Malleability in Implicit Stereotypes and Attitudes

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A prevailing view of implicit attitudes and beliefs is that they are slow in forming, forged gradually through experience and learning. By extension, implicit attitudes and beliefs are often believed to be more stable and resistant to change than are their explicit counterparts (see Gregg, 2000; Smith & DeCoster, 1999). Consistent with this notion, several investigations have indeed suggested that conscious efforts to suppress or override implicit attitudes and stereotypes can easily backfire (e.g., Macrae, Bodenhausen, Milne, & Jetten, 1994).

However, several recent studies have suggested that implicit attitudes and beliefs may be more malleable than had previously been expected. Especially promising are methods that do not rely on the social perceiver’s conscious willingness and ability to effect change, but instead attempt to alter the accessibility of stereotypes or negative attitudes in memory without participants’ conscious awareness (Blair & Banaji, 1996; Blair, Ma, & Lenton, 2000; Dasgupta & Greenwald, 1999; Gleason & Banaji, 2000; Goodwin & Banaji, 2000; Lowery, Hardin, & Sinclair, 1999; Macrae, Bodenhausen, Milne, Thorn, & Castelli, 1997).

For example, in a recent examination of implicit race attitudes, Dasgupta and Greenwald (1999) found that presenting participants with exemplars of admired Black individuals (e.g., Martin Luther King, Jr., Denzel Washington) and disliked White individuals (e.g., Jeffrey Dahmer, Ted Kaczynski) was able to reduce implicit anti-Black attitudes—an effect that remained detectable for at least 24 hours. In another experiment, Dasgupta and Greenwald replicated this finding in the domain of attitudes toward the elderly.

Like implicit attitudes, implicit stereotypic beliefs have also shown surprising malleability. Blair et al. (2000) recently used a mental imagery task to make counterstereotypes about gender more accessible in memory. In this priming intervention, they instructed participants to imagine and write brief essays about strong women. On a subsequent IAT measure of implicit stereotyping, Blair et al. found that participants who were in the counterstereotypical imagery condition showed significantly less implicit stereotyping (i.e., less of an association between the concepts *female* and *weak*) than did participants in gender-stereotypic imagery, neutral, and no-prime conditions.

In the present research, we examined the malleability of implicit attitudes and stereotypic beliefs about men and women. We were interested in whether male and female participants’ attitudes and stereotypes were dependent on the construal of gender that was activated and whether changing implicit beliefs induces second-order changes in implicit gender attitudes, or vice versa (see Glaser, 1999). Understanding the extent to which these two processes are amenable to change and the extent to which they are dependent on each another will help resolve theoretical questions of how implicit attitudes are formed and how readily they are influenced by stimuli in the social world.
Method

- Participants were 59 male and 59 female undergraduates who participated in the experiment for course credit or for pay.

- We primed participants either with a construal of women as strong leaders or with a neutral imagery task. A female experimenter gave participants the priming intervention and set a timer for five minutes. She instructed participants to turn to the computer when the timer sounded and to follow the instructions on the screen to continue with the experiment.

  *Strong female leader prime:* Participants imagined women who are tough and aggressive leaders and wrote down their thoughts about the characteristics and behaviors that illustrate these women’s power and toughness.

  *Neutral prime:* Participants imagined and wrote about the sights on a campus tour.

- Next, participants completed Implicit Attitude Test (IAT) measures of their implicit gender attitudes (Good/Bad IAT) and stereotypic beliefs (Strong/Weak IAT) about women and men.

  *Good/Bad IAT:* Participants were instructed to quickly classify gender-denoting and evaluative words as quickly as possible, using two designated keys on a computer keyboard. For one block of 30 trials, *male* and *good* words were paired on the same key, and *female* and *bad* words were paired together. A second block of trials used the opposite pairings. The order in which the two key configurations were presented was counterbalanced between subjects. Errors were signaled with a red X on the computer screen. Stimuli were presented randomly, with the constraint that evaluative and gender-denoting words were presented in alternating trials.

  *Strong/Weak IAT:* The Strong/Weak IAT was identical to the Good/Bad IAT except that words that connote strength or weakness were used instead of evaluatively good or bad words.
• On the IAT, when strongly associated concepts are assigned to the same key, participants are expected to respond more quickly than when more weakly associated concepts are assigned to the same key.

• We predicted that participants would show favorable implicit attitudes toward women relative to men and that the magnitude of this effect would be greater for female participants than for male participants. Further, we predicted that male and female participants would both demonstrate evidence of implicit stereotypic beliefs about women, showing greater strength of association between the concepts female and weak and male and strong than the reverse pattern of association. Finally, the present research tested whether implicit beliefs and attitudes were susceptible to change through a priming intervention.

Results

• IAT effect scores, computed from the difference in mean log-transformed response latency for the two key configurations for each participant, reflect the extent to which participants showed an implicit belief that women are strong (in the Strong/Weak IAT) or an implicit preference for female over male (in the Good/Bad IAT).

Strong/Weak IAT

• Overall, participants demonstrated a robust implicit belief that men are stronger than are women, $F(1, 116) = 181.00, p < .0001$ (see Figure 1). The effect of participant sex on the Strong/Weak IAT was not statistically significant, $F(1, 113) = 1.62, p < .21, d = 0.29$, nor was the Participant Sex x Prime interaction, $F(1, 113) = .03$.

• We found a main effect of priming, $F(1, 113) = 5.44, p < .03, d = 0.44$. Participants primed with strong women revealed a less robust implicit belief that women are weak (relative to men), $F(1, 57) = 65.39, p < .0001, d = 1.07$, compared with participants in the neutral priming condition, $F(1, 58) = 126.85, p < .0001, d = 1.48$. The order in which participants completed the IATs did not alter the effect of the priming intervention on implicit beliefs, $F(1, 113) = .13$. 


Figure 1

Implicit Stereotypic Beliefs (IAT effect)

Prime
- Neutral
- Strong
FemLead

Participant Sex
Female
Male

-170
-163
-228
-119
Good/Bad IAT
• The Good/Bad IAT revealed a markedly different pattern of results from the Strong/Weak IAT (see Figure 2). Overall, participants showed a significant preference for women over men, $F(1, 116) = 66.98, p < .0001$. However, we also found a significant main effect of participant sex, $F(1, 115) = 39.73, p < .0001$. Whereas female participants showed a very strong implicit preference for women over men, $F(1, 57) = 121.32, p < .0001, d = 1.46$, male participants’ implicit preference for women over men was much smaller, $F(1, 58) = 5.28, p < .05, d = 0.30$. The order in which participants completed the Strong/Weak and Good/Bad IATs did not alter the effect of participant sex on implicit liking for women relative to men, $F(1, 113) = .22$.

• Finally, we tested whether changes in implicit beliefs, induced through a priming intervention, would exert second-order effects on implicit gender attitudes. Analysis of the Good/Bad IAT data indicate not; the main effect of prime was not significant for the Good/Bad IAT, $F(1, 113) = 1.06$, nor was the Participant Sex x Prime interaction, $F(1, 113) = 0.06$.

Relation Between Implicit Attitudes and Beliefs
• Overall, no correlation was observed between participants’ implicit attitudes toward women and men and their implicit belief in the relative strength and weakness of women and men, $r(115) = .06$. Separate correlational analyses were conducted for male and female participants and for participants in each of the two prime groups; none of these analyses revealed a significant relation between implicit attitude and belief.
Figure 2

Implicit Gender Attitudes (IAT effect)

Prime

- Neutral
- Strong
- FemLead

Female: 173, 195
Male: 27, 59
Discussion

In the present research, we investigated the question of the malleability of implicit gender attitudes and beliefs. The results indicate that presenting individuals with a counterstereotypical construal of women (i.e., as strong female leaders) induces change in the strength of association between the category *female* and the gender-stereotypic attribute of weakness. Moreover, this malleability was shown for both male and female participants, suggesting that implicit beliefs are not contingent upon group membership.

Despite the observed change in implicit gender beliefs, however, we did not observe a change in implicit gender attitudes as a function of the construal of women that was made accessible via the priming intervention. Additionally, implicit attitudes and beliefs were uncorrelated, for both male and female participants and irrespective of priming condition, providing further evidence for the independent operation of implicit gender beliefs and attitudes. Thus, the results of the present research provide support for the view that the two components of implicit social cognition—attitude and belief—may operate independently.

Future research may address whether an intervention directed at evaluative processes would change implicit attitudes as readily as the present intervention’s focus on stereotypes influenced implicit beliefs. One possibility is that implicit attitudes would shift but a concurrent change in implicit beliefs would not be observed—a finding that would parallel the results of the present research. That is, it may be that attitude-based and stereotype-based interventions each exert influence on the corresponding implicit judgments. For example, an intervention that required participants to imagine women in a positive (or negative) light may effect change in implicit attitudes toward women, but not alter implicit stereotypes.

Alternatively, however, it is also possible that the effects of interventions to change implicit attitudes and beliefs are asymmetrical. That is, implicit attitudes may be more entrenched, and hence more difficult to change, than are implicit beliefs. A related question concerns whether implicit attitudes are indeed more resistant to change than are implicit beliefs: Would changes in implicit attitudes be likely to induce corresponding changes in implicit beliefs, more so than the reverse?
References


