

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

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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, above and beyond measures of stereotypes (stereotype endorsement in Study 1 and stereotype knowledge in Study 2) that were entered as alternative potential mediators. Stereotype endorsement also plays a significant mediational role in one case. 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.

KEYWORDS contact, intergroup emotion, prejudice, social dominance, stereotypes

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 found (Allport, 1954; Amir, 1976; Dovidio, Gaertner, & Kawakami, 2003; Levin et al., 2003; Pettigrew, 1986; Stephan & Stephan, 2000; Wagner, van Dick, Pettigrew, & Christ, 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

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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 article 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 more narrowly on 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 inter-

group 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, and indeed recent research points to the important role of these factors in prejudice and intergroup behavior. For example, for some outgroups (such as gay men), emotional reactions have been found to be the strongest predictor of overall evaluations, stronger even than stereotypes (Bodenhausen & Moreno, 2000; Haddock et al., 1993). It might be argued that anti-gay prejudice is especially emotional in character, but in fact across a range of outgroups including racial/ethnic groups, emotions as well as stereotypes are related to evaluations of the group (e.g. Stangor et al., 1991; Haddock et al., 1994; Maio et al., 1994).

One theory that explicitly makes the role of emotions central in prejudice is Intergroup Emotion Theory (Mackie, Devos, & Smith, 2000; E. R. Smith, 1993). 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 ingroup become salient in this way, mental representations of self and ingroup become inextricably linked (Coats, Smith, Claypool, & Banner, 2000; E. R. Smith, Coats, & Walling, 1999; E. R. Smith & Henry, 1996). 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 make a unique contribution to prejudice and intergroup relations. Intergroup Emotions Theory has been supported by several types of evidence to date (Devos, Silver, Mackie, & Smith, 2002; Mackie et al., 2000; Mackie, Silver, & Smith, 2002). In this paper, we examine the direct effects of emotions on prejudice, which we define (following current usage in the field) as the overall evaluation of the outgroup, and measure with a feeling thermometer and the Modern Racism Scale. We also investigate the potential role of emotions in mediating the effects on prejudice 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 intergroup anxiety. Theories stressing this or related ideas (Gaertner & Dovidio, 1986; Stephan & Stephan, 1985) 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) found 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, Mendes, Hunter, Lickel, & Kowai-Bell (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. And Voci and Hewstone (2003) found in an Italian study that contact with immigrants reduced prejudice, an effect that was partially mediated by reductions in intergroup anxiety. 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. Contact often creates the condition for the emergence of 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 positive emotions toward the outgroup (both sympathy and admiration).

Political predispositions

Broad political predispositions, such as Social Dominance Orientation (SDO) (Pratto et al., 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; Pratto et al., 1994; Sidanius,

Pratto, & Bobo, 1994; Whitley, 1999; Whitley & Lee, 2000).

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 to predict prejudice. 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. 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. In the current American political situation, it is virtually universally perceived that African-Americans as a group are challenging their status within the overall societal hierarchy, such as by working against pervasive discrimination and socioeconomic disadvantage. Perceiving 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 highly intuitive 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 (Johnston & Hewstone, 1992; Rothbart & John, 1985, 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 article 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 potential mediators in a similar way.

Study 1

Method

White college students ($N = 213$) completed questionnaires intended to assess their

thoughts and feelings about African-Americans. This N represents data collections with $N = 110$ and $N = 103$ from the same population in two semesters. (In each case, the participants also completed additional response time measures, which were included in the study for exploratory purposes, but which did not produce strong or interpretable results.) 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 assessed 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 assessed 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 (Aron et al., 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 ($\alpha = .61$).

We wished to tap episodic emotions felt toward African-Americans; these could include either emotions experienced while interacting with or encountering African-Americans, or emotions experienced while thinking about African-Americans. Specifically, for our first subsample ($N = 110$) 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 12 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. After preliminary analyses (to be described below) showed that the distinction between thought- and encounter-related emotions did not hold up in participants' responses, our second subsample ($N = 103$) included a simplified measure with only 12 items tapping the same emotions, worded as 'How often have you felt afraid when encountering or thinking about African-Americans?'

Participants also completed a feeling thermometer as an index of prejudice. Participants reported how 'warm' or 'cold' they felt toward 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 $r = .42$, 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 SDO (Pratto et al., 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 (1995). Examples are *lazy*, *ignorant*, *musical*, *aggressive*, *athletic*, *criminal*. 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 We initially factor analyzed the 24 emotion items in the first subsample with $N = 110$. As is typical when positive and negative emotion self-reports are analyzed, a clear two-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 reactivated upon later encounters or when later thinking about the group. For this reason we simplified the emotion measure for the second subsample, as described above.

To allow combining the two subsamples for analysis, we averaged the thought-related and encounter-related responses for each of the 12 emotions in the first subsample. We then factor-analyzed the 12 emotion ratings in the entire sample ($N = 213$). Again, two clear factors were obtained (eigenvalues 33%, 29%, 7%, 7%, 5%) corresponding to positive and negative emotions. On this basis, we formed two simple unit-weighted scales representing negative emotions and positive emotions. These scales are essentially uncorrelated ($r = -.05$, *ns*).

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 largely reflect 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 with intercorrelation $r = .08$, *ns*. (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 and stereotype mediators omitted from the model) found significant effects of sex, SDO, and intergroup contact on prejudice (regression coefficients in second column 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 & Lester, 1994.)

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 column of Table 1. Again replicating past findings, those higher in SDO and those with less intergroup contact showed more

Table 1. Total effects of background variables on both measures of prejudice for Study 1

	Thermometer	MRS
Sex	-.19**	-.03
SDO	.20**	.54***
Contact	-.34***	-.13*

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

Note: Betas displayed are standardized.

prejudice. Thus, for both measures of prejudice, SDO and intergroup contact were significant causes of prejudice.

Mediation Next, we added the two emotion and the two stereotype measures as mediators, yielding the model shown in Figure 1. For the prejudice-thermometer measure, note first that positive and negative emotions both have powerful effects (*p* < .001) on prejudice (see Table 2). This means that any variables that affect emotions toward the target group will in turn influence prejudice. Negative (not positive) stereotypes also have an effect, although descriptively it is smaller than the effect of either emotion index. Sex also has an effect, with females showing less prejudice than males against African-Americans. In addition, SDO, which had a significant total effect (shown in Table 1), has that effect reduced to nonsignificance when the mediators are added into the model. Contact retains a significant direct effect on prejudice.

Sobel tests on the mediational paths were performed using the web-based calculator at <http://quantrm2.psy.ohio-state.edu/kris/sobel/>

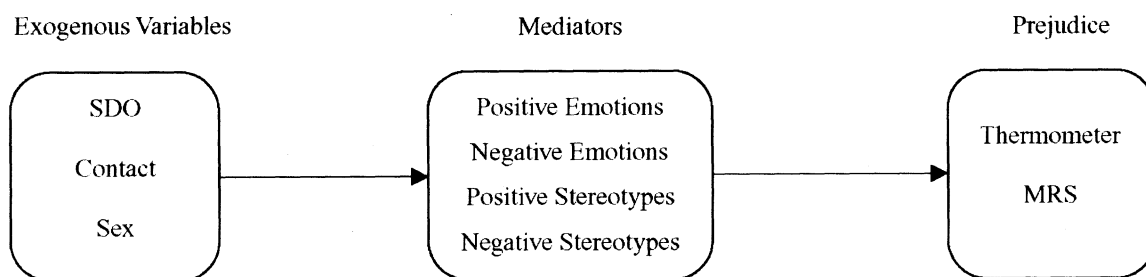


Figure 1. Full mediational model for Study 1.

Table 2. Standard betas in the full model for Study 1 (including emotions and stereotype endorsement as mediators)

	Dependent variables					
	Thermometer	MRS	Neg emotions	Pos emotions	Neg stereotypes	Pos stereotypes
SDO	.01	.38***	.20**	-.25**	.36***	-.12*
Contact	-.22***	-.04	-.14*	.23**	.00	.17*
Sex	-.13*	.01	-.04	.11	-.07	-.01
Neg emotions	.29***	.24***	-	-	-	-
Pos emotions	-.27***	-.16**	-	-	-	-
Neg stereotypes	.17*	.14*	-	-	-	-
Pos stereotypes	-.04	-.10*	-	-	-	-

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

Note: Betas displayed are standardized.

sobel.htm. The results are shown in Table 3. Mediation of the effect of SDO through negative emotions, positive emotions, and negative stereotypes were all significant. Mediation of the contact effect through positive emotions was significant, and negative emotions marginally so (*p* < .06).

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 heterogeneous 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 (both *p* < .01, see Table 2). Negative stereotypes had a significant although weaker effect. 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 mediators are added into the model. In the case of contact the effect is reduced to nonsignificance. The Sobel tests in Table 3 show exactly the same set of significant mediation relationships as for the thermometer measure of prejudice.

Table 3. Sobel tests for mediational paths, Studies 1 and 2

	Study 1		Study 2	
	Thermometer	MRS	Thermometer	MRS
SDO effect through neg emotions	2.38*	2.26*	2.81**	2.45*
SDO effect through pos emotions	2.80**	2.19*	2.09*	1.95*
SDO effect through neg stereotypes	2.29*	2.03*	0.40	0.04
Contact effect through neg emotions	1.90†	1.84†	0.33	0.33
Contact effect through pos emotions	2.80**	1.97*	1.93*	2.53*
Contact effect through neg stereotypes	0.00	0.00	0.29	0.04

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

Note: Mediation through positive stereotypes is never significant.

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 as mediators in the overall process.

Intergroup contact had strong effects on both measures of prejudice. The effect was significantly mediated by positive emotions, and near-significantly by negative emotions. This study therefore joins other research (e.g. Voci & Hewstone, 2003) in supporting the idea that negative emotions such as anxiety and irritation can be reduced by intergroup contact, with beneficial effects on prejudice. It also suggests, as outlined in the introduction, that contact increases positive emotions related to warmth and friendship, also reducing prejudice. Stereotypes played no role in mediating the contact effect.

Our measure of general political leanings, SDO, had a strong effect on both measures of prejudice. The effect had three significant mediators: negative emotions, positive emotions, and negative stereotypes. The effect of SDO on prejudice replicates much past research (e.g. Levin & Sidanius, 1999; Pratto et al., 1994); the evidence regarding mediation 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 lower positive emotions toward that group. 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. SDO also leads to endorsement of more negative stereotypes of African-Americans, perhaps as justification for their disadvantaged position in American society. Those negative stereotypes in turn lead to higher levels of prejudice.

Besides mediating the effects of SDO and intergroup context, we also found that the two emotion indices have powerful direct effects on the prejudice measures, with $p < .01$ in one case

and $p < .001$ in three. This conclusion is true for the politically oriented MRS measure as well as for the more directly affective prejudice measure, the feeling thermometer. This finding means that anything else that causes intergroup emotions will also affect prejudice. And crucially, these effects are found over and above the effects of stereotype endorsement, which are statistically controlled in the regression models depicted in Figure 1. This finding supports what is perhaps the most central prediction from Intergroup Emotions Theory, that emotions act as mediators and have independent predictive power above and beyond stereotypes.

In contrast, with emotions statistically controlled in the analysis, stereotypes had weaker effects ($p < .05$ for negative stereotypes, no significant effects for positive stereotypes). Negative stereotypes do appear to play a role in mediating the effect of SDO on prejudice. Thus, in this study both emotional and cognitive mediators make independent contributions to explaining prejudice.

How general can this conclusion be? 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. But other dimensions related to stereotypes, such as stereotype knowledge, might have different effects. 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 automatically produce negative stereotypic judgments about outgroup members, over time creating prejudice against the group.

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, with an alternative measure of stereotypes, stereotype knowledge, controlled. (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 Study 1, 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 was 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 (as in the second subsample of Study 1). 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 same 12 emotions as in Study 1 were measured. 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 12 emotion items. As in Study 1, a clear two-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, which in this study correlated $r = -.27, p < .01$.

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 largely reflect 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. Their correlation was $r = -.14, ns$.

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 column of Table 4). Replicating Study 1 and previous

Table 4. Total effects of background variables on two measures of prejudice for Study 2

	Thermometer	MRS
SDO	.44***	.45***
Contact	-.29**	-.14

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

Note: Betas displayed are standardized.

research, those higher in SDO and those with less intergroup contact showed more prejudice.

For the MRS, the same effects were obtained, although the effect of contact was nonsignificant ($p = .15$) with this relatively small sample. See the last column of Table 4. 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.

Mediation Analyses next entered the two emotion measures and the two stereotype-knowledge measures as mediators into the model, yielding the same model as in Figure 1 (but without participant sex). The results showed that stereotype knowledge had essentially no effects. First, the effect of stereotype knowledge on both measures of prejudice proved nonsignificant (all four $ps > .30$). Second, knowledge of negative stereotypes was not significantly related to either independent variable, SDO ($\beta = .33$, standardized $\beta = .12$, $p = 0.27$) or intergroup contact ($\beta = .03$, standardized $\beta = .04$, $p = .69$). Knowledge of positive stereotypes was not significantly related to intergroup contact ($\beta = -.03$, standardized $\beta = -.06$, $p = .57$), but was near-significantly related to SDO ($\beta = -.44$, standardized $\beta = -.19$, $p < .10$). With none of the individual paths involved in potential mediational relationships being significant, it is clear that stereotype

knowledge neither significantly mediates any effects of the prior variables in the model, nor does it make any independent contribution to explaining prejudice.

Turning to the emotion measures, for the prejudice-thermometer measure, as in Study 1, positive and negative emotions both have powerful effects ($p < .01$ and $p < .001$ respectively) on prejudice (see Table 5). SDO and intergroup contact, which had significant total effects (shown in Table 4), have those effects reduced when the emotion mediators are added into the model. Sobel tests show two significant mediation relationships, shown in Table 3. The effect of SDO through positive and negative emotions is significant. In addition, the effect of intergroup contact through positive emotion is nearly significant ($p < .06$).

For the prejudice-MRS measure, just as for prejudice-thermometer, positive and negative emotions again had significant effects (see Table 5). Intergroup contact, which had a marginally significant total effect (shown in Table 4), has that effect reduced to nonsignificance 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 and through positive emotion nearly significant ($p < .06$). There is also significant mediation of the effect of intergroup contact through positive emotions.

Table 5. Standard betas in the full model for Study 2 (including emotions and stereotype knowledge as mediators)

	Dependent variables					
	Thermometer	MRS	Neg emotions	Pos emotions	Neg stereotypes	Pos stereotypes
SDO	.20*	.26**	.33**	-.33**	.12	-.19 ⁺
Contact	-.21**	-.07	-.03	.27**	.04	-.06
Neg emotions	.47***	.34***	-	-	-	-
Pos emotions	-.23**	-.23*	-	-	-	-
Neg stereotypes	-.03	-.004	-	-	-	-
Pos stereotypes	-.08	-.03	-	-	-	-

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

Note: Betas displayed are standardized.

Discussion

As in Study 1, we find that SDO had a strong effect on both measures of prejudice. These effects were significantly mediated by emotions, more strongly by negative than by positive 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 than it was for the feeling thermometer. 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 found that stereotype knowledge plays little or no role in the overall process. Once emotions are taken into account, effects of stereotype knowledge on prejudice are minimal (never significant) in our data.

General discussion

First, let us summarize the empirical results, emphasizing those that are robust and replicable across two measures of prejudice (thermometer and MRS) and two separate studies, for a total of four tests.

1. Contact reduces prejudice (significant in three cases of the four).
2. The contact effect is mediated by positive emotions (four cases with one being marginal). There is more tentative evidence suggesting mediation by negative emotions (two marginal cases). There is no evidence (0 cases) for mediation of contact effects through stereotype knowledge or stereotype endorsement.
3. SDO increases prejudice (four cases).
4. The SDO effect is mediated by positive and negative emotions (four cases each with positive emotions marginal in one of the four) and also by negative stereotype endorsement in Study 1 (two cases).
5. Stereotype endorsement (Study 1) generally has stronger relations to prejudice than does stereotype knowledge (Study 2).

Our findings on the mediation of contact effects on prejudice speak to the currently active research interest in the issue (see Dovidio et al., 2003). Our results fit with the existing empirical and conceptual support, summarized earlier, for the priority of affective over cognitive mediators. Pettigrew (1998), for example, noted that effects of contact on affective dependent variables are generally stronger than effects on measures of stereotypes. And Wolsko, Park, Judd, and Bachelor (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 directly measured a wide range of group emotions (although specific measures of intergroup anxiety have been included in several studies, such as Voci & Hewstone, 2003). We know of no studies that have included direct comparisons of emotions and stereotypes as alternative mediational possibilities, as our studies do. Thus, our studies contribute to this literature by offering this direct comparison, which yields unequivocal results: emotions mediate contact effects on prejudice even when stereotypes are controlled; stereotype endorsement and stereotype knowledge do not mediate contact effects 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 both positive and negative emotions, as well as by endorsement of negative stereotypes. These results support 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. Those high in SDO also appear to experience fewer positive emotions such as sympathy or pride with regard to outgroups. They also endorse negative stereotypes that potentially justify the challenging group's low status in society. These multiple mediators all contribute to explaining the strong observed relationship overall between SDO and prejudice.

Overall, these two studies support the key prediction of Intergroup Emotions Theory. Emotions are key mediators of effects of past intergroup contact and of political predispositions (specifically SDO) on prejudice, above and beyond any mediational effect of stereotypes. Besides mediating effects of these background variables, both positive and negative emotions have powerful direct effects of their own on prejudice (with $p < .01$ or less in seven of eight cases counting positive and negative emotions). The effects of emotions were found both for the more affectively toned prejudice-thermometer variable and for prejudice-MRS, which is more a measure of political and social attitudes. Our results thus differ to some extent from those of Dovidio, Esses, Beach, & Gaertner (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 the fact that our items 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'.

Like all studies, these have limitations. First, 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 (MCP) scale in a subsample ($N = 110$) of 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 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 issue is that the emotion items appeared in the questionnaire before the stereotype knowledge or endorsement items. Perhaps participants became less attentive over time and ended up giving more error-prone responses on the later items, reducing their reliability. While this suggestion should be tested in future research, the considerably greater number of stereotype items (30) compared to emotion items (12) should counteract any decrease in reliability from this source.

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 and friendship. 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.

Other potential causal-ordering issues are less problematic for these studies. Our specification that emotions and stereotypes causally precede prejudice is the most common assumption in this literature, and in the case of emotions is strengthened by the fact that the emotion items have a time reference of the recent past ('How often have you felt afraid when thinking about...'), whereas the prejudice items ask about current attitudes. In addition, although various assumptions might be made about the causal ordering between intergroup contact and SDO, this question is completely irrelevant to our conclusions. That is, we conservatively specify simply that those exogenous variables in our model are correlated, and no matter how that correlation comes about (one of the variables causing the other, or both being affected by a common cause) our conclusions regarding the mediation of their downstream effects are unaffected.

How about the causal ordering between emotions and stereotypes? Our model again 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 (a) with emotion held constant, endorsement of negative stereotypes regarding African-Americans does affect prejudice in Study 1. Also, (b) with stereotype knowledge or endorsement held constant, both positive and negative emotions directed at African-Americans affect prejudice across both studies.

What are the implications of the fact that emotions have an effect even with stereotype knowledge or endorsement held constant? We propose that there is a consensual stereotype of African-Americans, which virtually everyone in the US knows. Those who endorse the negative components of the stereotype more strongly are also more prejudiced, because of the negative evaluative implications of their stereotypic beliefs. However, our studies show that even among people who endorse the stereotype to an equal extent, there is much additional variation in emotional reactions to African-Americans, which also contributes to prejudice. We propose that this effect is due to differences in the extent to which people perceive the commonly held stereotype 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 perceived group characteristics could be appraised as threatening by some perceivers and unthreatening by others, a difference that would be tapped by measures of group-based emotion. The group-based emotional reactions to perceived threat, in turn, have a strong impact on prejudice. To summarize, we believe that:

- (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; hence the degree of stereotype endorsement predicts levels of prejudice.
- (b) Even when differences in stereotype

knowledge or endorsement are statistically controlled, variation in group emotion predicts prejudice, because it taps the appraisal of threat (based on the shared stereotype) that is one powerful 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 group characteristics 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 et al., 2002; Mackie et al., 2000, 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 and by stereotypes (see Tables 2 and 5). Moreover, we show that effects of both intergroup contact and general political orientations (such as SDO) on prejudice are significantly mediated by perceivers' emotional reactions to outgroups (Table 3). 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.

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References

- Adorno, T. W., Frenkel-Brunswick, E., Levinson, D. J., & Sanford, R. N. (1950). *The authoritarian personality*. New York: Harper.
- Allport, G. W. (1954). *The nature of prejudice*. Boston: Addison-Wesley.
- Altemeyer, B. (1988). *Enemies of freedom: Understanding right-wing authoritarianism*. San Francisco: Jossey-Bass.
- Altemeyer, B. (1998). The other 'authoritarian personality'. *Advances in Experimental Social Psychology*, 30, 47-92.
- Amir, Y. (1976). The role of intergroup contact in change of prejudice and ethnic relations. In P. A. Katz (Ed.), *Towards the elimination of racism* (pp. 245-308). New York: Pergamon.
- Aron, A., Aron, E. N., Tudor, M., & Nelson, G. (1991). Close relationships as including other in self. *Journal of Personality and Social Psychology*, 60, 241-253.
- Blascovich, J., Mendes, W. B., Hunter, S. B., Lickel, B., & Kowai-Bell, N. (2001). Perceiver threat in social interactions with stigmatized others. *Journal of Personality and Social Psychology*, 80, 253-267.
- Bodenhausen, G. V. (1993). Emotions, arousal, and stereotypic judgments: A heuristic model of affect and stereotyping. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 13-37). San Diego, CA: Academic Press.
- Bodenhausen, G. V., & Moreno, K. N. (2000). How do I feel about them? The role of affective reactions in intergroup perception. In H. Bless & J. P. Forgas (Eds.), *The message within: The role of subjective experience in social cognition and behavior* (pp. 283-303). London: Psychology Press.
- Coats, S., Smith, E. R., Claypool, H. M., & Banner, M. J. (2000). Overlapping mental representations of self and in-group: Reaction time evidence and its relationship with explicit measures of group identification. *Journal of Experimental Social Psychology*, 36, 304-315.
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, 56, 5-18.
- Devine, P. G., & Elliot, A. J. (1995). Are racial stereotypes really fading? The Princeton trilogy revisited. *Personality and Social Psychology Bulletin*, 21, 1139-1150.
- Devos, T., Silver, L. A., Mackie, D. M., & Smith, E. R. (2002). Experiencing intergroup emotions. In D. M. Mackie & E. R. Smith (Eds.), *Beyond prejudice: From outgroup hostility to intergroup emotions* (pp. 111-134). Philadelphia: Psychology Press.

- Dovidio, J. F., Esses, V. M., Beach, K. R., & Gaertner, S. L. (2002). The role of affect in determining intergroup behavior: The case of willingness to engage in intergroup contact. In D. M. Mackie & E. R. Smith (Eds.), *Beyond prejudice: From outgroup hostility to intergroup emotions* (pp. 153–171). Philadelphia: Psychology Press.
- Dovidio, J. F., Gaertner, S. L., & Kawakami, K. (2003). Intergroup contact: The past, present, and the future. *Group Processes & Intergroup Relations*, 6, 5–21.
- Dunton, B. C., & Fazio, R. H. (1997). An individual difference measure of motivation to control prejudiced reactions. *Personality and Social Psychology Bulletin*, 23, 316–326.
- Frijda, N. H. (1986). *The emotions*. Cambridge, UK: Cambridge University Press.
- Gaertner, S. L., & Dovidio, J. F. (1986). The aversive form of racism. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 61–89). San Diego, CA: Academic Press.
- Greenwald, A. G., McChee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, 74, 1464–1480.
- Haddock, G., Zanna, M. P., & Esses, V. M. (1993). Assessing the structure of prejudicial attitudes: The case of attitudes toward homosexuals. *Journal of Personality & Social Psychology*, 65, 1105–1118.
- Haddock, G., Zanna, M. P., & Esses, V. M. (1994). Mood and the expression of intergroup attitudes: The moderating role of affect intensity. *European Journal of Social Psychology*, 24, 189–205.
- Hoxter, A. L., & Lester, D. (1994). Gender differences in prejudice. *Perceptual and Motor Skills*, 79, 1666.
- Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived out-group variability, and out-group attitude: An integrative model. *Personality and Social Psychology Bulletin*, 19, 700–710.
- Johnston, L., & Hewstone, M. (1992). Cognitive models of stereotype change: III. Subtyping and the perceived typicality of disconfirming group members. *Journal of Experimental Social Psychology*, 28, 360–386.
- Levin, S., & Sidanius, J. (1999). Social dominance and social identity in the United States and Israel: Ingroup favoritism or outgroup derogation? *Political Psychology*, 20, 99–126.
- Levin, S., van Laar, C., & Sidanius, J. (2003). The effects of ingroup and outgroup friendship on ethnic attitudes in college: A longitudinal study. *Group Processes & Intergroup Relations*, 6, 76–92.
- Mackie, D. M., Devos, T., & Smith, E. R. (2000). Intergroup emotions: Explaining offensive action tendencies in an intergroup context. *Journal of Personality and Social Psychology*, 79, 602–616.
- Mackie, D. M., Silver, L. A., & Smith, E. R. (2002). *The nature of intergroup emotions*. Unpublished manuscript, University of California, Santa Barbara.
- Mackie, D. M., & Smith, E. R. (1998). Intergroup relations: Insights from a theoretically integrative approach. *Psychological Review*, 105, 499–529.
- McConahay, J. B. (1986). Modern racism, ambivalence, and the modern racism scale. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 91–125). San Diego, CA: Academic Press.
- Maio, G. R., Esses, V. M., & Bell, D. W. (1994). The formation of attitudes toward new immigrant groups. *Journal of Applied Social Psychology*, 24, 1762–1776.
- Pettigrew, T. F. (1986). The intergroup contact hypothesis reconsidered. In M. Hewstone & R. Brown (Eds.), *Contact and conflict in intergroup encounters. Social psychology and society* (pp. 169–195). Cambridge, MA: Basil Blackwell.
- Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality and Social Psychology Bulletin*, 23, 173–185.
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65–85.
- Pettigrew, T. F., & Tropp, L. R. (2000). Does intergroup contact reduce prejudice: Recent meta-analytic findings. In S. Oskamp (Ed.), *Reducing prejudice and discrimination. The Claremont Symposium on Applied Social Psychology* (pp. 93–114). Mahwah, NJ: Erlbaum.
- Powers, D. A., & Ellison, C. G. (1995). Interracial contact and black racial attitudes: The contact hypothesis and selectivity bias. *Social Forces*, 74, 205–226.
- Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67, 741–763.
- Roseman, I. J. (1984). Cognitive determinants of emotion: A structural theory. *Review of Personality and Social Psychology*, 5, 11–36.
- Rothbart, M., & John, O. P. (1985). Social categorization and behavioral episodes: A cognitive analysis of the effects of intergroup contact. *Journal of Social Issues*, 41, 81–104.
- Scherer, K. R. (1988). Criteria for emotion-antecedent appraisal: A review. In V. Hamilton,

- D. Bower & H. Gordon (Eds.), *Cognitive perspectives on emotion and motivation. NATO ASI Series D: Behavioural and Social Sciences* (Vol. 44, pp. 89–126). Dordrecht, Netherlands: Kluwer Academic.
- Sidanius, J., Pratto, F., & Bobo, L. (1994). Social dominance orientation and the political psychology of gender: A case of invariance? *Journal of Personality and Social Psychology*, 67, 998–1011.
- Smith, C. A., & Ellsworth, P. C. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality and Social Psychology*, 48, 813–838.
- Smith, E. R. (1993). Social identity and social emotions: Toward new conceptualizations of prejudice. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 297–315). San Diego, CA: Academic Press.
- Smith, E. R., Coats, S., & Walling, D. (1999). Overlapping mental representations of self, in-group, and partner: Further response time evidence and a connectionist model. *Personality and Social Psychology Bulletin*, 25, 873–882.
- Smith, E. R., & Henry, S. (1996). An in-group becomes part of the self: Response time evidence. *Personality and Social Psychology Bulletin*, 22, 635–642.
- Stangor, C., Sullivan, L. A., & Ford, T. E. (1991). Affective and cognitive determinants of prejudice. *Social Cognition*, 9, 359–380.
- Stephan, W. G., Diaz-Loving, R., & Duran, A. (2000). Integrated threat theory and intercultural attitudes: Mexico and the United States. *Journal of Cross-Cultural Psychology*, 31, 240–249.
- Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues*, 41, 157–175.
- Stephan, W. G., & Stephan, C. W. (2000). An integrated threat theory of prejudice. In S. Oskamp (Ed.), *Reducing prejudice and discrimination* (pp. 23–45). Mahwah, NJ: Erlbaum.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Blackwell.
- Voci, A., & Hewstone, M. (2003). Intergroup contact and prejudice toward immigrants in Italy: The mediational role of anxiety and the moderational role of group salience. *Group Processes & Intergroup Relations*, 6, 37–54.
- Wagner, U., van Dick, R., Pettigrew, T. F., & Christ, O. (2003). Ethnic prejudice in East and West Germany: The explanatory power of intergroup contact. *Group Processes & Intergroup Relations*, 6, 22–36.
- Whitley, B. E., Jr. (1999). Right-wing authoritarianism, social dominance orientation, and prejudice. *Journal of Personality and Social Psychology*, 77, 126–134.
- Whitley, B. E., Jr., & Lee, S. E. (2000). The relationship of authoritarianism and related constructs to attitudes toward homosexuality. *Journal of Applied Social Psychology*, 30, 144–170.
- Wilder, D. A. (1993). The role of anxiety in facilitating stereotypic judgments of outgroup behavior. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 87–109). San Diego, CA: Academic Press.
- Wolsko, C., Park, B., Judd, C. M., & Bachelor, J. (2003). Intergroup contact: Effects on group evaluations and perceived variability. *Group Processes & Intergroup Relations*, 6, 93–110.

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