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Intergroup Contact and the Central Role of Affect in Intergroup Prejudice

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Decades of research have studied the role of intergroup contact in reducing intergroup prejudice (see Allport, 1954; Hewstone & Brown, 1986; Pettigrew & Tropp, 2000, 2003), yet little consensus has emerged regarding its effects. Past reviews of this extensive literature have reached sharply conflicting conclusions. Some indicate that intergroup contact leads to positive changes in intergroup prejudice, especially when the contact occurs under optimal conditions (e.g., Jackson, 1993; Pettigrew, 1971, 1998; Riordan, 1978). Others take a more critical stance. They hold that intergroup contact has relatively little or no effect on broad-scale changes in intergroup prejudice (e.g., Amir, 1976; Ford, 1986; Rothbart & John, 1985).

At first blush, these perspectives appear to be fundamentally inconsistent, reflecting the long-standing debates that have engulfed this research literature during the last half century. We believe this divergence in perspectives has grown out of an overemphasis on the general question of *whether* intergroup contact will reduce prejudice, with the phenomenon of intergroup prejudice construed as a single dimension. Close examination of the research contributing to these perspectives suggests that many different components of intergroup prejudice – including both affective and cognitive components – must be considered as potential outcomes of intergroup contact. Thus, it may be that different branches of the research literature have emphasized different aspects of the intergroup relationship. We pursue this possibility in this chapter, and we propose that affective dimensions of intergroup relationships are especially important for understanding the effects of contact on intergroup attitudes.

HISTORICAL APPROACHES TO THE STUDY OF INTERGROUP PREJUDICE

Following World War II, American social psychology sought to combine affective, motivational, and cognitive processes in the study of psychological

phenomena. This multidimensional emphasis shaped the study of prejudice when the landmark study on the authoritarian personality appeared (Adorno et al., 1950). In the mid-1950s, however, two major events sharply changed the scene – Allport's (1954) *The Nature of Prejudice* and "the cognitive revolution."

Stressing cognitive factors, Allport (1954) countered the then fashionable assumption that group stereotypes were simply the aberrant distortions of "prejudiced personalities." Advancing the view now universally accepted, Allport insisted that cognitive components of prejudice were natural extensions of normal cognitive processes. Stereotypes, he concluded, were not aberrant at all, but unfortunately all too human. Reflecting a general emphasis on cognition throughout psychology, social cognition research took hold in social psychology in the 1970s. This work greatly enhanced our understanding of the nature and function of stereotyping, but its focus on cognitive concerns largely ignored the affective dimensions of prejudice.

By the 1980s, social psychologists began to broaden the scope of theory and research on prejudice, coinciding with a general move away from purely cognitive concerns to increased attention to affect and motivation. Two seminal volumes on stereotypes, both edited by David Hamilton, highlight the shift in emphasis. In *Cognitive Processes in Stereotyping and Intergroup Behavior* (Hamilton, 1981a), affect received only brief mention, and mood and emotion are not included in the index. By contrast, a dozen years later, *Affect, Cognition and Stereotyping* (Mackie & Hamilton, 1993a) centers on the role of affect.

AFFECTIVE TIES TO OUTGROUP MEMBERS AND REDUCTIONS IN INTERGROUP PREJUDICE

Corresponding to this shift, researchers have demonstrated a renewed interest in affect, both in terms of the bonds we create through our relationships with outgroup members, and the outcomes that can result from intergroup contact (e.g., Herek & Capitanio, 1996; Pettigrew, 1997a, 1998; Wright, Aron, & Tropp, 2002).

Pettigrew (1997a) proposes that the close ties generated by cross-group friendships can lead to greater feelings of liking for and identification with outgroup members; in turn, these affective ties feed into more positive feelings toward the entire outgroup. To test these possibilities, Pettigrew (1997a) analyzed survey responses from seven European samples. The survey asked participants to state whether they had any friends of a different culture, nationality, race, ethnicity, or social class, as well as to complete several measures of intergroup prejudice. These analyses revealed that cross-group friendships were consistently, highly, and negatively associated with intergroup prejudice. Moreover, the effects were especially strong for those prejudice measures based on affective responses, such as feelings

of sympathy and admiration for the outgroup. By contrast, contact with outgroup members as co-workers or neighbors yielded far smaller effects (see also Hamberger & Hewstone, 1997).

Similarly, Wright, Aron, and their colleagues (McLaughlin-Volpe et al., 2000; Wright et al., 2002; Wright & Van der Zande, 1999) propose that greater feelings of intimacy and closeness to a single outgroup member can promote reductions in intergroup prejudice toward the outgroup as a whole. To examine these issues, McLaughlin-Volpe et al. (2000) assessed both the quantity (number) and quality (closeness) of respondents' cross-group interactions, along with asking respondents to report their feelings toward outgroup members using six word pairs (e.g., warm/cold, friendly/hostile). Across questionnaire and diary studies, these authors found that greater contact quality was significantly associated with less intergroup prejudice. Furthermore, contact quality moderated the relationship between quantity of contact and prejudice, such that greater numbers of cross-group interactions were associated with lower levels of prejudice only among those who had close cross-group relationships.

Focusing on empathy, Batson et al. (1997) also describe how personal connections to individual outgroup members may provide a route to improving attitudes toward stigmatized groups in general (see also Stephan & Finlay, 1999). These authors propose that, by attempting to relate to the experiences of the stigmatized, and imagining how they are affected by their stigmatized status, people will become more inclined to feel concern for a stigmatized person. This enhanced concern for the stigmatized person should in turn generalize to more positive attitudes toward the entire stigmatized group. With multiple studies involving a range of stigmatized groups, Batson et al. (1997) found support for this view, showing that greater empathy toward a stigmatized individual can promote positive changes in attitudes toward the stigmatized group as a whole.

In sum, recent studies, both within and beyond the contact literature, suggest that establishing affective ties with a single outgroup member can promote positive feelings toward the outgroup as a whole. But investigations that focus on basic cognitive processes are less optimistic regarding the potential for generalization of positive contact outcomes.

COGNITIVE PROCESSES AND THE POTENTIAL FOR REDUCING INTERGROUP PREJUDICE

The examination of cognitive processes underlying intergroup phenomena grew out of a broader interest in understanding people as processors of information who seek to classify and organize the stimuli they encounter in the social world. In a seminal paper, Tajfel (1969) described the simplifying function of categorization, elaborating on how the mere categorization of

people into different groups can have profound effects on social perception and behavior (see also Tajfel, 1981). Cognitively oriented research on intergroup processes then flourished throughout the 1970s. This work placed particular emphasis on the role of categorization in the perpetuation of stereotypes (see Hamilton, Stroessner, & Driscoll, 1994). Thus, the research marked a notable shift from the earlier focus on motivation and affect to an emphasis on cognitive functions that underlie social perception and intergroup bias (Pettigrew, 1981, 1997b; Rothbart & Lewis, 1994).

This generation of research highlighted how stereotypes can be highly resistant to change (Hamilton, 1981b). When a person is categorized as a group member, stereotypes of that group are activated, and we tend to select, interpret, and recall information that is consistent with the outgroup stereotype (Hamilton et al., 1994; Wilder, 1986). The consensus view also held that information inconsistent with the stereotype is stored separately as either subtypes or "exceptions to the rule," thereby maintaining intact the original group stereotype (Taylor, 1981; Weber & Crocker, 1983; Wilder, 1984).

Growing out of these contentions, social psychologists began to question whether positive contact experiences with an individual outgroup member would in fact contribute to more positive views toward the outgroup as a whole (Hewstone & Brown, 1986; Rothbart & John, 1985; Wilder, 1986). Rothbart and John (1985) proposed that we view generalization largely in terms of the cognitive processes that negotiate relationships between stereotypical characteristics of a group and characteristics of those individuals who belong to the group (see also Rothbart, 1996; Rothbart & John, 1993). A basic premise of their argument is that, when viewing individuals as potential group representatives, people grant more weight to outgroup individuals who confirm the group stereotype and less weight to those who disconfirm the group stereotype (but see Rojahn & Pettigrew, 1992). Thus, when people are asked to make judgments about that group, individuals who possess those characteristics that are consistent with the group stereotype are more likely to come to mind as group "representatives" than those who do not possess those characteristics (see Rothbart, Sriram, & Davis-Stitt, 1996).

These perceptual processes directly influence the likely outcomes of intergroup contact (Rothbart & John, 1985, 1993). Interacting members of different groups can learn individuating information about each other that could potentially reduce their reliance on negative stereotypes. As we receive individuating information that disconfirms the group stereotype, we may become *more* likely to see outgroup members in a positive light, but we may also become *less* likely to see them as good representatives of their group. This process would severely limit the potential for any positive changes at the individual level to generalize to positive changes in views of the whole outgroup.

This reasoning led many researchers to focus on the role of typicality as a crucial determinant for the generalization of contact outcomes (Hewstone & Brown, 1986; Weber & Crocker, 1983; Wilder, 1984). In particular, Wilder's (1984) research indicates that positive contact experiences with an outgroup member may only generalize to the entire outgroup when the outgroup member is perceived to be typical of the outgroup. Wilder (1984) and others recognize that positive changes in intergroup perceptions from intergroup contact are possible, but they hold that such generalization is difficult to achieve given the rigid nature of stereotyping and other cognitive processes associated with categorization.

DEVELOPING A DIFFERENTIATED VIEW OF CONTACT OUTCOMES: AFFECTIVE AND COGNITIVE APPROACHES

These brief reviews suggest that two research traditions have emerged in examining the potential generalization of contact effects. One tradition focuses on *affective* dimensions of the intergroup relationship, and indicates that affective ties to individual outgroup members can propel positive feelings toward the outgroup as a whole. The other tradition concentrates on *cognitive* dimensions of the intergroup relationship, and suggests that the inertial nature of stereotyping and categorization makes the generalization of positive contact outcomes extremely difficult. Viewing these traditions together (Mackie & Hamilton, 1993b; Mackie & Smith, 1998), we believe a reconciliation and integration of these traditions seems possible, depending on the types of generalization we wish to consider. Rather than simply asking whether positive outcomes of contact will or will not generalize, it is useful to ask about the *kinds* of contact outcomes that are likely to generalize. Indeed, based on the research reviewed, we predict that *affective outcomes of intergroup contact are more likely to generalize than cognitive outcomes.*

This differentiated view of contact outcomes fits nicely with other research and theory on attitudes and the components of intergroup prejudice. Attitudes are generally defined as evaluative responses to objects or classes of objects (Eagly & Chaiken, 1993; Ostrom, 1969; Zanna & Rempel, 1988). Yet, rather than being conceptualized as a single construct, cognition and affect represent conceptually distinct components of both attitudes in general (Breckler & Wiggins, 1989; Eagly & Chaiken, 1993; Ostrom, 1969; Zanna & Rempel, 1988) and prejudiced attitudes in particular (Brewer, Campbell, & Levine, 1971; Esses, Haddock, & Zanna, 1993; Mann, 1959; Stangor, Sullivan, & Ford, 1991). Cognitive components of prejudice are commonly expressed in terms of one's perceptions, judgments, and beliefs about a group (Ashmore & Del Boca, 1981; Katz & Hass, 1988; Ostrom, Skowronski, & Nowak, 1994), whereas affective components of prejudice

are based on one's feelings and emotional responses to a group (Esses et al., 1993; Smith, 1993; Stangor et al., 1991).

Here, by emphasizing a distinction between cognitive and affective dimensions of intergroup prejudice, we do not intend to imply that cognition and affect are entirely independent processes (see Eagly & Chaiken, 1993). We recognize that cognitive and affective processes often interact with each other, as has been noted in recent research (see Mackie & Smith, 2002; Stephan & Stephan, 1993, for reviews). Rather, we raise the distinction because we believe it highlights different ways in which we think about intergroup relationships and respond to outgroup members as the targets of our attitudes. Focusing on cognitive dimensions, such as making judgments and stating beliefs, may guide us toward evaluating outgroup targets as relatively detached observers, where we maintain a degree of psychological distance between ourselves and those outgroup targets. By contrast, affective dimensions may shift the focus of our attitudes such that they are more relational in nature, reflecting our feelings and emotional responses to outgroup members in the context of our relationships with them (see Zajonc, 1980; Zanna & Rempel, 1988, for related arguments). Thus, given that affective ties to outgroup members grow from intergroup contact – and particularly that involving close cross-group relationships – it is likely that such contact would generally produce greater attitudinal shifts on affective dimensions of prejudice relative to the effects observed for cognitive dimensions.

Furthermore, we suspect that these shifts should be especially likely to occur for those affective dimensions that relate directly to group members' contact experiences and denote *affective ties* to the outgroup, such as feelings of closeness to outgroup members, and feelings of comfort in cross-group interactions. Over several decades, researchers have noted that intergroup contact can promote greater feelings of warmth and closeness toward outgroup members (e.g., Cook, 1984; Deutsch & Collins, 1951; Pettigrew, 1997a; Wright et al., 2002). Much of the recent literature has concentrated on the role that anxiety plays in intergroup contact (e.g., Britt, Boniecki, Vescio, & Biernat, 1996; Islam & Hewstone, 1993; Stephan et al., 2002), as well as group members' concerns about feeling comfortable and accepted in cross-group interactions (e.g., Devine & Vasquez, 1998; Vorauer, Main, & O'Connell, 1998). Thus, though a wider range of emotions may be implicated depending on relations between the specific groups involved (Mackie & Smith, 2002), our discussion of affect focuses primarily on those dimensions that represent *affective ties* with the outgroup.

For the remainder of this chapter, we will examine variability in the generalization of different kinds of contact outcomes. We will consider whether the effects of contact on intergroup prejudice differ, depending on how prejudice is defined and assessed. In line with the two traditions of

contact research, we compare relationships across affective and cognitive indicators of intergroup prejudice with two distinct types of data. First, we analyze data from our extensive meta-analytic review of research on the relationships between intergroup contact and prejudice (Pettigrew & Tropp, 2000, 2003). Here, we will contrast the magnitudes of contact-prejudice effects in relation to the many measures of prejudice used in prior research studies. We then examine these relationships further in a questionnaire study (see Tropp & Pettigrew, 2004), in which participants completed a wide range of prejudice measures paralleling those most commonly used in the broader contact literature.

RELATIONSHIPS BETWEEN INTERGROUP CONTACT AND PREJUDICE: META-ANALYTIC FINDINGS

Our recent meta-analysis examining relationships between contact and prejudice reveals the great variability with which prejudice has been defined and assessed in past research (Pettigrew & Tropp, 2000, 2003). For this analysis, we gathered studies through intensive searches of many research literatures, and we utilized a wide range of procedures to locate appropriate studies. First, we conducted computer searches of the psychological (*PsychLIT* and *PsycINFO*), sociological (*SocAbs* and *SocioFile*), political science (*GOV*), education (*ERIC*), dissertation (*UMI Dissertation Abstracts*), and general research periodical (*Current Contents*) abstracts through December 2000. These searches used 54 different search terms that range from single words (e.g., "intergroup," "contact") to combined terms (e.g., "age + intergroup contact," "disabled + contact"). Across the databases, we conducted three types of searches with these terms – by "title words," "key words," and "subject" – to maximize our chances of finding all relevant studies. Using the *Social Sciences Citation Index*, we checked on later citations of especially seminal contact studies, following the "descendancy approach" described by Johnson and Eagly (2000). We also requested published and unpublished papers through psychology e-mail networks, and we wrote personal letters to researchers who have published relevant work. Finally, we searched through reference lists from the studies we found and previous reviews of the contact literature.

As we gathered these papers, we evaluated whether they should be included in the analysis on the basis of four primary criteria (see Pettigrew & Tropp, 2003).

1. Because our focus is on the relationship between intergroup contact and prejudice, we considered *only those empirical studies in which intergroup contact can act as an independent variable for predicting intergroup prejudice*. This requirement excluded research that treats contact as a dependent variable in explaining how and why contact occurs.

2. We included *only studies that involve contact between members of discrete groups*. This rule allows for inclusion of studies involving cross-cutting categories, but only if the categories are clearly defined.
3. For inclusion, *the research must involve some degree of actual face-to-face interaction between members of the different groups*. Thus, the interaction must be observed or reported, or occur in such focused, long-term situations in which direct contact is unavoidable. This rule excludes research that utilizes rough proximity or group proportions to *infer* intergroup interaction. Our only exceptions involve research that carefully demonstrated that the intergroup proximity correlated highly with actual contact. This rule also omits investigations that attempt to assess contact using such indirect measures as information about an outgroup. We also excluded studies that asked about attitudes toward contact unless the researchers directly linked such indicators to prior intergroup experience. Finally, this inclusion rule eliminates research that categorizes participants into groups that do not directly interact – as in many minimal group studies.
4. *The prejudice dependent variables must be collected on individuals rather than simply as a total aggregate outcome, and data must be available to evaluate variability in prejudice in relation to intergroup contact.* These points allow for the inclusion of studies that examine relationships between contact and prejudice in within-group designs, or experimental tests of the effects of contact on prejudice in between-group designs.

Our full analysis includes 515 individual studies, with 714 independent samples and 1,365 nonindependent tests. Combined, 250,513 participants from 38 nations participated in the studies reported in this analysis. These studies span from the early 1940s through the year 2000, and they involve a wide variety of target groups, contact settings, study designs, and research procedures (Pettigrew & Tropp, 2000, 2003).

Our meta-analysis reveals that greater intergroup contact is significantly associated with lower levels of prejudice. Although the magnitude of this general relationship varied widely across studies, 93% of the studies showed an inverse relationship between contact and prejudice. Table 12.1 shows the mean estimates for the contact-prejudice effect size are quite consistent across the three units of analysis. For both the 515 studies and the 714 samples, the mean Cohen's d is $-.47$ (or a mean r of $-.23$). For the 1,365 tests, the mean d is $-.45$ (mean $r = -.22$). These estimates are only slightly reduced when two data corrections are imposed (assigning ceilings on sample sizes for five extremely large studies, and omitting fifteen studies that reported "nonsignificant" effects). It is these files – with "nonsignificant" studies removed and the largest studies, samples and tests capped – that we utilize in subsequent analyses.

TABLE 12.1. *Summary of Effect Sizes for Contact-Prejudice Relationship Across Studies, Samples, and Tests*

	d	95% CL	*Z*	*p*	*k*	*r*	*g*	*N*
All studies	−.467	−.47/−.46	−145.2	<.000	515	−.227	−.450	250,513
With data corrections[a]	−.425	−.43/−.42	−115.2	<.000	500	−.208	−.463	203,174
All samples	−.466	−.47/−.46	−145.0	<.000	714	−.227	−.454	250,513
With data corrections[a]	−.427	−.43/−.42	−115.2	<.000	697	−.209	−.465	199,967
All tests	−.452	−.46/−.45	−198.4	<.000	1,365	−.221	−.475	507,867
With data corrections[a]	−.416	−.42/−.41	−151.4	<.000	1,349	−.203	−.481	382,412

[a] For data reported with corrections, 15 cases reporting "nonsignificant" results have been removed (Johnson & Eagly, 2000; Rosenthal, 1995), and cases with extremely large sample sizes have been capped at 5,000 for studies, 3,000 for samples, and 2,000 for tests to avoid overweighting their results in the analysis. These corrected data files have been used in all subsequent analyses reported in this chapter.

Note: d = mean effect size weighted by the reciprocal of the variance; 95% CL = the 95% confidence limits of d; Z = standard score or deviate; p = probability of d; k = number of studies, samples, or tests involved in the analysis; r = correlation; g = unweighted mean effect; N = total number of subjects.

The studies included in this final sample are highly diverse as to participants, target groups, study designs, and contextual factors – all of which are potential moderators of the relationship between intergroup contact and prejudice. The clear majority of tests included in the analysis (85%) shows generalization of contact outcomes to the outgroup as a whole, with a mean contact-prejudice effect size only slightly lower ($d = -.41, r = -.20$) than that obtained for contact outcomes for individuals in the original contact situation ($d = -.42, r = -.21$). In addition, the more rigorous research studies reveal stronger associations between contact and prejudice (see Pettigrew & Tropp, 2000, 2003).

Relevant to the present discussion, our analysis includes studies that use a wide range of prejudice indicators. This inclusive net allows us to investigate the many ways in which researchers have measured prejudice, and to test whether relationships between contact and prejudice vary, depending on how prejudice is measured.

To preface this investigation, we first examine whether there were particular trends in the assessment of prejudice in contact research over past decades. For each test of the contact-prejudice relationship ($k = 1,349$), we coded whether the prejudice measure represented one of four broad types of indicators (beliefs, social distance, stereotypes, and affect). Those coded as *beliefs* ($k = 515$; 38%) ask participants to report the degree to which they endorse particular beliefs about the nature and experiences of a specified group, and how that group fits within the broader society. *Social distance* measures ($k = 263$; 19%) consist mostly of Bogardus-like instruments, in which participants indicate their willingness to interact with outgroup members across a variety of social contexts (Bogardus, 1928). Assessments of *stereotypes* (15%) involve two kinds of measures: items that directly assess the degree to which participants see certain characteristics as being associated with a group ($k = 145$), and those that use a semantic-differential format to ask participants about outgroup traits ($k = 58$; Osgood, Suci, & Tannenbaum, 1957). *Affect* measures (18%) include favorability ratings ($k = 113$) and semantic-differential scales assessing liking and intergroup evaluations ($k = 57$), along with measures concerning felt or anticipated emotions in cross-group interactions ($k = 68$). Although there is substantial variability in how emotions have been assessed in contact research, most of the emotion-based measures touched on feelings of comfort and anxiety (either as its primary focus, or as part of a more general measure of affective responses), with a few additional cases focusing on other, more specific emotions (e.g., fear, sympathy). Prejudice measures that do not fit in any of these categories ($k = 127$; 10%) are classified as *other*.

By decade, we tallied the number of tests corresponding to each type of prejudice indicator. We then divided these values by the total number of tests reported in each decade to compute the proportion of tests representing each kind of prejudice indicator in each decade. Figure 12.1 reveals that

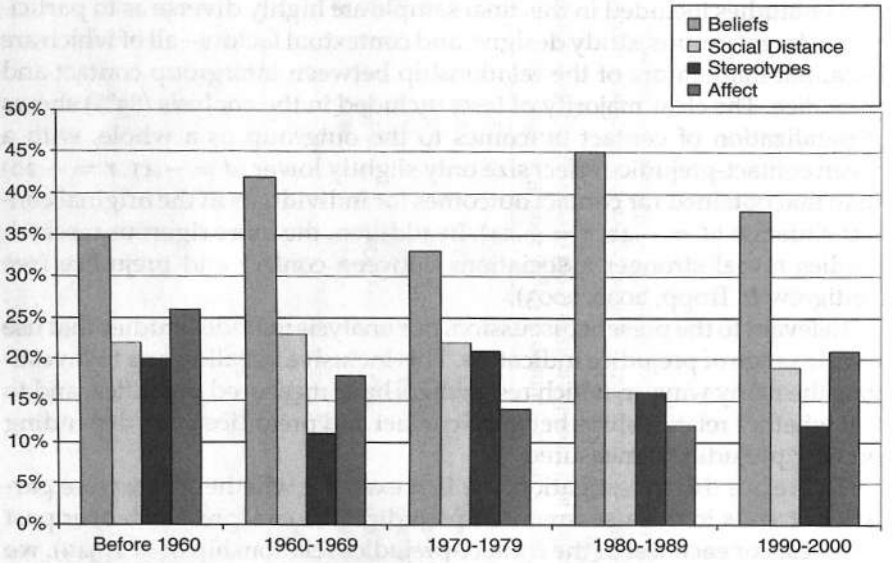

FIGURE 12.1. Proportion of tests reported for different prejudice indicators in contact studies from the 1940s to 2000.

intergroup belief measures have traditionally been, and continue to be, the most commonly used prejudice indicators in intergroup contact studies. The use of social distance measures has been reasonably constant, decreasing only slightly in recent decades. The use of stereotype measures peaked during the 1970s as the focus on affect waned. But a renewed interest in affect surfaced in studies from the 1990s.

Using the test level of analysis, Table 12.2 examines effect sizes across the contrasting types of prejudice measures. These results reveal that various measures of affect yield particularly strong effects, whether they were emotion-based measures (mean $d = -.53, r = -.26$), favorability ratings (mean $d = -.41, r = -.20$), or semantic-differential scales assessing liking and intergroup evaluations (mean $d = -.56, r = -.27$). Belief (mean $d = -.43, r = -.21$) and social distance (mean $d = -.44, r = -.21$) measures of prejudice also secure strong effects. Stereotype indicators produce weaker effects (mean $d = -.26, r = -.13$), but their results vary, depending on their form of measurement. The 147 tests that directly measure stereotypes yield meaningful, though significantly reduced effects (mean $d = -.32, r = -.16$). But the fifty-eight tests that use a semantic-differential format to tap stereotypes provide much smaller effects (mean $d = -.10, r = -.05$).

These patterns of findings shift only slightly when just the 1,148 tests concerning generalization to the outgroup are included in the analysis. Here, both affect and social distance measures show the strongest overall

TABLE 12.2. *Estimates of Contact-Prejudice Relationship Across Different Types of Prejudice Indicators*

Prejudice Indicator	*d*	95% CL	*Z*	*p*	*k*	*r*	*g*	*N*
Beliefs	−.426	−.43/−.42	−105.604	<.000	518	−.208	−.495	161,684
Social Distance	−.436	−.45/−.42	−69.889	<.000	263	−.213	−.436	85,252
Stereotypes	−.261	−.28/−.24	−30.364	<.000	203	−.130	−.410	47,170
Affect	−.463	−.48/−.45	−71.911	<.000	238	−.226	−.563	65,576
Other	−.370	−.39/−.35	−34.763	<.000	127	−.182	−.472	22,730

Note: The tests used in this table have had ceilings placed on their sample sizes and reports of "nonsignificance" omitted, as indicated in Table 12.1. As in Table 12.1, d = mean effect size weighted by the reciprocal of the variance; 95% CL = the 95% confidence limits of d; Z = standard score or deviate; p = probability of d; k = number of studies, samples, or tests involved in the analysis; r = correlation; g = unweighted mean effect; N = total number of subjects.

effects (mean $d = -.45, r = -.22$), with the emotion and affect-based semantic-differential measures yielding particularly strong effects (mean $d = -.52$ and $-.55$, respectively; $r = -.25$ and $-.26$). Belief measures show moderate effects (mean $d = -.41, r = -.20$). Stereotype measures show the weakest effects (mean $d = -.24, r = -.12$), though they again vary, depending on how stereotypes are assessed. Tests involving direct measures of stereotypes render modest effects (mean $d = -.29, r = -.15$), whereas tests involving semantic-differential measures of stereotypes reveal especially weak effects (mean $d = -.09, r = -.05$). Thus, although the results generally show that greater levels of contact are associated with lower levels of prejudice, additional analyses reveal that the strongest contact-prejudice relationships occur with affect-based measures. Measures of beliefs and social distance also provide strong contact-prejudice effects, yet the effects are markedly weaker for stereotype measures.

In sum, results from this analysis indicate a significant, inverse relationship between contact and prejudice, with greater levels of contact associated with lower levels of prejudice. Furthermore, the analysis reveals that the positive effects of contact tend to generalize from the immediate contact situation to the outgroup as a whole. However, the findings also point to systematic differences in the magnitudes of the contact-prejudice relationship depending on the prejudice measures used. The strongest contact-prejudice effects occur for affect measures, and the weakest effects emerge for stereotype measures. Together, these results lead us to question whether we should expect all potential outcomes to be affected equally by intergroup contact, given that there may be differences in orientation associated with affective and cognitive dimensions of intergroup prejudice. To reconcile divergent perspectives regarding the generalization of contact outcomes, we suggest that generalization may be achieved more readily for affective indicators of prejudice, relative to effects achieved for cognitive indicators.

RELATIONSHIPS BETWEEN INTERGROUP CONTACT AND MULTIPLE INDICATORS OF INTERGROUP PREJUDICE

Although these meta-analytic results are robust, there are limitations on the comparisons we can conduct with these data. Indeed, skeptics often criticize meta-analysis for conducting comparisons across studies in which variables, samples, and testing procedures are not uniform (see Rosenthal, 1991). In the meta-analysis, we had to group different prejudice measures together across studies to create broad categories of prejudice indicators for which contact-prejudice effect sizes could be compared.

Although the results of these procedures are informative, the classification of prejudice measures into broad categories reduces our ability to

conduct a fine-grained analysis of what the various measures represent. For example, although semantic-differentials and favorability ratings are often used to assess affect in a broad sense, we find that these kinds of measures vary across different studies in the response scales offered to participants. In some cases, the measures are primarily designed to assess people's feelings toward and liking for other groups (e.g., Riordan, 1987; Stangor et al., 1996); whereas, in others, the measures focus on people's impressions or evaluations of other groups (e.g., Luiz & Krige, 1981; Patchen et al., 1977). In still other cases, such measurement details are not included in the research reports, thus making it difficult to determine distinctions in contact effects across different kinds of contact outcomes.

Thus, we conducted a separate study in which we asked participants to complete a wide range of measures pertaining to intergroup contact and prejudice (see Tropp & Pettigrew, 2004). Their responses allow for the simultaneous examination of relationships between multiple indicators of contact and prejudice, along with providing an opportunity to explore how different types of prejudice measures cluster together.

For this study, we recruited 126 white undergraduate participants (forty-six males and eighty females), with ages ranging from eighteen to twenty-two (mean age = 19.39 years). We informed participants that the study concerned people's experiences with and impressions of black Americans, after which they completed a questionnaire. The participants completed a wide variety of prejudice measures in reference to black Americans, using 7-point Likert-type scales. We gathered the following measures from an examination of studies in the meta-analysis (Pettigrew & Tropp, 2000, 2003), selecting them to represent the broad range of outcomes most commonly assessed in intergroup contact research.

POSITIVE AND NEGATIVE AFFECT. Participants reported the extent to which they would feel five positive emotional states (e.g., relaxed, secure) and five negative emotional states (e.g., awkward, threatened) in response to an imagined interaction with a black person ($\alpha = .91$ and .85, respectively; Stephan & Stephan, 1985).

INTERGROUP ANXIETY. Participants indicated the degree to which they feel anxious about discussing cultural differences and interacting with black people ($\alpha = 85$; Britt et al., 1996).

IDENTIFICATION. Participants indicated the extent to which they "identify" and "feel strong ties" with black people ($\alpha = .87$; Brown et al., 1986).

EXPECTATIONS. Participants indicated the degree to which they hold positive expectations (e.g., would get along, could trust) for interactions with black people ($\alpha = .88$; Tropp, 2003).

WARMTH. A single item assessed how "cold" or "warm" participants generally feel toward black people, using a procedure similar to a feeling

thermometer (*NES Guide to Public Opinion and Electoral Behavior*, 1995–2000).

SEMANTIC DIFFERENTIAL. Participants indicated how they view black people in response to five word pairs (e.g., beautiful-ugly, strong-weak; $\alpha = .91$; see Osgood et al., 1957).

SOCIAL DISTANCE. Participants indicated their willingness to interact with black people in eight different social contexts (e.g., classroom, neighborhood; $\alpha = .94$; see Bogardus, 1928).

PRO-BLACK AND ANTI-BLACK RACIAL ATTITUDES. Participants indicated responses of sympathy and/or disapproval regarding the experiences of black Americans ($\alpha = .84$ and .76, respectively; see Katz & Hass, 1988).

BELIEFS. Items from the Attitudes toward Blacks Scale (Brigham, 1993), the Modern Racism Scale (McConahay, Hardee, & Batts, 1981), and the Racial Resentment Scale (Kinder & Sanders, 1996) assessed participants' symbolic beliefs about black people ($\alpha = 87$).

We first calculated correlations among these measures to examine their interrelationships (see Table 12.3). Nearly all the measures significantly correlate with each other at the .05 level of significance. Yet even among those relationships that are significant, there is considerable variability in the magnitudes of the correlations, with absolute values of r ranging from .17 to .72. Only four relationships between the measures were not statistically significant: Positive Affect did not correlate significantly with either Beliefs or Anti-Black Racial Attitudes, and neither Positive Affect nor Intergroup Anxiety correlated significantly with Pro-Black Racial Attitudes.

We then entered these measures into a principal-axis factor analysis with oblique rotation to explore how the measures cluster together. Two factors emerged, accounting for 55% of the variance in participants' scores (Table 12.4). A first factor included primarily *affective* indicators of prejudice, with strong loadings on Positive Affect, Negative Affect, Intergroup Anxiety, Identification, Expectations, and Warmth (rotated factor loadings from .40 to .85). A second factor included mostly *cognitive* indicators of prejudice, with strong loadings on the Semantic Differential, Social Distance, Intergroup Beliefs, and Pro-Black and Anti-Black Racial Attitudes (rotated factor loadings from .51 to .91). The two factors were only moderately correlated, $r = .40$, and a principal components analysis using orthogonal factors obtained virtually identical results.

One may wonder why Social Distance loaded highly in the cognitive factor rather than on the affective factor. After all, social distance measures are commonly used to assess people's responses to cross-group interactions across social contexts. However, these measures typically ask participants to report their *willingness to interact* with other groups (Bogardus, 1928), rather than asking them how they would expect *to feel* during those interactions. As such, social distance measures may reflect people's detached views of outgroup targets more than their emotional responses to them.

TABLE 12.3. *Correlations Among the Prejudice Measures*

	1	2	3	4	5	6	7	8	9	10	11
1. Positive Affect		−.69***	−.59***	.40***	.48***	.39***	−.36**	−.23**	−.11	.06	−.15
2. Negative Affect			.72***	−.47***	−.46***	−.42***	.30***	.38***	.21*	−.18*	.19*
3. Intergroup Anxiety				−.47***	−.46***	−.36***	.27**	.29***	.24**	.02	.17*
4. Identification					.62***	.30***	−.38***	−.33***	−.30***	.22*	−.29**
5. Expectations						.41***	−.51***	−.52***	−.41***	.27**	−.38***
6. Warmth							−.55***	−.40***	−.33***	.28**	−.30***
7. Semantic Differential								.50***	.46***	−.31***	.55***
8. Social Distance									.59***	−.38***	.54***
9. Intergroup Beliefs										−.67***	.65***
10. Pro-Black Attitudes											−.41***
11. Anti-Black Attitudes											

Note: $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

TABLE 12.4. *Rotated Factor Loadings from Factor Analysis of Prejudice Measures*

Measure	Factor 1	Factor 2
Positive Affect	**−.82**	.12
Negative Affect	**.85**	−.05
Intergroup Anxiety	**.82**	−.09
Identification	**−.54**	−.18
Expectations	**−.52**	−.35
Warmth	**−.40**	−.31
Semantic Differential	.35	**.51**
Social Distance	.19	**.64**
Intergroup Beliefs	−.07	**.91**
Pro-Black Racial Attitudes	.11	**−.67**
Anti-Black Racial Attitudes	−.01	**.74**

Note: Loadings of .40 or higher have been highlighted in **bold**.

We then examined participants' responses to these measures in relation to three indicators of intergroup contact. Participants were asked to report: (1) the number of black people they know, at least as acquaintances; (2) the number of black people they would consider to be friends; and (3) how close they feel to the black people they know on a scale ranging from 1 (not at all) to 7 (very close). Additionally, participants completed two 6-item measures concerning internal and external motivation to control prejudice ($\alpha = .83$ and .88, respectively; Dunton & Fazio, 1997; Plant & Devine, 1998). We used these measures as controls in the following analyses, because participants may resist admitting to prejudices toward other groups.

Table 12.5 provides the correlations between the contact and prejudice measures, both with and without controlling for motivation to control prejudice. Consistent with the meta-analytic results, many significant relationships emerge between the contact and prejudice measures, revealing that greater intergroup contact is associated with more positive intergroup outcomes. At the same time, notable differences in the relationships emerge across the prejudice indicators. Those measures loading highly on the affective factor significantly and more consistently relate to the contact indicators than those loading highly on the cognitive factor; furthermore, these patterns are particularly pronounced for those contact indicators that indicate close cross-group ties, such as outgroup friends and intergroup closeness. Note, too, that the more evaluative measures from the cognitive factor (semantic-differential, social distance) reveal some significant relationships with the contact indicators, particularly when motivations to control prejudice are partialed out, whereas the belief measures did not.

These findings underscore how affective and cognitive dimensions of intergroup prejudice may have different implications for intergroup relations. Exploratory factor analysis distinguished between prejudice

TABLE 12.5. *Correlations Between Prejudice Measures and Three Indicators of Intergroup Contact*

Measure	Outgroup Acquaintances		Outgroup Friends		Outgroup Closeness	
	r	Partial *r*	*r*	Partial *r*	*r*	Partial *r*
Affective Factor						
Positive Affect	.22*	.24**	.31***	.36***	.23***	.23***
Negative Affect	−.21*	−.24**	−.32***	−.39***	−.27**	−.27**
Intergroup Anxiety	−.21*	−.19*	−.34***	−.40***	−.31***	−.32***
Identification	.26**	.27**	.38***	.42***	.32***	.33***
Expectations	.13	.18*	.26**	.34***	.27***	.28***
Warmth	.11	.15	.30***	.34***	.22*	.21*
Cognitive Factor						
Semantic Differential	−.05	−.10	−.14	−.22*	−.15	−.15
Social Distance	.04	−.06	−.15	−.27**	−.17*	−.21*
Intergroup Beliefs	.03	−.02	−.01	−.06	−.13	−.15
Pro-Black Attitudes	.02	.10	.04	.09	.04	.05
Anti-Black Attitudes	.01	−.04	−.03	−.07	−.15	−.16

Note: Partial *r*'s control for internal and external motivation to control prejudice. * $p < .05$; ** $p < .01$; *** $p < .001$.

measures representing affective ties with the outgroup (Positive Affect, Negative Affect, Anxiety, Identification, Expectations, and Warmth) and those representing cognitive and evaluative responses to the outgroup (Semantic Differential, Social Distance, Intergroup Beliefs, Pro-Black and Anti-Black Racial Attitudes). Measures loading highly on the affective factor also showed more consistent and significant relationships with contact indicators than measures loading on the cognitive factor, particularly for those contact indicators concerning close ties to outgroup members. Thus, together, our results suggest that affective dimensions of intergroup relationships are especially important considerations for achieving positive outcomes from intergroup contact.

CONCLUSIONS

In this chapter, we have reviewed two branches of contact research that often reach different conclusions regarding the potential for intergroup contact to reduce prejudice. We propose that the nature of their disagreement lies in their tendency to focus on different aspects of the intergroup relationship. On the one hand, cognitively oriented theorists are correct in highlighting the importance of the many cognitive barriers to stereotype change that can limit contact effects. But, in neglecting affective factors, they overlook the many positive, generalizable outcomes that can grow from intergroup contact. On the other hand, affectively oriented theorists are correct in showing how contact – especially that involving close relationships – can render meaningful changes in how people feel toward outgroups. But they are, perhaps, too enthusiastic about the potential for contact to reduce prejudice in all its forms.

In line with these proposals, the combined results of the meta-analysis and questionnaire study confirm that prejudice indicators cannot be treated interchangeably. Different patterns of relationships emerge, depending on the measures used. Results from these studies also mesh nicely with a host of other recent findings that point to the pivotal role of affect in intergroup prejudice (Smith, 1993). For example, a meta-analysis reveals that relative deprivation strongly predicts prejudice only when it taps anger and resentment, as well as a perceived group difference (Walker & Smith, 2001). Stephan and colleagues (2002) demonstrate the critical role of anxiety in the contact-prejudice relationship, with intergroup anxiety mediating the effects of contact on racial attitudes for both black and white American participants. Similarly, Esses and Dovidio (2002) show that emotions mediate most of the effect of a video depicting racial discrimination on their white college participants' willingness to engage in interracial contact.

The marked contrast between relatively large contact effects on affective dimensions of prejudice and much smaller effects on stereotypes presents

an interesting problem. We agree with Mackie and Smith (1998) that future research needs to combine cognitive and affective considerations toward a more integrated understanding of intergroup prejudice. We suspect that, whereas stereotypes may still be activated, and the content of stereotypes may be slow to change, the affective tone of stereotypes may shift as a result of intergroup contact. Thus, after optimal contact, the "lazy" outgroup may still be seen as "lazy" – but "lazy" might take on such new affective qualities as "laid back" and cultivating a relaxed enjoyment of life. To explore these possibilities, future contact research must be careful to measure intergroup prejudice both in terms of affective connections to and cognitive representations of outgroup members.

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