Beliefs about group malleability and out-group attitudes: The mediating role of perceived threat in interactions with out-group members

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Abstract

Recent research suggests that inducing fixed (rather than malleable) beliefs about groups leads to more negative attitudes toward out-groups. The present paper identifies the underlying mechanism of this effect. We show that individuals with a fixed belief about groups tend to construe intergroup settings as threatening situations that might reveal shortcomings of their in-group (perceived threat). In the present research, we measured (Study 1) and manipulated (Study 2) participants’ lay theories about group malleability. We found that the extent to which individuals had an entity (versus an incremental) group theory influenced the level of threat they felt when interacting with out-group members, and that perceived threat in turn affected their level of ethnocentrism and prejudice. These findings shed new light on the role of lay theories in intergroup attitudes and suggest new ways to reduce prejudice. Copyright © 2015 John Wiley & Sons, Ltd.

Halperin, Russell, Trzesniewski, Gross, and Dweck (2011) recently published an influential paper showing that inducing malleable beliefs about groups led to more positive attitudes toward out-groups. The more Israeli Jews and Palestinians believed that social groups in general had a fixed inherent nature, the more negatively they were disposed toward each other. Although the scientific evidence for the observed effect is unambiguous—for example, beliefs about group malleability were measured in some studies and manipulated in other studies, the authors used a nationwide sample (N=500)—it remains unclear why the effect occurs. Building upon earlier work on lay theories about personality (Chiu, Hong, & Dweck, 1997), we hypothesized that the effect of beliefs about group malleability on attitudes toward out-groups is mediated by perceived threat. The purpose of the present paper is to replicate the Halperin et al. findings and to provide evidence for the idea that perceived threat is the generating mechanism for the effect.

Although the Halperin et al. (2011) findings are impressive, they are also surprising. It is not theoretically obvious why Israeli Jews, who agree with statements such as “Groups can do things differently, but the important parts of who they are can’t really be changed,” would also agree with statements such as “All that Palestinians really want is to annihilate Israel.” Note that the researchers measured participants’ beliefs about the malleability of social groups in general and mentioned Palestinians only later when they assessed participants’ out-group attitudes. At this point, there is no theoretical account for why the belief that groups in general can change their basic characteristics goes hand in hand with positive—or less negative—attitudes toward a disliked out-group. The two studies presented in this article attempt to address this important question.

In a more recent paper, Halperin and colleagues provided evidence for the idea that the effect of group malleability on attitudes toward out-groups is mediated by intergroup anxiety (Halperin et al., 2012). The authors manipulated participants’ beliefs about group malleability and then measured two dependent variables: (i) the extent to which they would feel suspicious and anxious if they were to meet a member of the out-group; and (ii) their preference for an out-group member as a debate/conversation partner. The data were consistent with the hypothesized mediational model. It appears, however, that the mediator and the outcome measure are two indicators of the same latent construct. The two measures were highly correlated with each other (r = −.61). The authors also did not test for the three-path mediation demonstrating that the effect of the experimental manipulation on the outcome measures was indeed mediated by changes in beliefs about group malleability. Researchers are thus still left to wonder which mechanism generates the effect in the original Halperin et al. (2011) paper.

Threat and Challenge

Useful insight about the possible generating mechanism for the effect of group malleability on out-group attitudes comes from the literature on beliefs about the malleability of individuals, which are sometimes referred to as “lay theories of personality” (Dweck, Chiu, & Hong, 1995). Dweck and her colleagues have shown that “entity personality theorists”—people who hold
that personal characteristics of individuals are fixed entities that cannot be changed even if the individuals are motivated to do so—feel threatened in numerous interpersonal situations. They “tend to focus on self-judgment” (Chiu et al., 1997, p. 20) and have a tendency “to focus on judging their level of intelligence” (Chiu et al., 1997, p. 20). They also tend to perceive academic settings as competitive, potentially threatening situations that might reveal their shortcomings. If lay theories of groups have a similar effect on intergroup situations as lay theories of personality have on interpersonal situations, then one might expect that that “entity group theorists” tend to focus on judgments about their in-group and generally perceive intergroup settings as competitive, potentially threatening situations that might reveal shortcomings of their in-group or of themselves as members of their in-group.

Dweck and colleagues also showed that an incremental lay theory of personality—the belief that personal characteristics are malleable and can be developed with time and effort—causes people to construe interpersonal situations as a challenge. They “place the emphasis on developing versus judging their ability. In the face of obstacles, they tend to focus on the factors that mediate improved performance and increased ability” (Chiu et al., 1997, p. 20). Applied to lay theories of groups, one might therefore predict that individuals, who believe that groups are malleable, will also focus on developing versus judging their in-group. Likewise, they will see cultural differences as an opportunity for self-growth, both for themselves as group members and their in-group as a whole.

The different construals of intergroup situations by individuals with fixed versus malleable beliefs about groups map onto Drach-Zahavy and Erez’s (2002) analysis of perceptions of threat and challenge in a variety of situations. On the basis of earlier work by Tomaka, Blascovich, Kibler, and Ernst (1997), these authors suggested that individuals will feel threatened when they perceive a situation as a source of failure and when they have the impression that they do not have the appropriate coping strategies to overcome the obstacles. Individuals will construe a situation in terms of challenge if they evaluate “the situation as an opportunity for self-growth and identify the coping strategies available to manage the demands” (Drach-Zahavy & Erez, 2002, p.670). We therefore predict that “entity group theorists” will perceive intergroup situations as threatening, in the sense that they do not have sufficient resources to overcome the obstacles.

Intergroup contact situations are often appraised as threatening (e.g., Trawalter, Richeson, & Shelton, 2009) and particularly stressful when individuals are chronically concerned about appearing prejudiced in diverse settings (Trawalter, Adam, Chase-Lansdale, & Richeson, 2012). The negative appraisal of intergroup contact increases perceived threat, as well as the need for coping strategies. Socially negative behaviors, such as antagonizing, avoiding, and/or freezing behaviors, are suggested to be coping strategies that people use to deal with threatening situations (Trawalter et al., 2009). Thus, prejudice toward disliked out-group members can be a way to cope with one’s chronic appraisal of intergroup situations as threatening, for two reasons: It allows the perceiver to reduce contact with out-group members, therefore reducing threat; and it allows the perceiver to attribute their inability to overcome the obstacles to someone else rather than themselves, therefore avoiding a negative self-attribution.

Taken together, we predicted (i) that individual differences in beliefs about group malleability predict out-group attitudes (ethnocentrism and prejudice toward a disliked out-group); and (ii) that this effect would be mediated by participants’ perceptions of threat when interacting with out-group members. We examined these hypotheses in two studies.

**STUDY 1**

**Method**

**Participants**

Two-hundred and thirty-nine students from a French university took part in an online study in exchange for credit course or for a lottery prize. Participants who were not French, or who had at least one non-French parent, were excluded from the analyses. We considered 211 French participants (93% female, $M_{\text{age}}=20.87$ years, $SD=4.81$).

**Measures**

Participants filled out a questionnaire in which five constructs were measured: beliefs about group malleability, threat, challenge, ethnocentrism, and prejudice. Our measure of beliefs about group malleability contained nine items and was adapted from Rattan and Dweck (2010) and Halperin et al. (2011). Four items represented an incremental/malleable conception of groups (e.g., “The current attitudes and behaviors of the members of a group are not necessarily characteristic of that group. Groups change according to the circumstances”), whereas five reflected a more fixed/entity conception (e.g., “Groups cannot really change what kind of mentality they have. Some groups have a great mentality and some do not, and they cannot change much”). The fixed/entity items were later reversed so that higher scores always reflect greater malleability, $\alpha=.75$. Participants responded to the items of this measure (and to all other items in the questionnaire) on 5-point Likert-scale, ranging from 1 = strongly disagree to 5 = strongly agree.

Threat and challenge were measured with a total of 13 items, all adapted nearly word by word from Drach-Zahavy and Erez (2002). Seven items measured the extent to which participants perceived intergroup situations as threatening (e.g., “I’m worried that I lack the abilities to successfully interact with people from different cultures,” $\alpha=.74$). Six other items assessed participants’ tendency to construe intergroup situation as challenging (e.g., “To get to know better people from different countries provides me with opportunities for self-growth,” $\alpha=.68$).

Participants also completed a 12-item ethnocentrism scale (adapted from Scheepers, Felling, & Peters, 1990; e.g., “Foreigners who live here should take over our customs,” $\alpha=.87$) and the eight-item version of the Modern Racism Scale toward Arabs (e.g., “The entrance of Arab families into our country...
should be strictly limited.” \( \alpha = .85 \). We chose Arabs as the out-group because studies have shown that Arabs are the primary target group of prejudice and discrimination in France (Guimond & Dambrun, 2002).

### Results and Discussion

Descriptive statistics and bivariate correlations are shown in Table 1. Participants’ beliefs about group malleability reliably predicted threat, challenge, ethnocentrism, and prejudice. Threat, but not challenge, predicted ethnocentrism and prejudice. Given the high correlation between ethnocentrism and prejudice \((r = .71)\), we standardized and averaged the two scores to obtain one out-group attitude score for each participant. We then conducted a mediational analysis (as suggested by Preacher & Hayes, 2004), which revealed that the effect of beliefs about group malleability on out-group attitudes was mediated by perceived threat. The indirect effect via threat has a value of \(-0.26\), and its associated 95% confidence interval is \([-0.38, -0.16]\). The fact that zero falls outside the confidence interval supports the hypothesized mediation. The results of Study 1 confirmed our predictions.

### STUDY 2

Study 2 was designed to extend the findings of Study 1. In Study 2, we manipulated rather than measured participants’ beliefs about group malleability.

#### Method

**Participants**

One-hundred and sixty-seven students from a French university contributed data for an online study. As in Study 1, participants who were not French, or who had at least one non-French parent, were excluded from the analyses. Hence, we retained 143 participants for the analyses (75% female, \( M_{\text{age}} = 21.96 \) years, \( SD = 4.81 \)).

**Design and Measures**

Participants were assigned to either the incremental or the entity prime condition. On the basis of similar procedures by Poon and Koehler (2006), participants were asked to read three different proverbs. In the incremental prime condition, proverbs were related to change (e.g., “It is never too late to learn”), whereas in the entity prime condition, the proverbs were related to the difficulty of changing (e.g., “You cannot teach an old dog new tricks”). Following each proverb, participants were asked about how familiar they were with the proverb (1 = not at all; 5 = extremely) and to briefly describe its meaning. Participants were then told that these proverbs were normally applied to individuals, but it was possible to apply them also to social groups. They were asked to write down a name of a national group that came to their mind while thinking about each of the proverbs. Finally, participants rated their degree of agreement with the proverb (1 = strongly disagree; 5 = strongly agree).

As in Study 1, we assessed theories of group malleability. Given that it was only a manipulation check, we measured this construct with only two items (the two entity items that loaded most highly on the first unrotated factor in Study 1, \( r = .50, p < .001 \)). Threat, challenge, ethnocentrism, and prejudice were measured with the same scales as in Study 1.

### Results and Discussion

As in Study 1, we reverse-coded and averaged the appropriate items. See Table 2 for descriptive statistics and the bivariate correlations among the dependent measures. The experimental manipulation had a statistically significant effect on beliefs about group malleability, \( t(141) = 1.95, p = .05 \), but not on the other outcome measures, \( p > .23 \). Participants’ beliefs about group malleability were correlated with threat, prejudice, and ethnocentrism (Table 2). Ethnocentrism and prejudice were again highly correlated; we thus standardized and combined them into a single out-group attitude score. We then tested the three-path mediational model shown in Figure 1. As can be seen in the Figure, the experimental manipulation affected participants’ beliefs about group malleability, which in turn affected threat, which in turn affected out-group attitudes. Following Hayes, Preacher, and Myers (2011), we conducted a three-path mediation analysis, with agreement and familiarity as covariates. This analysis revealed that the indirect effect of experimental manipulation on intergroup bias has a value of \(-0.11\). The associated confidence interval was \([-0.21, -0.01]\). Once again, the fact that zero is not part of the confidence interval suggests that the

#### Table 1. Means, standard deviations, and correlations for beliefs about group malleability, threat, challenge, ethnocentrism, and prejudice in Study 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Descriptives</th>
<th>Correlations</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>1. Group malleability</td>
<td>3.46</td>
<td>0.56</td>
</tr>
<tr>
<td>2. Threat</td>
<td>2.07</td>
<td>0.57</td>
</tr>
<tr>
<td>3. Challenge</td>
<td>3.69</td>
<td>0.51</td>
</tr>
<tr>
<td>4. Ethnocentrism</td>
<td>2.07</td>
<td>0.60</td>
</tr>
<tr>
<td>5. Prejudice</td>
<td>2.68</td>
<td>0.71</td>
</tr>
</tbody>
</table>

Note: \(^{\dagger} p < 0.1; ^{\ast} p < .05; ^{**} p < .001\).
data are consistent with the hypothesized mediational model shown in Figure 1. In order to provide additional evidence for our hypothesized model, we tested an alternative causal model: We entered the experimental manipulation as predictor, beliefs about group malleability (the manipulation check) as the first mediator, prejudice as the second mediator, and threat as the outcome variable. However, this model showed a weak indirect effect (−0.01, with zero inside of the confidence interval [−0.09, 0.07]).

GENERAL DISCUSSION

Prior research has shown that beliefs about group malleability influence people’s attitudes toward out-groups: The more individuals believe that groups in general can change their basic characteristics, the less negatively they are disposed toward a disliked out-group (Halperin et al., 2011). The two studies presented in this article provide evidence for the idea that perceived threat is the generating mechanism for this effect. We either measured (Study 1) and manipulated (Study 2) participants’ beliefs about group malleability. We showed that these beliefs affected the extent to which participants construed everyday intergroup situations as threatening. Threat in turn affected participants’ attitudes toward foreigners in general and toward a specific out-group (Arabs in the present case). The analyses showed that the conditions for mediation were met, suggesting that threat functions as a mediator of the effect of beliefs about group malleability on out-group attitudes.

Our threat measure included both dimensions identified by Drach-Zahavy and Erez (2002): the perception of intergroup situations as a source of failure and the impression that one does not have the appropriate coping strategies to overcome the obstacles in such situations. The more individuals believe that groups can change, the less they construed interactions with out-group members as a source of failure and the more they thought they had the ability to overcome potential problems. Note that this conceptualization of threat comes directly from the literature on challenge versus threat (Tomaka et al., 1997) but is somewhat different from other conceptual frameworks that focus more on the extent to which the out-group poses a real or imagined threat to the in-group (Quillian, 1995).

Participants’ beliefs about group malleability predicted the extent to which they perceived interactions with out-group members both as threatening and challenging, but only threat mediated the effect of beliefs about group malleability on out-group attitudes. For some readers, it may be surprising that challenge did not play an equally pivotal role. One should remember, however, that our dependent variables assessed negative feelings toward out-groups (ethnocentrism and racism). It could be that challenge has other important effects that were not measured in our studies. Challenge may predict interest in joining a diverse work team (Tausch, Kenworthy, & Hewstone, 2006), liking of out-group members (Pittinsky, Rosenthal, & Montoya, 2011), or one’s interest in spending a year abroad (Paluck, 2006). Future research will determine whether these predictions are correct.

Our research complements earlier work by Neel and Shapiro (2012) and by Carr, Dweck and Pauker (2012) showing that beliefs about the malleability of racial bias affect a variety of intergroup attitudes and behaviors. The more individuals believe that racial bias is fixed, the more they tend to adopt performance strategies (e.g., try to be nicer than one would usually be) and the less they tend to adopt learning strategies (e.g., ask what the other person is thinking) in difficult interracial interactions (Neel & Shapiro, 2012). Individuals with fixed beliefs about racial bias also have less desire to engage in interracial interactions and tend to report greater avoidance and discomfort in anticipation of an interracial interaction (Carr, Dweck, & Pauker, 2012). It should be noted, however, that beliefs about the malleability of groups—a belief about a social category—are rather different from beliefs about the malleability of racial bias—a belief about a psychological
process. In both papers, participants’ beliefs about the malleability of racial bias were uncorrelated with explicit measures of prejudice. The present findings support the idea that beliefs about the malleability of groups affect people’s prejudice, and this effect is mediated by perceived threat defined as the impression that one does not have sufficient resources to overcome the obstacles that are inherent to interactions with out-group members.

Although the present findings shed new light on the influence of group malleability on intergroup bias via perceived threat, it is important to discuss the limitations of the current research. Our findings show that perceiving a national group as malleable decreases prejudice, to the extent to which dealing with members of this group is perceived as non-threatening. However, these findings are based on self-report measures. We believe that it would be interesting to explore a more implicit way to measure perceived threat (e.g., using physiological measures) within the context of group malleability. Future research should examine how people’s beliefs about group malleability can be influenced in the real world and how long the observed effect lasts. It might also be interesting to explore whether there are different ways to affect perceived threat (i.e., the perception of not having the resources to overcome the obstacles that might come up in an intergroup interaction). The present findings suggest that any variable that reduces perceived threat is likely to lead to a reduction in intergroup bias. Therefore, future intervention programs aimed at reducing prejudice might attempt to explicitly manage individ-
group bias. Therefore, future intervention programs aimed at overcoming the obstacles that might come up in an intergroup interaction may be interesting to explore whether there are different ways to affect perceived threat (i.e., the perception of not having the resources to overcome the obstacles that might come up in an intergroup interaction). The present findings suggest that any variable that reduces perceived threat is likely to lead to a reduction in intergroup bias. Therefore, future intervention programs aimed at reducing prejudice might attempt to explicitly manage individuals’ perceptions of their own resources to deal with intergroup situations as an indirect way to reduce hostility between groups.

The findings reported in this paper have practical implications for prejudice reduction. A recent review of the literature (Paluck & Green, 2009) reminded us that social psychologists have generated relatively few prejudice reduction methods, the effectiveness of which has been evaluated in the field. The present studies show that prejudice may be reduced effectively by communications that encourage individuals to construe interactions with out-group members as an opportunity for self-growth (and not as a source of failure) and that make salient to individuals that they have the capacities to overcome the obstacles that are likely to occur in these types of interactions. Halperin et al. (2011) and the present studies suggest that negative feelings toward out-groups can be moderated by changing individuals’ beliefs about the malleability of groups. But if beliefs about group malleability are the distant cause and perceived threat is the proximal cause, then another way to influence negative feelings toward out-groups is to reduce the perceived threat directly. This is exactly what recently developed paradigms for managing diversity in the workplace are trying to achieve (Thomas & Ely, 1996). The goal is to get employees to endorse diversity not as a necessary evil that they have to endure for fairness reasons but as a trump card that allows them to be more creative and to make better decisions. The goal of such approaches to diversity is to get employees to perceive interactions with individuals who are different from them as an opportunity for self-growth and to provide them with the necessary interpersonal and intercultural skills so that they have the impression that they can identify the coping strategies available to manage the demands. The findings of the present article suggest that these new approaches to diversity are likely to be successful.

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