. Moreover, women exhibited less automatic racial prejudice in the presence of an ostensibly egalitarian experimenter versus a neutral experimenter, but men did not exhibit commensurate attitude shift. In light of research indicating that women are more interpersonally oriented than men, this gender difference is consistent with the affiliative social tuning hypothesis. The finding that the interaction between gender and the ostensible attitudes of the experimenter on automatic racial prejudice was mediated by the interaction between liking of the experimenter and the ostensible attitudes of the experimenter further substantiates this claim.

To provide additional support for the affiliative tuning hypothesis, we manipulated both the ostensible attitudes of the experimenter and her likability in Experiment 2. Manipulating this person's likability allowed us to provide converging evidence that social tuning of automatic attitudes is moderated by the desire to get along with her, as opposed to gender per se. Finally, we examined the malleability of automatic attitudes as a function of affiliative social tuning by using a subliminal serial priming measure (rather than the IAT) to demonstrate the generalizability of these processes across measures of automatic attitudes.

Experiment 2

Thus far, evidence of affiliative social tuning of automatic attitudes has stemmed from gender differences in the degree to which participants spontaneously liked another social actor (i.e., the experimenter). This experiment examined the vicissitudes of automatic racial attitudes as a function of experimentally manipulated likability of the experimenter. In addition, we sought evidence that social-tuning effects generalize across methods of measurement by using a subliminal priming procedure to assess automatic racial attitudes. Women and men completed a serial subliminal priming measure of automatic racial attitudes in the presence of a notably likable or rude experimenter who was portrayed as having more versus less egalitarian views. Given that gender differences are thought to recede when situational cues are particularly strong (Deaux & Major, 1987; Eagly & Crowley, 1986; Eaton & Enns, 1986; Reis et al., 1985), we expected both men and women to like the notably likable experimenter and, therefore, to exhibit automatic racial attitudes that emulated her ostensible attitudes in this condition.

Method

Participants

Participants were 91 White undergraduate students (34 men, 57 women) at the University of Virginia who received partial credit toward a course requirement for completion of the experiment.

Procedure

Each experimental session contained either 1 or 2 participants. When participants arrived, one of two White female experimenters asked them to sign in and take a seat at one of the computers in the next room. The experimenter was wearing an antiracism shirt (i.e., Eracism) or a blank shirt of the same color. Once participants were seated, the experimenter walked into the room with the computers and implemented the likability manipulation. In the likable condition, the experimenter said: "First, I would like to thank you for participating in this experiment. I know you get credit for coming, but I really appreciate your participation and wanted to give you something extra, so I brought some candy for you." In the rude condition, the experimenter said: "Just ignore this [while moving a bowl of candy]; some of the experimenters in my lab like to give subjects candy for their participation, but I think you are lucky just to get credit." The experimenters were required to wear a particular shirt and implement a given level of the likability manipulation according to a randomized schedule.

The experimenter then explained that before the experiment started, participants would take part in a short task to test their visual ability. When the experimenter was wearing the shirt with the word "Eracism" written on it, she briefly glanced around the room as if looking for something to test participants' vision with. After not finding anything, she said, "Why don't we just use the letters on my shirt?" When the experimenter was wearing the blank t-shirt, she used a piece of white 8.5 × 11-in. (21.6 × 27.8-cm) computer paper with the letters RXVBHYL in size 175 Impact font. She asked participants whether they could read the letters at three different positions, each position progressively farther away from the participant. The intended purpose of this task was to draw participants' attention to the experimenter's shirt to ensure that they noticed our manipulation of her ostensible attitudes. We added this aspect of the procedure after discovering during pretesting of the paradigm that, unlike in the large group setting of Experiment 2, participants did not examine the words on the experimenter's chest when engaged in a one-on-one interaction with her.

Participants were then instructed to start their computers. Once the screens were on, the experimenter explained that participants would take part in a computer task that measured their automatic prejudice and that the directions for the computer task were on the computer screen. Participants then completed a subliminal serial priming task, which included several practice trials. While participants completed the task, the experimenter stood in such a way that she was visible to the participants.

When the computer task was complete, participants completed a short questionnaire containing basic demographic questions and the item "How much do you like the experimenter?" on a Likert-type scale ranging from 1 (*not at all*) to 7 (*very much*).

Subliminal Priming Measure of Automatic Racial Prejudice

Automatic racial attitudes were measured by using a serial priming task in which participants responded to the words *good* or *bad* after subliminal exposure to a Black or White face (Lowery et al., 2001). Prior to beginning the priming task, participants viewed instructions displayed on the computer screen. For consistency with the IAT (a measure in which participants are aware that their prejudice is being assessed), the first set of instructions indicated that the task participants were about to engage in was a measure of automatic prejudice. The instructions, however, did not disclose how automatic prejudice was operationalized. Next, participants read that they should indicate recognition of the words *good* or *bad* as quickly as they could by pressing the marked keys. They also read that they were to focus on the center of the screen to facilitate their efficiency at this task. After the instructions, participants had four practice trials with only the mask followed by the word *good* or *bad*. When the practice round was over, the computer program paused to remind participants of the instructions and to allow for any questions. As soon as participants were ready, they pressed the *A* key to begin the subliminal priming task.

The subliminal priming task was composed of 128 trials: 64 Black faces (32 male, 32 female) and 64 White faces (32 male, 32 female). The pictures were taken from high school and college yearbooks. All pictures were converted to black and white images that measured approximately 100 × 135 pixels. Each image was presented parafoveally with forward and backward masking; specifically, they were offset so that the center of the picture was at 300 pixels horizontally and 200 pixels vertically (Lowery et al., 2001). Over the course of the procedure, 16 Black (8 male, 8 female) and 16 White (8 male, 8 female) pictures appeared in each of the corners. Each of the 128 trials began with a dot in the center of the screen and a black and white sunflower randomly appearing in one of the four corners for a maximum of 187 ms, serving as a forward mask. A Black or White face then flashed in the same corner as the forward mask for a maximum of 17 ms (Bargh & Chartrand, 2000; Lowery et al., 2001). Immediately following presentation of the face, a black and white sunflower was again presented in this corner for a maximum of 187 ms, thus serving as a backward mask. Next, the word *good* or *bad* appeared in the center of the screen where the dot had been. Participants indicated recognition of this word by pushing either the key labeled with a red *G* (*G* key) if the word *good* appeared or the key labeled with a red *B* (*J* key) if the word *bad* appeared. Reaction time was recorded from the onset of the word *good* or *bad* until participants provided the correct response.

Mean reaction times to the words *good* and *bad* as a function of exposure to Black and White faces were recorded, and subsequently log transformed, to serve as the basis of our measure of automatic racial prejudice (Bargh & Chartrand, 2000; Lowery et al., 2001). For consistency with the IAT, automatic racial attitudes were operationalized by using a three-step process. First, response time to the word *good* when primed with a White face (Wg) was subtracted from response time to the word *bad* when primed with a White face (Wb). This resulted in a White associations score (Wb–Wg) in which higher numbers indicated greater positivity toward Whites. Second, response time to the word *bad* when primed with a Black face (Bb) was subtracted from response time to the word *good* when primed with a Black face (Bg). This resulted in a Black associations score (Bg–Bb) in which higher numbers indicated greater negativity toward Blacks. Finally, positivity toward Whites (Wb–Wg) was added to negativity toward Blacks (Bg–Bb) to determine participants' automatic racial attitudes (higher numbers indicated greater pro-White/anti-Black bias). Prior to calculating this measure, reaction times less than 300 ms or greater than 3,000 ms were reset to missing values.

Results

Four participants were excluded from the following analysis because they indicated seeing a face during the subliminal priming task. An additional 6 participants were excluded from the analyses because they were unable to accurately identify the content of the experimenter's t-shirt. Four of them were excluded from the blank shirt condition because they reported seeing a word (that was not "Eracism"). Two of them were excluded from the "Eracism" shirt condition because they reported seeing nothing or a clearly incor-

rect word. Thus, a total of 81 participants were included in the analyses presented below.

Preliminary Analyses

To examine the efficacy of the likability manipulation, we conducted a 2 (ostensible attitudes: antiracist, neutral) × 2 (experimenter's behavior: likable, rude) × 2 (participant gender: male, female) between-subjects ANOVA on reported liking for the experimenter. As expected, participants reported liking the experimenter who behaved in a likable manner ($M = 5.32$, $SD = 1.33$) more than the rude experimenter ($M = 4.72$, $SD = 1.77$), $F(1, 71) = 56.35$, $p < .001$, $\eta^2 = .44$. No other significant effects emerged. As such, it seems that the manipulation was strong enough to yield similar amounts of liking for the experimenter among men and women, overcoming the spontaneous gender difference in liking observed in Experiment 1.

Main Analyses

To examine the hypothesis that automatic racial attitudes are subject to affiliative social tuning, we conducted a 2 (ostensible attitudes: antiracist, neutral) × 2 (experimenter's behavior: likable, rude) × 2 (participant gender: male, female) between-subjects analysis of covariance with mean response time during the practice trials as a covariate and with automatic anti-Black/pro-White prejudice as the dependent variable. Although the analyses were conducted by using log-transformed reaction times, mean raw reaction times adjusted for the covariates are presented below for ease of interpretation. Note that because women and men reported similar amounts of liking toward the experimenter, we did not expect significant differences in the degree to which they social tuned to her.

As expected, the ostensible attitudes of the experimenter had a different impact on individuals when she behaved in a likable manner versus a rude manner as indicated by a significant Experimenter's Behavior × Ostensible Attitudes interaction, $F(1, 70) = 3.96$, $p = .051$, $\eta^2 = .05$. No other significant effects emerged. As shown in Figure 3, participants who interacted with a likable experimenter exhibited lower anti-Black/pro-White automatic prejudice when the experimenter was wearing an antiracism shirt than a blank shirt, $t(70) = 1.62$, $p = .056$, one-tailed, $\eta^2 = .04$; but participants who interacted with the rude experimenter did not show a significant difference in automatic anti-Black/pro-White prejudice as a function of her ostensible attitudes, $t(70) = 1.20$, $p = .24$, $\eta^2 = .02$.

Some readers may find it surprising that we did not find significant anti-Black/pro-White bias when the experimenter was rude and/or that participants showed a nonsignificant pro-Black/anti-White bias in the neutral–rude condition. Although these findings do not contradict our hypothesis, we can think of two possible reasons for them. First, it is possible that participants tuned away from the ostensible attitudes of the experimenter to some degree when the experimenter was rude. We have other research demonstrating contrast effects when affiliative motivation is low that stem from an attempt to keep relationships distant, generally consistent with shared reality theory (S. Sinclair, Huntsinger, et al., 2005). Second, it is possible that in the neutral condition, participants focused on the experimenters' race, and the experimenter served as a negative exemplar of the white racial group when she was rude, producing a tendency toward anti-White attitudes. When looking at the different types of associations separately, we found that the pattern of means for White–good associations suggests that participants were slower to associate good words and White faces in the neutral condition when the experimenter was rude versus likable, though neither the relevant interaction nor the simple effects were statistically significant (no $p < .13$). Neither of these explanations runs counter to our predictions nor undermines the affiliative social tuning hypothesis.

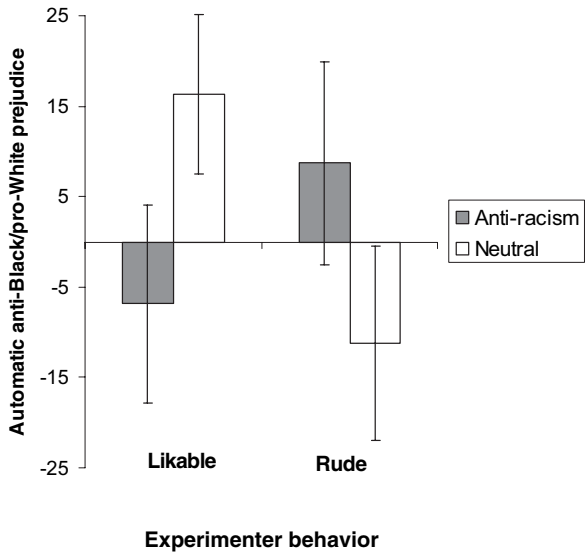

Figure 3. Automatic anti-Black/pro-White prejudice measured by using a subliminal serial priming task as a function of the likability of the experimenter's behavior and her ostensible racial attitudes.

Unlike the IAT, the subliminal measure of automatic racial attitudes used in this experiment allowed us to determine the basis of demonstrated shifts. Specifically, we could examine whether participants' positive associations with Blacks, negative associations with Blacks, positive associations with Whites, or negative associations with Whites were affected by the ostensible attitudes and relationship motivation manipulations. To this end, we conducted a 2 (ostensible attitudes: antiracist, neutral) × 2 (experimenter's behavior: likable, rude) × 2 (participant gender: male, female) between-subjects analysis of covariance with mean response time during the practice trials as a covariate on each type of association separately. The only significant effect in these analyses was an Experimenter's Behavior × Ostensible Attitude interaction on negative associations with Blacks, $F(1, 70) = 4.16$, $p < .05$, $\eta^2 = .06$. As shown in Figure 4, participants who interacted with a likable experimenter exhibited weaker negative associations with Blacks when the experimenter was wearing an antiracism shirt than a blank shirt, $t(70) = 1.62$, $p = .056$, one-tailed, $\eta^2 = .04$; but participants who interacted with the rude experimenter did not show a significant difference in negative associations with Blacks as a function of her ostensible attitudes, $t(70) < 1.27$, $p = .21$, $\eta^2 = .02$. These results support the affiliative social tuning hy-

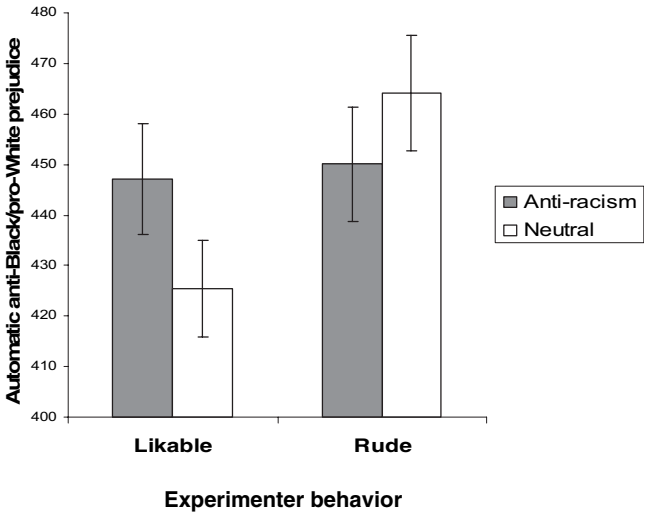

Figure 4. Mean response time in Black–negative trials as a function of the likability of the experimenter's behavior and her ostensible racial attitudes.

pothesis by showing that when the experimenter was clearly likable, both men and women's automatic attitudes adjusted to her ostensible views, as opposed to when she was clearly rude. Furthermore, this effect was driven by shifts in participants' negative associations to Blacks, the type of association most relevant to social interactions with an egalitarian person.

General Discussion

The reported experiments provide clear support for the notion that automatic racial attitudes are subject to affiliative social tuning. Across two experiments, two measures of automatic prejudice, and three operationalizations of affiliative motivation, automatic prejudice shifted toward the ostensible attitudes of a social actor to the degree that individuals were motivated to get along with him or her. In Experiment 1, women but not men shifted their automatic racial attitudes toward the experimenter's ostensible attitudes as communicated by the experimenter's t-shirt. Given that women are thought to be more interpersonally oriented than men (e.g., Tannen, 1990) and therefore more apt to want to get along with an experimenter behaving in an ordinary professional manner, this is consistent with the affiliative tuning hypothesis. Moreover, substantiating the critical role of the affiliative motivation in social tuning, analyses indicated that the gender difference in social tuning of automatic racial attitudes was mediated by liking for the experimenter. In Experiment 2, the moderating effect of experimentally manipulated likability of the experimenter on social tuning provided additional evidence for the hypothesis that affiliative motives underlie observed shifts in automatic racial attitudes. Men and women liked an experimenter who behaved in a notably likable manner to a similar degree and both tuned toward the ostensible attitudes of this experimenter. In contrast, men and women who interacted with a rude experimenter did not experience commensurate attitude shift.

This research adds to the growing literature demonstrating that automatic attitudes flexibly respond to social motives. In particular, it supports the contention that automatic attitudes are sensitive to demands created by interpersonal interaction. In both experiments, the ostensible attitudes of the liked social actor affected participants' automatic attitudes. Thus, unlike research focusing on social motives directly relevant to influencing automatic intergroup attitudes, these experiments show that the regulation of interpersonal interactions is also an efficacious means of affecting the expression of individuals' nonconscious attitudes toward outgroups.

It is important to note that observed shifts in automatic racial attitudes occurred independent of the experimenter's social group membership. For this reason, it is difficult to account for these effects via a subtyping mechanism. However, the affiliative social tuning approach may offer a plausible explanation for the effects of exposure to subtypes. Assuming that most individuals assume that Black social actors hold relatively pro-Black beliefs, this perspective predicts, consistent with evidence adduced for subtyping, that exposing individuals to liked, as compared with disliked, Blacks should result in lower levels of anti-Black prejudice (cf. Dasgupta & Greenwald, 2001; Wittenbrink et al., 2001). Similarly, imagining a strong woman may well entail imagining a positive interaction with an individual that does not hold stereotypic views of women, resulting in social tuning toward these more egalitarian attitudes (cf. Blair et al., 2001).

We believe that the most plausible account of the cognitive mechanism underlying the demonstrated effects is provided by emerging models of the mind and memory that represent attitudes as patterns of activation in neural networks evoked by contextual cues (McClelland & Rumelhart, 1985; Smith & DeCoster, 1998). These models suggest that attitudes are better understood as online creations rather than static entities retrieved from memory (Smith, 1996). From this perspective, contextual cues do not help recall attitudes; rather, they evoke attitudes that resemble what has been created in similar instances in the past. The crucial point is that these creations are not faithful reproductions of past attitudes but rather are influenced by the context in which the attitudes are expressed (Mitchell et al., 2003). Affiliative social tuning of automatic attitudes suggests that the motives accompanying interpersonal social interactions are an important contextual feature capable of affecting attitude expression.

This research also adds to a growing literature demonstrating the broad applicability of the affiliative social tuning hypothesis. Explicit attitudes (e.g., McCann & Hancock, 1983), self-views (e.g., S. Sinclair, Huntsinger, et al., 2005), and affect (Huntsinger, Lun, Sinclair, Clore, & Ngo, 2005) are also subject to this process. In the current experiments, we largely relied on differences in liking to illustrate that affiliative motivation moderates the effect of another social actor's beliefs on one's automatic attitudes. However, liking is only one of a number of manifestations of affiliative motivation that we have used. Consistent with our conceptualization of affiliative motivation as the spontaneous, or situationally induced, desire to get along with another social actor, other research has shown affiliative social tuning as a function of having the same birthday, being lonely, or having lower power than one's interaction partner (Huntsinger & Sinclair, 2005; S. Sinclair & Huntsinger, in press; S. Sinclair, Huntsinger, et al., 2005). Similar

effects on children's automatic prejudice as a function of parental identification have also been found (S. Sinclair, Dunn, & Lowery, 2005).

Finally, the notion that automatic racial attitudes are subject to affiliative social tuning has intriguing practical ramifications. For example, this means of moderating automatic racial attitudes allows for the possibility of dominant group members' affecting each other's automatic attitudes in the absence of any change in exposure to members of the stigmatized group or in the absence of altruistic motivations. In other words, affiliative social tuning provides a means of improving automatic intergroup attitudes that does not require targets of prejudice to be in the proximity of dominant group members, targets to behave in a counterstereotypic or appealing manner, or dominant group members to engage in sustained efforts to control their prejudice. The findings herein suggest that to the extent one encounters liked individuals with egalitarian views, the desire to foster social bonds with them will yield reductions in prejudice. However, the interpersonal nature of the effects elicited in the present experiments may have implications for the persistence of automatic attitude change. If these changes are dependent on local interpersonal interactions, as suggested by the affiliative social tuning hypothesis, observed shifts may last only as long as these interactions are an active part of an individual's environment. In light of these practical implications, this line of inquiry is worthy of continued investigation.

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Received October 14, 2004
Revision received January 28, 2005
Accepted February 9, 2005 ■