Title

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Journal

Psychological Science, 22(3)

ISSN

0956-7976

Authors

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Publication Date

2011-03-01

DOI

10.1177/0956797611399291

Peer reviewed

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Psychological Science 2011 22: 331 originally published online 11 February 2011
DOI: 10.1177/0956797611399291

Short Report

Psychological Science
22(3) 331–333

DOI: 10.1177/0956797611399291
http://pss.sagepub.com

Ego Threat and Intergroup Bias: A Test of Motivated-Activation Versus Self-Regulatory Accounts

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Received 4/15/10; Revision accepted 11/1/10

The human ego is fragile and easily threatened by events that cast it in a negative light (Baumeister, Smart, & Boden, 1996). One important consequence of ego threat is increased intergroup bias. Indeed, some research shows that this bias may stem from a need to bolster self-esteem (Fein & Spencer, 1997; Sinclair & Kunda, 1999; Tajfel & Turner, 1986). Though there have been many demonstrations of ego threat enhancing bias, the underlying mechanism is yet to be determined. The motivated-activation account proposes that ego threat facilitates the activation of negative information about out-groups as a means of restoring self-esteem (Fein & Spencer, 1997; Sinclair & Kunda, 1999). An alternative explanation is that the need to recover self-esteem following ego threat undermines the motivation to inhibit negative attitudes and behaviors toward out-group members (Sinclair & Kunda, 1999).

The existing data are compatible with either explanation. For example, increased intergroup bias exhibited on priming tasks, on word-fragment completion tasks, or in target ratings may reflect increased activation of biased associations, decreased inhibition of those associations, or both. Similarly, decreased bias may reflect decreased activation of associations, increased inhibition of associations, or both (e.g., Sherman et al., 2008). Thus, performance on these measures depends on (a) which associations are activated and (b) the extent to which people inhibit those associations while responding. To separate these competing accounts, one needs a method that provides independent assessments of these two processes. In the present research, we applied a multinomial model of implicit task performance (the Quadruple Process, or Quad, model; Sherman et al., 2008) that provides independent estimates of the extent to which biased associations and the inhibition of those associations contribute to implicit prejudice. In so doing, we provide the first direct test of the competing accounts of how ego threat increases prejudice.

Method

Fifty-seven non-Black subjects participated in the study for partial course credit. All participants first completed 12 difficult items from the Remote Associates Test (Mednick & Mednick, 1967). In the ego-threat condition ($n = 30$), participants were given their test results (all scored 2 or fewer items correct) and were told that the average score was 9 (see Heatherton & Vohs, 2000). In the control condition ($n = 27$), participants were told that their tests would be scored at the end of the session. All participants then completed a Black-White Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). The IAT had two blocks. In the compatible block, participants categorized Black male faces and negative words using the "E" key, and White male faces and positive words using the "I" key. In the incompatible block, participants categorized White male faces and negative words using the "E" key, and Black male faces and positive words using the "I" key.

Results

Analysis of IAT scores (Greenwald, Nosek, & Banaji, 2003) showed that bias was greater in the ego-threat condition ($M = 0.67$, $SE = 0.07$) than in the control condition ($M = 0.41$, $SE = 0.08$), $t(55) = 2.38$, $p = .02$, $d = 0.63$. We then modeled the correct responses and errors from the IAT using the Quad model. According to the model, performance on implicit measures reflects four distinct processes: activation of associations (AC), detection (D), overcoming bias (OB), and guessing (G). The AC parameter refers to the degree to which biased associations are activated when a stimulus is encountered. The D parameter reflects the ability to detect the correct response. OB is a self-regulatory process that overcomes associations when they conflict with correct responses. Finally, the G

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parameter reflects general response tendencies that occur when associations are not activated and the correct response cannot be determined.

The structure of the Quad model is depicted as a processing tree in Figure 1. The conditional relationships described by the model form a system of equations that predict the numbers of correct and incorrect responses in the compatible and incompatible trials. For example, on an incompatible IAT trial on which a Black face is presented, the probability of a correct response is [AC × D × OB] + [(1 – AC) × D] + [(1 – AC) × (1 – D) × (1 – G)]. This equation sums the three possible paths by which a correct answer will occur. The four parameter values are changed through maximum likelihood estimation to maximize fit between the model and the observed responses. The parameter values resulting from this procedure represent the levels of the corresponding processes that produced the observed data (for further details, see Multinomial Modeling Details in the Supplemental Material available online). The Quad model has been extensively validated (Conrey, Sherman, Gawronski, Hugenberg, & Groom, 2005; Sherman et al., 2008).

Two AC parameters, two OB parameters, and one D parameter were estimated for each condition (ego threat vs. control), and one G parameter was estimated across conditions.[1] The two AC parameters for each condition estimated the strength of activated Black-unpleasant associations and White-pleasant associations. The two OB parameters for each condition measured the extent to which Black-unpleasant and White-pleasant associations were overcome.

The model provided a good fit to the data, $\chi^2(5) = 0.63$, $p = .99$, with an overall error rate of 7.4%. The two OB parameters, the D parameter, and the White-pleasant AC parameter did not differ between conditions, all ps > .10. In fact, the Black-unpleasant OB parameter was nonsignificantly higher in the ego-threat condition than in the control condition. The Black-unpleasant AC estimate was greater in the ego-threat condition ($M = .12$, $SE = .02$) than in the control condition ($M = .06$, $SE = .02$), $\chi^2(1) = 5.88$, $p = .02$, $\varphi = .32$. Tables S1 and S2 in the Supplemental Material available online present all error rates and parameter estimates.

Discussion

The motivated-activation explanation of ego-threat-induced intergroup bias suggests that ego threat activates negative information about out-groups in order to increase self-regard. The present results support this account. Black-unpleasant associations increased significantly in the ego-threat condition compared with the control condition. The alternative view that ego threat reduces self-regulation of negative associations was not supported. This study is important in that it is the first to independently assess the activation of bias and the inhibition of bias in implicit attitudes induced by ego threat.

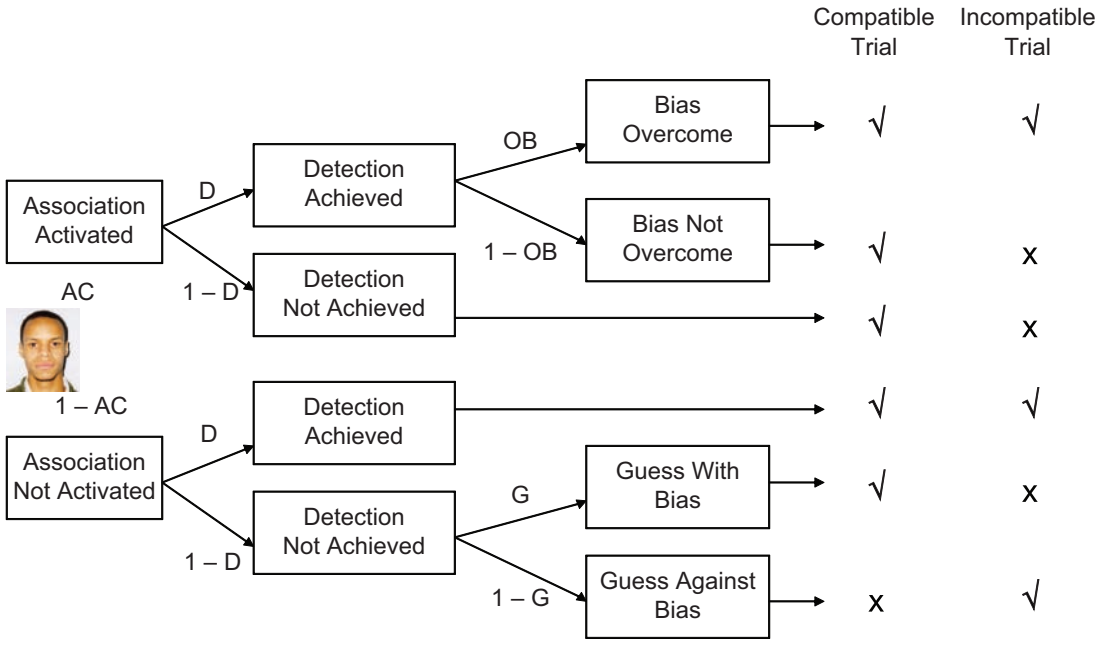

Fig. 1. The Quadruple Process, or Quad, model of implicit task performance. Each path represents a likelihood. Parameters with lines leading to them are conditional upon all preceding parameters (AC = activation of biased associations; D = detection; OB = overcoming bias; G = guessing). The table on the right side of the figure depicts which paths lead to correct (√) and incorrect (X) responses on compatible and incompatible trials.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Funding

This research was supported by a grant from the National Science Foundation (BCS 0820855) to the second author.

Supplemental Material

Additional supporting information may be found at http://pss.sagepub.com/content/by/supplemental-data

Note

1. There were insufficient degrees of freedom to test G separately in the two conditions. The G parameter is not pertinent to testing the adequacy of the motivated-activation and self-regulatory accounts.

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