Effects of Intergroup Contact and Political Predispositions on Prejudice: Role of Intergroup Emotions

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We are grateful to Danny Tokusato and Thomas McLean for help with data collection, and to the members of the Purdue Intergroup Emotions seminar for ideas, insights, questions, and discussion. We acknowledge support from grants K02 MH01178 and R01 MH63762 from the National Institutes of Health. Direct correspondence to Eliot R. Smith, who is now at the Department of Psychology, Indiana University, 1101 E. Tenth St., Bloomington, IN 47405 or esmith4@indiana.edu.

Version of November 26, 2003

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Abstract

Two broad distal causes of prejudice are past history of intergroup contact and general political predispositions. Two studies investigate the extent to which these effects are mediated by emotions directed at the outgroup, as proposed by Intergroup Emotions Theory (Smith, 1993). In both studies, past intergroup contact and Social Dominance Orientation predict prejudice, as measured either by a feeling thermometer or the Modern Racism Scale. Furthermore, for both studies these effects are significantly mediated by intergroup emotions. Stereotype endorsement (in Study 1) and stereotype knowledge (Study 2) were entered as alternative potential mediators alongside emotions but were found to have no effect. Increased attention to the role of emotions in intergroup relations, including in the mediation of such powerful and well-known effects as those of intergroup contact and political predispositions, appears to be warranted.

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Prejudice – generally defined as a negative evaluation or antipathy toward a social group or its members – is affected by at least two major classes of causes. One is an individual's personal history of intergroup contact. As many have argued (Allport, 1954; Amir, 1976; Pettigrew, 1986; Stephan & Stephan, 2000; Dovidio et al., 2003), contact with members of a particular group is associated with lower levels of prejudice against that group. According to a major meta-analysis (Pettigrew & Tropp, 2000) that summarizes data from hundreds of studies and over 150,000 individual participants, this effect is indeed generally observed. A variety of arguments and data show that the effect is mostly due to contact reducing prejudice rather than the reverse causal path (i.e., less prejudiced individuals being more likely to engage in intergroup contact). For example, contact that is forced (not chosen by the individuals involved) is associated with larger rather than smaller effects on prejudice (Pettigrew, 1998).

A second major influence on prejudice is general personality variables that give rise

to broad political predispositions. A social psychological research tradition going back a half century has documented that people who score high on certain individual differences such as authoritarianism (Adorno, Frenkel-Brunswik, Levinson & Sanford, 1950), right-wing authoritarianism (Altemeyer, 1988), or social dominance orientation (Pratto, Sidanius, Stallworth, & Malle, 1994) also tend to be prejudiced against certain social groups (such as African-Americans or Jews). The reason is that these groups are perceived as challenging traditional values or hierarchies of dominance, and people who adhere more strongly to conventional and traditional values are expected to be more threatened by outgroups who pose symbolic or realistic challenges to those values. Perceived threat in turn leads directly to prejudice (Stephan & Stephan, 2000).

Emotions and Prejudice

The goal of this paper is to highlight the role of emotions in intergroup relations, particularly their role in the processes that causally link intergroup contact and broad political views to prejudice. Emotions have been relatively neglected by prejudice researchers over the last several decades, perhaps as part of a general tendency in social psychology to focus on more narrowly cognitive representations and processes (such as stereotypes). Of the limited amount of research linking affect and intergroup processes, much (e.g., Bodenhausen, 1993) examines effects of "incidental" affect. This is affect arising from outside the intergroup situation itself, for example a mood induced by some external source, that may nevertheless influence people's judgments or behaviors related to social groups. Perhaps surprisingly, relatively less research has examined the effects of "intrinsic" affect, affect arising directly out of the intergroup situation itself (Mackie & Smith, 1998), although there are a few studies of this sort (e.g., Wilder, 1993).

The relative neglect of affective and emotional factors has begun to be reversed over the last decade or so. In 1993, Mackie and Hamilton edited a volume entitled *Affect, cognition, and stereotyping* collecting a number of chapters related to this interface. One chapter in that volume (Smith, 1993) introduced the fundamental ideas underlying Intergroup Emotion Theory. This theory builds on the idea that salient group memberships constitute an integral part of the self, as postulated by social identity and self-categorization theory (e.g., Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). When individuals categorize themselves as members of a group, they regard themselves as relatively interchangeable exemplars of the group rather than as unique individuals. When similarities between the self and in-group become salient in this way, mental representations of self and in-group become inextricably linked (Coats, Smith, Claypool, & Banner, 2000; Smith & Henry, 1996; Smith, Coats, & Walling, 1999). As a result, like any aspect of the self, the group acquires emotional significance. In other words, people not only define themselves as group members, they also react emotionally when situations or events affect the in-group.

Intergroup Emotions Theory combines this social identity perspective with the assumptions of appraisal theories of emotion (Frijda, 1986; Roseman, 1984; Scherer, 1988; C. A. Smith & Ellsworth, 1985). Although appraisal theorists have generally assumed that emotions follow only from events related to the individual or personal self, Intergroup Emotions Theory claims that emotions are also generated by the collective aspect of the self. For example, when an outgroup is appraised as threatening an ingroup, negative intergroup emotions such as fear or anger may result, and become part of an overall configuration of prejudice against the outgroup that may motivate discriminatory

behavior. Alternatively, when outgroups are appraised in positive ways, positive emotions including sympathy or pride may be evoked. These positive emotions lead to a more favorable overall reaction to the outgroup as well as to more favorable behaviors.

Thus, Intergroup Emotions Theory holds that emotions experienced by individuals with respect to their group memberships are an important part of the overall story of prejudice and intergroup relations. IET has been supported by several types of evidence to date (Devos, Silver, Mackie, & Smith, 2002; Mackie, Devos, & Smith, 2000; Mackie, Silver, & Smith, 2002). In this paper, we examine the direct effects of emotions on prejudice, as well as the potential role of emotions in mediating the already-known effects of intergroup contact and general political predispositions. Specific hypotheses about the potential role of emotion can be developed in each of these areas.

Emotions As Mediators of Effects on Prejudice

Contact effects. Intergroup contact effects could be mediated by several different types of mechanisms, which include broadly affective as well as cognitive factors (Dovidio et al., 2003). One affective mediator is aversive racism or intergroup anxiety (Gaertner & Dovidio, 1986; Stephan & Stephan, 1985). These theories hold that many members of majority groups (e.g., White Americans) avoid contact and interaction with minorities not because they dislike or distrust them in any direct way, but because they experience discomfort and unease in cross-group interactions. That is, majority group members may feel uncertain as to how to act, ill at ease in choosing conversational topics, afraid of unintentionally giving offense, etc. For these reasons they may actively avoid interaction with minority group members (which, of course, to those group members looks a lot like a behavioral response driven by simple prejudice).

This line of theory holds that experience with intergroup contact will help reduce unease or intergroup anxiety. Not changes in beliefs or attitudes about the outgroup, but reduced anxiety regarding intergroup interaction is key to this type of prejudice reduction. In short, the core idea of this perspective is that negative emotions can be aroused by intergroup interaction, so certain types of intergroup contact can effectively reduce prejudice by reducing those negative emotions. Emotions (especially negative ones) become a key mediator. Supporting this idea, Stephan, Diaz-Loving, and Duran (2000) find that past contact of American or Mexican college students with members of the outgroup (i.e., Mexicans or Americans) led to both decreased anxiety and improved attitudes toward the outgroup. Similarly, Blascovich et al. (2001) demonstrated that past intergroup contact with African-Americans significantly lessened physiological reactions characteristic of negative "threat" appraisals experienced by White students in laboratory interactions with Black confederates. Findings such as these directly implicate a reduction in negative emotions as one consequence of past intergroup contact.

A second potential affective mediator involves more positive emotions and actual intergroup friendships. The role of friendship in the reduction of prejudice through intergroup contact has been explored by Wright, Aron, and their associates (Wright et al., 1997). Contact often creates the condition for the emergence of actual friendship, a key factor that one can find in the thinking of Allport (1954) and other theorists regarding intergroup contact (see Pettigrew, 1998). Friendship in turn, according to Aron's model (e.g., Aron, Aron, Tudor, & Nelson, 1991) involves the incorporation of the friend in the psychological self. If the friend is a member of a different group, this means that his or her group membership is by the same token incorporated in the self. Because the self is

generally regarded positively, this process should indirectly make views of the friend's group more favorable. Supporting this notion, Pettigrew (1997) found in a large sample from several European countries that people who have an outgroup friend were generally less prejudiced against that group. Sophisticated nonhierarchical analyses demonstrated that the effect was not simply due to the reverse (prejudice --> friendship) causal link. Emotions should play a key role in mediating the effects of intergroup friendship on prejudice, as Pettigrew (1998) argued. Friendship should lead both to decreases in negative emotion and to increases in positive emotion. Indeed, Pettigrew's 1997 study found that intergroup friendships led to increases in both sympathy and admiration for the outgroup.

Political predispositions. Broad political predispositions, such as Social Dominance Orientation (SDO) (Pratto, Sidanius, Stallworth, & Malle, 1994), may also have effects on prejudice that are mediated by emotion. SDO is a stable individual difference variable, conceptualized as a personality trait, that measures the "extent to which one desires that one's in-group dominate and be superior to out-groups" (Pratto et al., 1994, p. 742). People higher on SDO prefer relations between groups to be hierarchical in nature, whereas those lower on SDO prefer intergroup relations to be equal. Numerous studies have demonstrated that SDO is correlated with prejudice toward a number of different groups that threaten the status quo (Altemeyer, 1998; Whitley & Lee, 2000; Pratto et. al., 1994; Sidanius, Pratto, & Bobo, 1994; Whitley, 1999).

SDO is conceptualized as deep-seated and stable, rather than as a transient reaction to the changing political issues of the day. Thus, researchers have typically used it as an independent variable. However, few studies have looked at mediators of the relationship

between SDO and prejudice (cf. Whitley, 1999). It is plausible that the SDO-prejudice relationship is mediated by negative emotions. This is because people high on SDO think low-status groups should keep "in their place" and not challenge the system of inequality, which high-SDO individuals see as right and beneficial. Such challenges should therefore lead to negative intergroup emotions triggered by perceived threat (e.g., fear, anger, resentment) in people high on SDO.

Stereotypes as Mediators of Effects on Prejudice

Contact effects. Effects of intergroup contact might be mediated by more cognitive processes as well as by emotions. One obvious possibility is that contact leads to increased knowledge about the outgroup, which should help undermine inaccurate stereotypes. Once people come to see group members as they really are (rather than in negatively biased and stereotypic terms), prejudice should naturally be reduced. Despite its intuitive appeal, the available evidence offers only partial support for this picture. First, a number of studies in the social cognition tradition (Rothbart & John, 1985; Johnston & Hewstone, 1992, among others) demonstrate various ways in which perceivers can discount, engage in attributional reasoning, or recategorize to avoid changing their stereotypes in response to seemingly inconsistent information. Thus, stereotype change may be unlikely even when intergroup contact occurs, reducing its ability to play a mediating role in the reduction of prejudice. Second, Pettigrew and Tropp's (2000) meta-analysis shows strong effects of contact on affective measures, as well as on measures tapping overall group evaluation (i.e., prejudice), but only weak effects of contact on measures of group stereotypes. The latter weak effect logically cannot mediate a strong effect.

Political predispositions. With regard to SDO, as noted above there has been little research examining any potential mediators of its effects on prejudice. However, it is plausible that stereotypes might be a mediator. Those high in SDO believe that groups are naturally differentially suited for dominant positions in a hierarchical society. Thus, they might be presumed to hold negative stereotypes about traditionally low-status groups such as African Americans, especially stereotypes regarding low intelligence and ambition that portray members of that group as naturally deserving their subordinate position. These negative stereotypes in turn might be expected to lead directly to prejudice.

Thus, theory suggests that both emotions and cognitive representations (stereotypes) may be important mediators of both the effects of past intergroup contact and of SDO on prejudice, although these hypotheses have yet to be directly tested. The goals of this paper are the following.

- To replicate past findings of effects of intergroup contact and SDO on prejudice.
- Most centrally, to examine the role of intergroup emotions as causes of prejudice in their own right, and as potential mediators of contact effects and political ideology effects.
- To examine the role of stereotypes as an alternative potential mediator.

Study 1

Method

110 White college students completed questionnaires intended to assess their thoughts and feelings about African Americans. Participants completed measures of our

independent variables, past intergroup contact and SDO, measures of potential mediators including intergroup emotions and group stereotypes, as well as a feeling thermometer and the Modern Racism Scale (McConahay, 1986) as measures of prejudice. The measures are described here in the order in which participants encountered them in the questionnaire packet.

Intergroup contact was assessed by three measures. The first item accessed the number of African-American acquaintances the participant has had with the following question, "Please indicate how many African-Americans you have had two or more conversations with in the last 6 months". Responses were 10 numerical categories ranging from 0 to "more than 20." The second and third items accessed the closeness of the participant's closest present or past relationship with an African-American using the graphical Inclusion of the Other in the Self Scale (IOS) (Aron, Aron, Tudor & Nelson, 1991) and a simple question about closeness, "How close would you say your relationship is (or was) to this person, currently or at the time when you were the closest?". Responses were on a 4-point scale anchored with not close at all to very close. Similarly to previous researchers (Islam & Hewstone 1993; Voci & Hewstone, 2003), these three items were combined into a single measure of intergroup contact (alpha =0.61).

We wished to tap two types of episodic emotions felt toward African-Americans; emotions experienced while interacting with or encountering African-Americans, and emotions experienced while thinking about African-Americans. Specifically, encounter emotions were assessed with the following type of question, "How often have you felt afraid when encountering or interacting with African-Americans?" Thought-related

emotions were assessed using the following type of question, "How often have you felt afraid when thinking about things that African-Americans have done or the kinds of people they are?" The emotions asked about were afraid, angry, disgusted, uneasy, hopeful, proud, sympathetic, resentful, respectful, grateful, admiring, and irritated. Responses were given on a 5-point scale from Never to Almost Always.

Participants also completed a feeling thermometer as an index of prejudice. Participants reported how "warm" or "cold" they felt towards various social groups including African-Americans on scales from 0 to 100. A second measure of prejudice, more political and perhaps less directly affective in content, was the Modern Racism Scale (McConahay, 1986), a 7-item measure. A sample item is “Over the past few years, blacks have gotten more economically than they deserve.” We reverse-scaled the thermometer measure so that higher values on both measures, which we will label prejudice-thermometer and prejudice-MRS, indicate more prejudice. In our sample these two measures correlated r = .40, a value that is high enough to justify calling them both measures of prejudice, but not so high as to suggest that they should be combined into a single measure.

Participants also completed the measure of Social Dominance Orientation (SDO) (Pratto, Sidanius, Stallworth, & Malle, 1994). Sample items include "Some groups of people are simply not the equals of others" and "We need more equality" (reverse scored).

Finally, we included a measure of endorsement of stereotypes of African-Americans consisting of 30 trait words adapted from Devine and Elliot (1996). Participants were asked to indicate to what extent they believed African-Americans possessed each of these

traits on a 7-point scale with anchors "much less than most groups" and "much more than most groups."

Results

Preliminary analyses. First, we factor analyzed the 24 emotion items. As is typical when positive and negative emotion self-reports are analyzed, a clear 2-factor solution was obtained. (The first several eigenvalues accounted for 27%, 24%, 6%, 6%, and 4% of the total variance.) The factors represented positive versus negative emotions. Thus, the distinction between emotions experienced when thinking about the target group and emotions experienced in actual contacts with individual group members was not empirically realized. This is understandable for a variety of reasons, particularly the likelihood that an emotion repeatedly experienced in either of these contexts may become associated with the group and re-activated upon later encounters or when later thinking about the group. On this basis, we combined the two types of emotion question and formed two simple unit-weighted scales representing negative emotions and positive emotions.

Similarly, we factor analyzed the 30 stereotype items. Again, two factors emerged, with the first several eigenvalues amounting to 25%, 16%, 7%, 6%, 5% of the total variance. These factors appeared to reflect largely the positive versus negative valence of the trait words. For simplicity of interpretation and to parallel the positive and negative emotion measures, we formed unit-weighted scales representing positive and negative stereotypes. (A few traits had low and/or relatively equal loadings on both of these factors; we assigned these to one or the other scale on the basis of their positive or negative valence.)

Effects of Contact and SDO. The main independent or exogenous variables for our analysis were intergroup contact and SDO. Besides these variables, we also examined the effects of participant sex. The reason is that although sex typically has small and variable relations to racial prejudice (see Hoxter & Lester, 1994), it is often related to emotions (with women typically reporting more emotions than men). Thus, sex is included in the analysis both to gain insights into its effects on prejudice and intergroup emotions, as well as to guard against the possibility of spurious findings.

Our analysis of the effects of these background variables on the prejudice-thermometer measure (initially in an analysis with the emotion mediators omitted from the model) found significant effects of sex, SDO, and intergroup contact on prejudice (regression coefficients in second and third columns of Table 1). Replicating past findings, those higher in SDO and those with less past intergroup contact showed more prejudice. In addition, females showed less prejudice against African-Americans on the prejudice-thermometer measure than did males. (This is the same sex difference found by Hoxter and Lester, 1994.)

Table 1 about here.

For the Modern Racism Scale (MRS), SDO and intergroup contact were again significant predictors; there was not a significant effect of sex. See the last two columns of Table 1. Again replicating past findings, those higher in SDO and those with less intergroup contact showed more prejudice. Thus, for both measures of prejudice, then, SDO and intergroup contact were significant causes of prejudice.

Figure 1 and 2 here

Mediation by emotions. Next, we added the two emotion measures as mediators,

yielding the model shown in Figure 1 and Figure 2. For the prejudice-thermometer measure, note first that positive and negative emotions both have powerful effects ($p < .001$) on overall prejudice (see Figure 1). This means that any variables that cause emotions toward the target group will in turn influence prejudice. Sex also has an effect, with females showing less prejudice than males against African-Americans. In addition, SDO and intergroup contact, which had significant total effects (shown in Table 1), have those effects reduced to nonsignificance when the emotion mediators are added into the model.

Sobel tests on the mediational paths were performed using the web-based calculator at http://quantrm2.psy.ohio-state.edu/kris/sobel/sobel.htm. For the prejudice-thermometer dependent variable, the effect of SDO through negative emotions is significant (Sobel test = 2.21, $p < .03$). In addition, the effect of intergroup contact mediated through both negative emotions (Sobel test = 1.76, $p < .08$) and positive emotions (Sobel test = -1.73, $p < .08$) are near significant.

The effect of sex on the prejudice-thermometer measure is essentially all direct (unmediated). We are reluctant to attach much conceptual importance to this sex effect, for two reasons. First, it did not appear for the prejudice-MRS measure (analyses to be described momentarily). Second, across the heterogenous list of 18 groups for which we obtained feeling thermometer ratings (e.g., feminists, labor unions, big business, Republicans, Democrats), women gave ratings that averaged about 10 points more positive than men. Thus, the difference of around that same size for African-Americans appears to reflect a general tendency for women to rate all groups more positively, rather than a specific effect on prejudice regarding this group.

For the prejudice-MRS measure, just as for prejudice-thermometer, positive and negative emotions again had powerful effects (see Figure 2). Similarly to the prejudice-thermometer measure, SDO and intergroup contact, which had significant total effects (shown in Table 1), have those effects reduced when the emotion mediators are added into the model. The effect of SDO mediated through negative emotions is significant (Sobel test = 2.17, $p < .03$). In addition, the effect of intergroup contact mediated through negative emotions is near significant (Sobel test = 1.73, $p < .08$). Mediation of intergroup contact effects through positive emotions was marginally significant ($p < .10$).

Mediation by stereotype endorsement. Much previous research and theory gives an important role to stereotypes as mediators of prejudice. We repeated the regression analysis replacing the emotion measures as mediators with our measures of stereotype endorsement. This model is (from our theoretical viewpoint) misspecified because it omits the emotion variables – but it resembles those applied by researchers who have focused on the potential role of stereotypes and ignored possible contributions of emotion. In such a model stereotypes have significant effects on prejudice. For prejudice-thermometer, the coefficients for negative and positive stereotypes are 10.8 (stb = 0.30, $p < .001$) and -5.8 (stb = -0.15, $p < .07$) respectively. For prejudice-MRS, the coefficients for negative and positive stereotypes are .44 (stb= 0.24, $p < .01$) and -.29 (stb = -0.15, $p < .06$) respectively. In addition, stereotype endorsement, of course, is related to some of the same exogenous variables that cause prejudice in general. The endorsement of negative stereotypes is significantly affected by SDO ($b = .20$, stb = .32, $p < .001$), and the endorsement of positive stereotypes is significantly affected by contact ($b = .05$, stb = .19, $p < .05$). Thus, previous findings that appear to show stereotypes

playing an important role can be replicated with our sample and measures.

However, the important question is whether stereotypes or emotions play the key mediating role when they are entered simultaneously into the model. To answer this question, additional analyses used the model of Figure 1 with the positive and negative stereotype measures and also positive and negative emotions as potential mediators. The results can be summarized very briefly. The stereotype measures do not have significant effects on either measure of prejudice (all four p's > .25). Thus, they neither mediate any effects of the prior variables in the model, nor do they make their own independent contribution to explaining prejudice. In contrast, with the stereotype measures included the effects of the emotion variables all remain significant, and descriptively are little changed in magnitude from those shown in figures 1 and 2. We can conclude that when emotions are in the picture, stereotypes have little direct causal relevance to prejudice. Again, this conclusion holds equally for the thermometer and MRS measures of prejudice.

Discussion

Results of this study replicated past findings regarding the effects of both major independent variables, history of intergroup contact and general political predispositions, on prejudice. Most important, the results shed new light on the role of emotions in the overall process.

Intergroup contact had strong effects on both measures of prejudice. The effect was near significantly mediated by both positive and negative emotions. The marginal significance of the Sobel tests for mediation may be a function of low power due to our relatively small N, suggesting the desirability of replicating these relationships in a new

sample.

Our measure of general political leanings, SDO, had a strong effect on both measures of prejudice. The effect was significantly mediated by negative emotions. The effect of SDO replicates much past research (e.g., Levin & Sidanius, 1999; Pratto et al., 1994); the evidence that it is mediated by emotion is new. SDO seems to entail negative affective reactions to African-Americans (perhaps because they are perceived as threatening the existing system of inequality), as well as a trend toward lower positive emotions. The strong relations between SDO and emotions in our data has one important conceptual implication, suggesting that our emotion measures capture truly *intergroup* emotions – emotions directed at social groups viewed as political actors in society.

Besides mediating the effects of SDO and to a lesser extent intergroup context, we also found that emotions have powerful direct effects on prejudice. This means that anything else that causes intergroup emotions will also affect prejudice. This conclusion is true for the politically oriented MRS measure as well as for the more directly affective prejudice measure, the feeling thermometer.

In sharp contrast, we found that stereotypes play little or no role in the overall process. Once emotions are taken into account, effects of stereotypes on prejudice are minimal (never significant at all) in our data. However, our measure of stereotypes is specifically a measure of stereotype endorsement: the extent to which participants personally believed that the target group had particular characteristics. We cannot conclude that other dimensions related to stereotypes, such as stereotype knowledge, would similarly have little effect. In fact, many studies using priming techniques and other types of implicit measures have shown that merely knowing a common stereotype –

independent of personally endorsing it – can result in the activation of stereotypic attributes when encountering an outgroup member (e.g., Devine, 1989). Stereotype activation could in turn lead to prejudicial judgments.

Thus, it seemed desirable to conduct an additional study similar to Study 1, but using a measure of stereotype knowledge rather than endorsement. This will give a fuller picture of the possible role of stereotypes as an alternative mediator. Study 2, therefore, has the following goals. (1) Replicate the effects of contact and SDO on prejudice. (2) Replicate the demonstration that emotions mediate the relationships between contact and SDO on the one hand and prejudice on the other. (3) Explore the possible role of stereotype knowledge as an alternative mediator of the effects of contact and SDO on prejudice.

Study 2

Method

Study 2 included all the same measures as study1, with changes (to be described) in the emotion and stereotype measures. In addition, we did not ask subjects their gender, because this effect was largely uninteresting in the first sample. There were a total of 82 participants.

The emotion measures used in study 2 were more concise than those used in study 1. Because the factor analysis in study 1 did not differentiate the emotions participants experienced when thinking about African-Americans from the emotions they experienced when encountering African-Americans, we decided to combine these two measures into a single question. Specifically, episodic emotions were assessed with the following type of

question, "How often have you felt afraid when encountering or thinking about African-Americans". The emotions asked about were afraid, angry, disgusted, uneasy, hopeful, proud, sympathetic, resentful, respectful, grateful, admiring, and irritated. Responses were given on a 5-point scale from Never to Almost Always.

Instead of a measure of stereotype endorsement, as was used in study 1, study 2 included a measure of the participants' knowledge of African-American stereotypes. The stereotype measure consisted of 20 trait words. Specifically, we asked participants to "indicate whether each adjective is a part of the current stereotype about Black Americans" on a 10-point scale with anchors, "Not at all stereotypic of the group Black Americans" and "Very much stereotypic of the group Black Americans". To make clear that we wanted to measure the participants' knowledge and not their endorsement of the stereotype the following instructions were added: "We are not interested in whether you personally agree with these stereotypes. Rather, we are interested in whether people in our culture generally see these adjectives as fitting the stereotype about this group."

Results

Preliminary analyses. First, we factor analyzed the 24 emotion items. As in study1, a clear 2-factor solution was obtained. (The first several eigenvalues accounted for 63%, 34%, 9%, 4%, and 1% of the total variance.) The factors represented positive versus negative emotions. On this basis, we formed two simple unit-weighted scales representing negative emotions and positive emotions.

Similarly, we factor analyzed the 20 stereotype items. Again, two factors emerged, with the first several eigenvalues amounting to 50%, 27%, 9%, 6%, 5% of the total variance. These factors appeared to reflect largely the positive versus negative valence of

the trait words. For simplicity of interpretation and to parallel the positive and negative emotion measures, we formed unit-weighted scales representing positive and negative stereotypes.

Effects of Contact and SDO. The independent or exogenous variables for our analysis were SDO and intergroup contact. Our analysis of the effects of these background variables on the prejudice-thermometer measure (initially in an analysis with the emotion mediators omitted from the model) found significant effects of SDO and intergroup contact on prejudice (regression coefficients in second and third columns of Table 2). Replicating study 1 and previous research, those higher in SDO and those with less intergroup contact showed more prejudice.

Table 2 about here.

For the Modern Racism Scale (MRS), the same effects were obtained, although the effect of contact was only marginally significant ($p = 0.13$). See the last two columns of Table 2. For both measures of prejudice, then, SDO and intergroup contact were important causes of prejudice, although the effect of contact on prejudice was weaker for MRS than it was for the feeling thermometer.

Figure 3 and 4 here

Mediation by emotions. Next, we added the two emotion measures as mediators, yielding the models shown in Figure 3 and 4. For the prejudice-thermometer measure, as in study 1, positive and negative emotions both have powerful effects ($p < .01$) on overall prejudice (see figure 3). SDO and intergroup contact, which had significant total effects (shown in Table 2), have those effects reduced when the emotion mediators are added into the model. Sobel tests show two significant mediation relationships. The effect of

SDO through positive emotions is significant (Sobel test = 2.09, $p < .04$), as is the effect of SDO mediated through negative emotions (Sobel test = 2.81, $p < .01$). Mediation of intergroup contact through positive emotion was nearly significant ($p < .06$).

For the prejudice-MRS measure, just as for prejudice-thermometer, positive and negative emotions again had powerful effects (see figure 4). Intergroup contact, which had a marginally significant total effect (shown in Table 2), has that effect reduced to non-significance when the emotion mediators are added into the model. SDO, which had a significant total effect, has that effect reduced when emotion mediators are added into the model. The mediation of the effect of SDO through negative emotions is significant (Sobel test = 2.45, $p < .02$), as is the effect of intergroup contact mediated through positive emotions (Sobel test = -2.53, $p < .02$)., Mediation of SDO through positive emotion was nearly significant ($p < .06$).

Mediation by stereotype knowledge. Study 1 found that stereotype endorsement had little effect on prejudice once emotions were in the model. The results for the stereotype knowledge measure were very similar. First, knowledge of negative stereotypes was not significantly related to either SDO ($b = .33$, $stb = .12$, $p = 0.27$) or intergroup contact ($b = .03$, $stb = .04$, $p = 0.69$). Knowledge of positive stereotypes was not significantly related to intergroup contact ($b = -.03$, $stb = -.06$, $p = 0.57$), but was near-significantly related to SDO ($b = -.44$, $stb = -.19$, $p < .10$). Because neither SDO nor intergroup contact significantly affect stereotype knowledge, it is impossible for the latter variable to mediate the exogenous variables' effects on prejudice. Furthermore, when the measures of stereotype knowledge are entered into the models depicted in figures 3 and 4 occupying the same mediational space as the emotion variables, the effect of stereotype

knowledge on both measures of prejudice are nonsignificant (all four p's > .30). Thus, stereotype knowledge neither mediates any effects of the prior variables in the model, nor does it make any independent contribution to explaining prejudice. In contrast, when the stereotype knowledge measures are added the effects of the emotion variables all remain significant, and descriptively are little changed in magnitude from those shown in figures 3 and 4.

Discussion

As in study 1, we find that SDO had a strong effect on both measures of prejudice. These effects were significantly mediated by negative emotions. This pattern is consistent with the theoretical rationale proposed in the introduction: SDO leads to the perception of challenging outgroups (including African Americans) as a threat to the existing hierarchical dominance relations in society. Threat-induced negative emotions then lead people with SDO to respond with more prejudice toward those groups.

Intergroup contact also had effects on both measures of prejudice, although the effect was weaker for MRS that it was for the feeling thermometer. By evidence of the Sobel tests we see that the effect of contact on prejudice is largely mediated by positive emotions. This is consistent with the notion that contact can create the conditions for intergroup friendship, as outlined earlier.

Besides mediating the effects of SDO and intergroup context, we again found that emotions have powerful direct effects on prejudice. In sharp contrast, we again found that stereotypes play little or no role in the overall process. Once emotions are taken into account, effects of stereotype knowledge on prejudice are minimal (never significant at all) in our data.

General Discussion

Summarizing, these two studies suggest that emotions are key mediators of effects of past intergroup contact and of political predispositions (specifically SDO) on prejudice. This conclusion holds both for the more affectively toned prejudice-thermometer variable and for prejudice-MRS, which is closer to political and social attitudes. Our results thus differ to some extent from those of Dovidio et al. (2002), who found that cognitively-based intergroup attitudes (similar to stereotypes) were stronger predictors than affectively-based attitudes for political attitude dependent measures. However, in neither their meta-analysis of other studies nor their primary study was the difference in predictive power significant. The fact that we find emotions more powerful than stereotypic beliefs may be due to our items that ask directly about emotions, which may yield a purer measure than those analyzed by Dovidio et al. (2002), which include less-direct measures of "symbolic beliefs" and "white guilt."

Besides mediating effects of these background variables, both positive and negative emotions have powerful direct effects of their own on prejudice – above and beyond the variance accounted for by contact and political predispositions. In contrast, stereotype endorsement and stereotype knowledge appear to play little mediating role, once the effects of emotions are taken into account.

The context for these findings is the current intense research interest in the mediation of contact effects on prejudice (see Dovidio et al., 2003). As summarized earlier, there is empirical and conceptual support for the importance of both affective and cognitive mediators, although perhaps stronger support for affective variables. Pettigrew (1998), for example, noted that effects of contact on affective dependent variables are generally

stronger than effects on measures of stereotypes. And Wolsko et al. (2003) found that positive intergroup contact improved overall evaluations of the outgroup under a wide range of conditions, although contact changed stereotypes about the outgroup only under very limited circumstances. This pattern of results suggests that prejudice reduction (outside of those limited circumstances) is not mediated by stereotype change.

Of studies that have examined mediators of contact effects, few have measured emotions specifically, and even fewer have included direct comparisons of emotions and stereotypes as alternative mediational possibilities, as these studies do. Thus, our studies contribute to this literature by offering this direct comparison, which yields surprisingly unequivocal results: emotions affect prejudice when stereotypes are controlled, but stereotypes have no effect on prejudice when emotions are controlled.

With respect to our other major exogenous variable, SDO, there has been much less research on mediators. The contribution of our studies is to show that SDO effects on prejudice are consistently mediated by negative emotions. This supports the notion that people high in SDO perceive certain outgroups as threatening, leading to negative emotions such as fear, anger, or resentment, which in turn increase prejudiced attitudes.

Like all studies, these have limitations. Our results (like those of virtually all studies of intergroup contact and prejudice) rely on self-report measures. Although our results generally meet theoretical expectations and replicate past findings, the potential for biased and invalid self-reports is always worrisome. Future research might productively use indirect or implicit measures of prejudice and related constructs (e.g., Greenwald, McGhee, & Schwartz, 1998). As a way of assessing the potential impact of response biases, we included the Dunton and Fazio (1997) Motivation to Control Prejudice scale in

Study 1. This scale had a significant effect on prejudice-MRS (with, obviously, those higher in MCP appearing to be less prejudiced on this explicit measure). But it had no significant effect on prejudice-thermometer. More important, inclusion of MCP did not materially change the effects of the other variables in the model. And MCP did not interact with the emotion measures in influencing prejudice; thus, emotion had just as great an impact on explicit prejudice for those high in MCP as for those who are low. We conclude that motives to appear unprejudiced to oneself or to others (as assessed by the MCP scale) had a main effect on the MRS measure but did not otherwise distort the pattern of results we obtained. This finding offers some reassurance that potential response biases did not greatly limit our conclusions.

Another limitation is that this research is correlational in nature. Because of the nature of the hypotheses being tested, we believe that this is inevitable. That is, we are investigating effects on prejudice due to highly stable individual differences in SDO and people's real-life intergroup contact. Neither of these independent variables are easily manipulable in brief laboratory-based episodes. But the inherently correlational nature of this research means that there are ambiguities regarding causal flow. Most obviously, prejudice may cause intergroup contact rather than the reverse (for direct evidence on this point, see Dovidio et al., 2002). But Pettigrew and Tropp's (2000) large-scale meta-analysis of studies of contact and prejudice shows that situations of forced contact (e.g., on the job, in the military, in public housing) actually produce larger prejudice-reducing effects than do voluntary contact situations. This is the reverse of what one would expect if prejudice predominantly caused contact. Other studies using nonhierarchical statistical analyses including Pettigrew (1998), Powers and Ellison (1995), and Wagner et al..

(2003), find that both causal directions are effective, but that the larger effect is from contact to prejudice. Thus, we are confident that our model captures the primary direction of causation between prejudice and contact, but acknowledge that in the larger over-time context, multiple causal directions certainly operate.

How about the causal ordering between emotions and stereotypes? Our analytic model uses the most conservative specification, placing emotions and stereotypes at the same position in the model rather than assuming from the outset that either stereotypes or emotions are causally prior. This allowed us to assess their respective effects on prejudice while controlling for each other (and for the exogenous variables). The results show that with emotion held constant, different levels of stereotype endorsement or knowledge do not lead to different levels of prejudice. In contrast, with stereotype knowledge or endorsement held constant, people with different levels of emotions directed at African Americans do vary in the amount of prejudice they express.

What are we to make of this pattern? It would be incorrect to say that it shows stereotypes have no role. For example, suppose there is a consensual stereotype of African Americans, which virtually everyone both knows and endorses at or above some effective threshold level (so that variations in the enthusiasm of their endorsement make little difference). The relevant variation, then, might be in whether the content of that commonly held stereotype is perceived as constituting a threat to the perceiver's own group – that is, in whether the stereotype leads to appraisals that generate emotional responses. The very same group characteristics (which everyone might agree the group possesses) could be appraised as threatening by some perceivers and unthreatening by others, and this difference would be tapped by measures of group-based emotion. The

group-based emotional reactions to perceived threat, in turn, would be the immediate driving force behind prejudice. We suspect that this picture or some reasonable variant of it is actually close to the truth, with respect to White American's views of African Americans and perhaps in other intergroup settings as well. This picture allows for both of these seemingly incompatible statements to be simultaneously valid:

(a) Stereotypes do play a causal role in prejudice, as socially shared perceptions of a group's characteristics that are potential bases for appraisals of threat.

(b) Variations in stereotype knowledge or endorsement do not covary with differences in prejudice; in contrast, variations in group emotion do, because they tap the appraisal of threat (based on that shared stereotype) that is the actual engine driving prejudice.

From this perspective, research on group stereotypes, the traits or other attributes believed to characterize social groups, is valuable in portraying the basic group differences that are consensually perceived in a given social context. And research on intergroup emotions carries us one step farther, furnishing more direct assessments of whether the perceivers view those stereotypic attributes as threatening and therefore as fuel for group prejudice. Both aspects are necessary to gain a complete picture of the thoughts, feelings, and ultimately the behaviors that arise in intergroup situations.

Despite their limitations, the current studies illustrate again the empirical and theoretical payoff that can be obtained by considering the role of intergroup emotions in prejudice and other aspects of intergroup relations, adding to our previous work (Devos, Silver, Mackie, & Smith, 2002; Mackie, Devos, & Smith, 2000; Mackie, Silver, & Smith, 2002). We demonstrate that emotions have powerful effects on two standard measures of

prejudice, above and beyond the variance explained by a series of background variables (see Figures 1 and 2). Moreover, we show that effects of both intergroup contact and general political orientations (such as Social Dominance Orientation) on prejudice are significantly mediated by perceivers' emotional reactions to outgroups. We hope that these and other findings will spur other researchers to help reverse the relative neglect of emotion variables in the study of prejudice and intergroup relations.

Figure 1. Full mediational model for thermometer-prejudice dependent variable for study1 (N = 110).

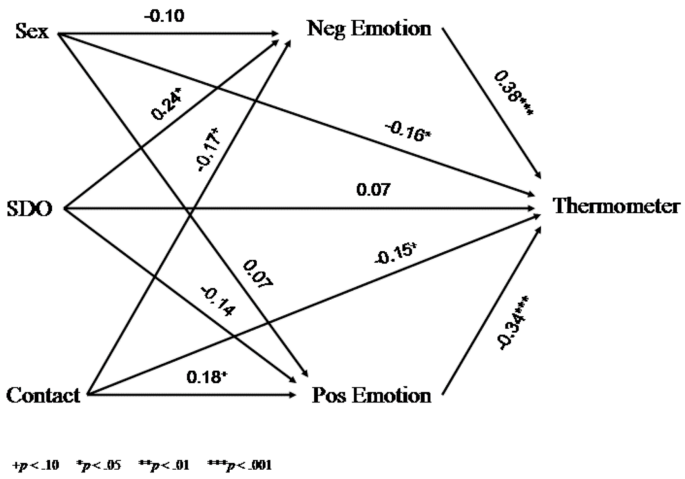
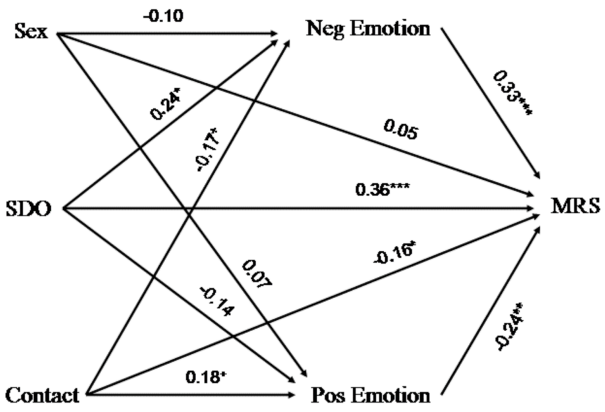
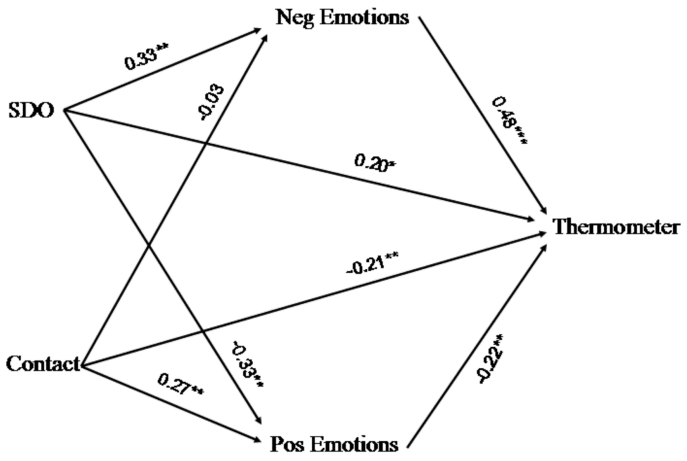


Figure 2. Full mediational model for MRS-prejudice dependent variable for study 1 (N = 110).



+$p < .10$ *$p < .05$ **$p < .01$ ***$p < .001$

Figure 3. Full mediational model for thermometer-prejudice dependent variable for study2 (N = 82).



+$p < .10$ *$p < .05$ **$p < .01$ ***$p < .001$

Figure 4. Full mediational model for thermometer-prejudice dependent variable for study2 (N = 82).

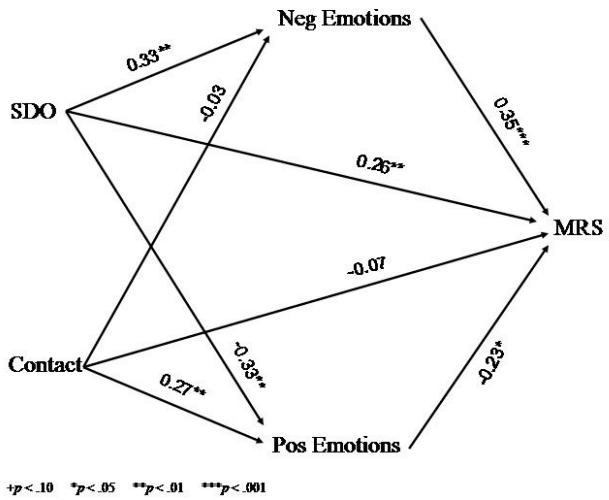


Table 1. Total effects of background variables on two measures of prejudice for study 1

	Prejudice-Thermometer		Prejudice-MRS	
Independent Variable	Unstandardized b	Standardized b	Unstandardized b	Standardized b
Sex	-11.59**	-0.23	-0.00	-0.00
SDO	4.75*	0.21	0.54***	0.48
Contact	-2.94**	-0.27	-0.14**	-0.26

$+p < .10$ $*p < .05$ $**p < .01$ $***p < .001$

Table 2. Total effects of background variables on two measures of prejudice for study 2

	Prejudice-Thermometer		Prejudice-MRS	
Independent Variable	Unstandardized b	Standardized b	Unstandardized b	Standardized b
SDO	1.57***	0.44	0.91***	0.45
Contact	-0.22**	-0.29	-0.06	-0.14

$+p < .10$ $*p < .05$ $**p < .01$ $***p < .001$

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