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Mediators of the Contact–Prejudice Relation among South African Students on Four University Campuses

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*Intergroup contact is undoubtedly associated with lower levels of self-reported prejudice. In some situations, however, contact may have little or no association with prejudice. Studies conducted in apartheid South Africa rarely found such an association. Apartheid was overturned in 1994, but there have been few explicit tests of the relationship since then. The present study explored the relation between contact and prejudice in a large (*N = *2,599) and diverse nonprobability sample of South Africans. Participants were recruited from four universities. In addition, factors were explored that might modulate the contact–prejudice relation, or have independent effects. The relation between prejudice and contact was larger for affective prejudice (*r ≈ |*.35|) than for social distance (*r ≈ |*.2|). Analysis showed that the effects of contact were not reducible to those of other variables, although the contact–prejudice relation was mediated in many instances.*

Relations between spatially contiguous ethnic or racial groups are often conflictual. A review by Gallagher (2004) identified 94 major conflicts between 1945 and 1988, including several cases of genocide, and 208 successful coups or revolutions. A central concern of social psychology has long been the understanding of such ethnic violence, and its warning signs—prejudice, ethnocentrism, ingroup favoritism. Many theories have emerged to explain prejudice, ranging from work in the 1940s on the authoritarian personality (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950), to the group-based accounts of Tajfel and other

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social identity theorists (cf. Tajfel & Turner, 1979). There is also a long activist tradition in social psychology, including expert testimony in school desegregation law cases (Pettigrew, 1979), setting up encounter groups in conflictual regions (Saguy, 2002), and innovative cooperative learning interventions (Aronson & Patnoe, 1997). Particularly well known in this respect is the promotion of interethnic contact as a (partial) remedy for intergroup conflict. The clearest statement of this "hypothesis" was by Gordon Allport (1954), who noted that intergroup contact will have positive effects, should it occur under particular conditions, but that there could be no guarantee of positive effects if it did not occur under these conditions. Thus, Muzafer Sherif and colleagues (Sherif, Harvey, White, Hood, & Sherif, 1961) famously showed that bringing groups of boys into contact with each other resulted in conflictual relations when they were in competition for resources. He also showed that bringing the boys into contact under conditions of cooperative dependency reversed the conflict, drawing attention to the context under which interaction occurs.

Allport's hypothesis has received much support in the intervening years, with the bulk of over 500 studies supporting the notion that contact reduces prejudice and conflict (Pettigrew & Tropp, 2006). Many of these studies also supported the notion that contact needs to occur under particular conditions for it to have positive effects—indeed, over many years the list of conditions accumulated far beyond those specified by Allport (namely, institutional support for contact, common goals, cooperation, equality of group status in the contact situation). Pettigrew (1998) argued against this "open-ended laundry list" (p. 69) of conditions, a list without theoretical rationale or reason, suggesting that we prune it back to the canonical conditions set down by Allport, with the single addition that the contact situation should have friendship potential for those in contact.

However, recent developments in contact theory and research question the conditionality of the contact effect. Pivotal among these is the meta-analysis by Pettigrew and Tropp (2006), a massive review of the extant literature (over 500 studies), dating from the 1940s till over 60 years later. Pettigrew and Tropp concluded that the conditions specified by Allport are facilitatory, but that positive effects occur when groups come into contact in their absence. Pettigrew and Tropp base this conclusion on a moderator analysis of the review database, coding studies for whether they met the conditions set down by Allport, and using the emergent coding variable to partition the study set. A single variable coding the set of four conditions showed that contact had greater effects when the set of optimal conditions was present, but that contact had an effect, nevertheless, when these were absent. This pattern was not replicated when the single conditions were taken on their own, that is, as separate variables, and indeed, when taken on their own, it was not clear that they resolved any variance at all in effect size. In summary, though, the effect of contact was robust to the presence or absence of facilitatory conditions.

The bottom line for Pettigrew and Tropp is that contact, on its own, and of itself, has improvement value. Mere exposure to the other group reduces prejudice and improves relations. They go further and suggest that we should revisit the theory underlying the effect of contact, and suggest a two-pronged approach to this. On the one hand, we should acknowledge the finding that "familiarity breeds liking," that mere exposure to another person can increase our liking for him or her (Zajonc, 1968; see also Zebrowitz, White, & Wieneke, 2008). On the other hand, we should recognize the central importance of intergroup anxiety, and in particular, that contact reduces intergroup anxiety (Hewstone, 2003; Stephan et al., 2002). Indeed, the intergroup threat theory of Stephan and colleagues proposes that an important function of contact is to reduce intergroup anxiety, and a portion of the total effect of contact is through this reduction. In other words, intergroup anxiety mediates the relationship between contact and prejudice.

The history of contact research in South Africa has recently been reviewed by Finchilescu and Tredoux (2008). In the apartheid period (pre-1990), studies were not easy to conduct, and few were reported. Results, where available, were equivocal about the relation between intergroup contact and prejudice. In recent times, that is, post-1990, more research has been conducted, including several nationwide probability surveys, and these studies bear out the contention that contact reduces prejudice. Holtman, Louw, Tredoux, and Carney (2005), Gibson (2004), and Dixon, Durrheim, and Tredoux (2007) all report sizeable correlations between contact and prejudice, and some of these are large (e.g., $|r| = .54$ in Holtman et al., for the White Afrikaans sample). Although the relation between contact and prejudice is in the expected direction, several threads of research in South Africa suggest that a more circumspect view may be in order.

First is the microecological work pioneered by Dixon and colleagues (e.g., Dixon & Durrheim, 2003; Dixon, Tredoux, & Clack, 2005; Dixon, Tredoux, Durrheim, Finchilescu, & Clack, 2008; Tredoux & Dixon, 2009). This research points to the interconnectedness of contact and segregation, and to the reproduction of patterns of segregation at the microscale of everyday life. For instance, in Dixon and Durrheim's (2003) study of interactions of White and Black people on South African beaches, while the cooccurrence of Black and White beachgoers in physical space suggested that contact was occurring, careful inspection revealed stark segregation at the microscale, and evacuation of the space by White beachgoers when the beach became full. Similarly, in a study by Tredoux and Dixon (2009), segregation in nightclubs located in a busy city street in Cape Town appeared to be low, especially when determined at a demographic level, but high degrees of segregation were observed at the level of interpersonal or direct contact. These studies suggest that for contact to have positive effects, several other "enabling" factors need to be present—mere proximity or spatial contiguity is not enough to induce face-to-face interaction.

Second is a component of the survey work referred to above, which one might call "the epidemiology of contact" in South Africa. Several of these surveys show very low levels of contact between Black and White South Africans, and very low levels of crossrace friendship. For instance, in Gibson (2004), a near majority (>40%) of Blacks report very little contact of any kind with Whites, inside or outside of work settings, and in the case of social contact (e.g., contact in one's own home), more than 60% of Blacks (as opposed to 25% of Whites) report no contact at all (Gibson, 2004). In Gibson's (2004) survey, prevalence of interracial friendship in South Africa was estimated using a rating scale. He found that the majority of Black South Africans have no White friends at all, while only a small number of Whites (6.6%) report having "quite a number of Black friends" (p. 163). See also Durrheim and Dixon (this issue) for data from other national surveys.

In a recent longitudinal study conducted over a 6-month period, Schrieff, Tredoux, Finchilescu, and Dixon (2010) examined the formation of friendships among first-year university students in mixed race residences located in a university with a strong liberal reputation. Few students knew any other students on entrance. By the end of the study, 285 friendships had been formed of which only 51 were crossrace. Friendships developed mostly along race lines. This pattern of friendship choices was matched by starkly segregated seating patterns in the residence dining rooms. Even where there are opportunities, contact does not appear to occur and does not lead to crossrace friendships.

At the very least, these data should alert us to the recognition that contact between race or ethnic groups in South Africa is complicated, and that a drive to promote better intergroup relations through simple exposure seems unlikely to succeed. Such a drive contends with several hundred years of history: "It is hardly surprising after centuries of racial discrimination and a half-century of Apartheid that racial contact is awkward and avoided. The old norms are fading, but the new norms have yet to be firmly established" (Pettigrew, 2008, p. 295).

We suspect that societies such as South Africa, with recent histories of violent intergroup relations, political oppression, and institutionalized racism, may be exceptional cases. It seems likely to us that the necessary conditions identified by Allport in 1954 were particularly apt for the United States of those years, in which the vestiges of slavery and Jim Crow legislation were still firmly entrenched, particularly in the southern states. It also strikes us that Allport's necessary conditions may be apt for contemporary South Africa, where norms against interracial contact live on, despite having been struck down at the level of legislation.

An alternate response, as suggested by Finchilescu and Tredoux (2008), is that we need to understand the predictors of "contact failure"—either the failure of contact to occur, or for contact to have its anticipated effect of reducing prejudice. However, we cannot answer either form of this question on the basis of present data and published literature. There has been little work in South Africa on the

relationship between contact and prejudice, and much less again on the mediators or moderators of this relationship. It is an important society in which to study contact, not only because of the history of legally enforced segregation, but also because there are many potential moderators and mediators. The present study asks about some of these relations.

The variables we are interested in are not the classic necessary conditions set down by Allport. Several of these conditions are programmatic, in the sense that they suppose the commitment and support of an institution for intergroup contact, or that groups in contact share a common goal or purpose, and therefore cooperate toward achieving this, among other things. They are intended for programmatic intervention, and lend themselves to experimental and quasi-experimental research better than to surveys.

In the first instance, we were interested in the key construct "intergroup anxiety." Pettigrew and Tropp (2006) and Hewstone (2003) argue that understanding how contact reduces intergroup anxiety is an important theoretical task. In the present study we operationalized intergroup anxiety by asking respondents how they felt about contact with members of the outgroup.

Secondly, we were interested in the role that outgroup blame and metaperceptions might play. Thus, negative ingroup metastereotypes might predict ingroup prejudice (Finchilescu, this issue), and might also mediate the contact–prejudice relationship: Contact, especially high-quality contact, may dislodge or counteract the tendency of ingroups to suppose that the outgroup holds negative views of them, which is known to be associated with prejudice. Similarly, we were interested in the possibility that ingroups blame outgroups for the failure of the groups to make contact (Shelton & Richeson, 2005), and that this might also mediate the contact–prejudice relationship.

Two other potential mediators that we were interested in included strength of ingroup identification, and the percentage of crossrace friends that respondents reported having. The former variable is often postulated by social identity theorists as an important determinant of intergroup behavior, and may well mediate the effect of intergroup contact, as Pettigrew and Tropp (2006) explicitly acknowledge—for instance, ingroup members with very strong ingroup identification may avoid contact, and disrupt the contact–prejudice relation. The latter variable to some degree reflects the preexistence of positive contact with the outgroup, and the importance of intimate crossrace contact has long been recognized in the literature (cf. Pettigrew, 1998).

We have placed considerable emphasis thus far on the search for mediators of the contact–prejudice relation, but we also acknowledge that there may be moderators of the contact–prejudice relation in the set of variables we have chosen to study. In particular, we suspect that quality of contact may act as a moderator of the relation between amount of contact and prejudice—that is, for those participants who have high-quality contact with the outgroup,

there is likely to be a stronger relationship between amount of contact and prejudice.

Our analysis is of a large data set collected through a nonprobability Internet survey in 2006, on the campuses of four South African universities. We modeled two outcome variables in this study, namely affective prejudice and social distance. The choice of two outcomes was deliberate. The relations between predictors and prejudice seem to be stronger when affective prejudice is modeled, justifying the inclusion of an affective measure (cf. Finchilescu, Tredoux, Mynhardt, Pillay, & Muianga, 2007). Tropp and Pettigrew (2005, p. 1145) have recently argued for the importance of distinguishing cognitive and affective dimensions of prejudice, concluding that "affective dimensions of intergroup relationships are especially critical for understanding the nature of contact–prejudice effects." On the other hand, Bogardus-type social distance scales (Bogardus, 1925) have proved to be a good measure of intergroup attitudes in South Africa since the 1930s, and data collected in the present study keeps an ongoing long-term record of race relations in South Africa.

Method

Participants

The sample consisted of 2,559 students, who were recruited from four universities in South Africa. The students had a mean age of 24.1 years ($SD = 7.04$). Women made up 61% of the sample; and 41% of the participants were Black and 59% were White. The universities that students were drawn from have different histories and racial demographies (see Finchilescu et al., 2007, for further details). For present purposes we do not distinguish between the universities and simply point out explicitly that we are reporting results from a nonprobability sample. In particular, the sample is not nationally representative in terms of age, race, and income, being younger, majority White, and from wealthier environments. Nevertheless, there was considerable diversity within the sample, and it was considered suitable to our primary purpose of exploring the potentially mediating effect of a number of variables on the contact–prejudice relation.

Measures

Affective prejudice scale. Six bipolar adjectival continua made up this scale, each with a 7-point range. Respondents were asked to indicate their feelings toward the other group using each adjective continuum. High scores indicate high affective prejudice. This scale was originally proposed by Zanna (1994) and has been successfully used in South Africa in several studies. In this study, Cronbach's alpha was .87 for Black students and .90 for White students.

Social distance scale. This scale is based on that reported by Bogardus (1925). It consists of six items answered on a 5-point scale. The items measure the degree of physical and familial intimacy that respondents are willing to grant to another group. High scores indicate large social distance. Versions of this scale have been used in South Africa, over a number of years, and researchers invariably report good internal reliability. In the present survey, alpha was .88 for Black students and .87 for White.

Amount of contact with members of the outgroup. This scale consists of eight items, each on a 5-point scale, polling whether respondents have contact with the outgroup, in a number of explicit situations. High scores indicate high amounts of contact. A version of this scale was used by Holtman et al. (2005), and proved to have good reliability. In the present study, internal reliability (alpha) was .78 for Black students and .73 for White students.

(Poor) quality of contact with members of the outgroup. Six items measured the quality of contact experienced by respondents, with the outgroup, on a 5-point scale. High scores indicate poor quality of contact. The alpha coefficient for the present sample was .83 for White students and .81 for Black students. (We do not report the data for other important South African race categories in this article, e.g., Coloured, Indian). The total number of respondents in these categories was far fewer than for the White or Black groups, deemed too small for meaningful analysis).

Negative metastereotypes. This scale measures the degree to which respondents believe that the outgroup thinks badly of them due to their membership of their race group. (The scale has five pairs of bipolar adjectives, anchoring each side of a 6-point scale. High scores indicate high levels of perceived outgroup hostility. A version of this scale was used by Mohollola and Finchilescu (2006). The internal reliability (alpha) coefficient in the present survey was .89 (.90 for Black students, and .87 for White students).

Crossrace friends. This single item measures the proportion of crossrace friends. The specific wording was as follows: "Please indicate the percentage of your friends who belong to the Black, White, Indian and Coloured population groups (The percentage should add up to 100%)." No internal reliability estimate is possible, and we note here that since this is a single item, it is not a strong measure of crossrace friendship.

Identity. A 10-item scale based on that of Brown, Condor, Mathew, Ward, and Williams (1986) was used to measure respondents' strength of ingroup identification. High scores indicated strong identification. These items were each on

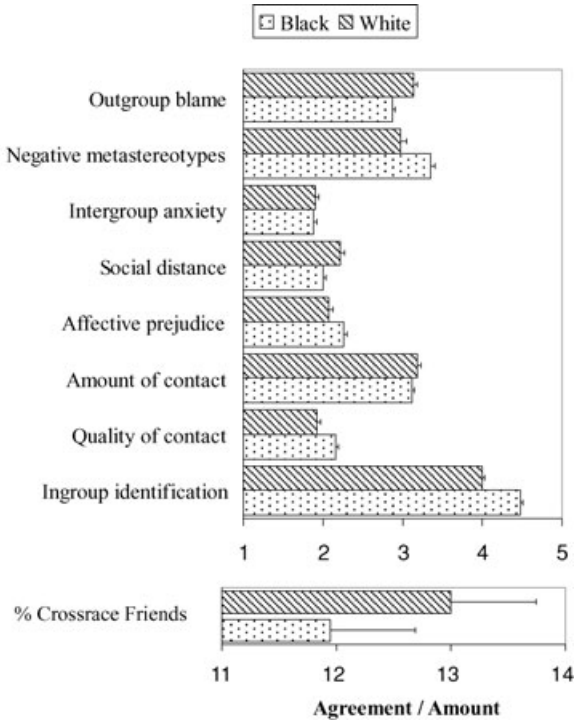
a 5-point scale. The alpha coefficient for the sample was .79 for White students, and .71 for Black students.

Intergroup anxiety. Four items were used to measure respondents' feelings about mixing with students from the other group, which we considered an operationalization of intergroup anxiety. High scores indicated high levels of negative feeling about contact, that is, high intergroup anxiety. These items consisted of pairs of bipolar adjectives separated by a 6-point scale. This scale was constructed for this survey, and was found to have good reliability. The alpha coefficient for the sample was .83 for Black students, and .91 for White students.

Outgroup blame (for contact avoidance). This measure consisted of three statements, on a 6-point Likert-type scale, suggesting that the blame for lack of interracial mixing lay with the outgroup. Respondents were required to express their agreement or disagreement with each statement (with the points identified as [1] *strongly disagree* to [6] *strongly agree*). Low scores indicate high outgroup blame. Reliability of the scale was acceptable, with a Cronbach's alpha of .74 for the White sample and .71 for the Black sample. See Finchilescu et al. (2007) for a more detailed account of this measure.

Procedure

Students were invited, via several routes, to complete an internet questionnaire. Where it was possible to get e-mail addresses, we made a mass posting of a notice inviting the students to complete the survey on an Internet site. We also issued notices through the login scripts of computers in laboratories, at lectures, and on notice-boards around the universities. A raffle for Rand (R) 1,000 (approximately US$140) was in addition offered as an incentive for completing the questionnaire. The respondents' e-mail address was captured in a separate file, so that the identity of the questionnaire respondent remained anonymous. There are potential problems with Internet surveys, and although we were able to make protective efforts in respect of some of the problems, this was not possible for all. Thus, we guarded against multiple submissions by the same student by requiring that students enter their student numbers as part of the survey data, and deleting duplicate submissions. There were very few of these, and those that occurred seemed to be in error rather than efforts to enter the survey twice. It is possible that students could have completed the survey in a "disengaged" manner (as one reviewer of this article suggested), simply in order to be entered into the lottery for the prize. We took standard precautions against response set (e.g., by reversing direction of scale items), but there is no fail-proof method of ensuring accurate self-report. This is as true for pen-and-paper surveys as it is for online surveys.



Note. T bars indicate 95% confidence intervals around individual means. Scores, apart from percentage crossrace friends, have been transformed to a 5-point scale.

Fig. 1. Mean levels of study variables, by race group.

Results

Figure 1 shows mean levels of study variables. Particularly notable here are (1) the low percentage of crossrace friends reported by both Black and White groups; (2) the very high levels of ingroup identification for both Black and White students; but particularly for Black students, (3) different patterns across race groups for outgroup blame/metastereotypes, and social distance/affective prejudice; and (4) moderately high self-reported quality of contact for both groups (high scores indicate low quality of contact.

Table 1 reports the intercorrelations of study variables. The correlations are frequently substantial in size and show a number of things. Contact—both in its quality, and in its amount—has sizeable and significant correlations with the outcome measures (affective prejudice and social distance). This is true for both Black and White participants, but the correlation between amount of contact and social

Table 1. Intercorrelations of Study Variables

	Ingroup Identification	Poor Quality of Contact	Amount of Contact	Affective Prejudice	Social Distance	Intergroup Anxiety	Negative Metastereotypes	Outgroup Blame
a) Black Participants ($n = 1{,}048$)								
Crossrace friends (%)	−.24*	−.29*	.52*	−.24*	−.07	−.31*	−.23	.21
Ingroup identification	—	−.03	−.05	.03	.05	.10*	.02	−.07
Poor quality of contact		—	−.38*	.64*	.28*	.55*	.39*	−.30*
Amount of contact			—	−.32*	−.17*	−.32*	−.28*	.21*
Affective prejudice				—	.34*	.55*	.44*	−.30*
Social distance					—	.37*	.21*	−.26*
Intergroup anxiety						—	.39*	−.33*
Negative metastereotypes							—	−.35*
b) White Participants ($n = 1{,}561$)								
Crossrace friends (%)	−.27*	−.26*	.48*	−.30*	−.26*	−.32*	−.26*	.24*
Ingroup identification	—	.14*	−.20*	.30*	.40*	.34*	.17*	−.28*
Poor quality of contact		—	−.38*	.63*	.38*	.57*	.38*	−.36*
Amount of contact			—	−.38*	−.32*	−.42*	−.28*	.29*
Affective prejudice				—	.53*	.70*	.50*	−.49*
Social distance					—	.61*	.34*	−.45*
Intergroup anxiety						—	.50*	−.53*
Negative metastereotypes							—	−.50*

Note. *$p < .01$.

distance is stronger for Whites than Blacks. For both groups, intergroup anxiety is strongly correlated with both contact variables, and with the outcome variables, for both groups, although a little more strongly for the White participants. The correlation coefficients in Table 1 are generally larger for White participants than Black participants (note that we do not report statistical significance of these comparisons, but any difference between two coefficients that is larger than .07 is statistically significant, at any values of the two correlations, given our sample size).

We considered the possible moderating effect of quality of contact on the relationship between amount of contact and prejudice, in accord with the rationale outlined in the introduction to this article. Tests of regression models that contained main and interaction effects revealed significant effects for quality of contact, and for the interaction between quality of contact and amount of contact, for both affective prejudice and social distance, but only for White participants (they were not significant for Black participants). For the interaction term the results were as follows: for affective prejudice, $F(1, 1{,}566) = 4.3$, $p<.039$, $\eta_p^2 = 0.003$, and for social distance, $F(1, 1{,}566) = 12.3$, $p < .0005$, $\eta_p^2 = 0.008$). In order to show the nature of this interaction, we constructed plots that charted the appropriate fitted regression lines for a tritile split of the variable measuring "amount of contact." These are shown in Figure 2.

We then wished to test each of the variables as potential mediators of the relation between contact and prejudice (both affective prejudice and social distance). Since there were a number of potential mediators, we identified subsets for mediation analysis with a preliminary regression analysis. The regression analysis served several additional purposes, namely (1) to identify variables that had direct effects on prejudice, even after partialling out the shared and indirect effects of a number of other variables; and (2) to identify potential models for further study and

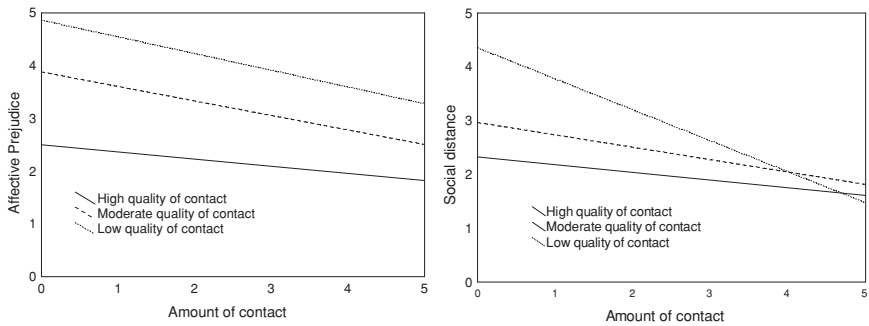


Fig. 2. Moderation of the relationship between quality of contact and prejudice, by amount of contact (White participants).

research, with an eye in particular to the differences between models developed on Black and White respondents that might manifest in the analysis. We entered variables in the following order: contact quality, and then contact amount (i.e., not as a block), and then each of the potential mediators, in the order corresponding to their zero-order correlations with the outcome variable at issue. At each step, the change in model R^2 was tested for statistical significance, and the variable in question was retained if the change was significant. (We should note that this is hierarchical regression in the sense of a set of planned, forward steps, but the sequence is based on a preliminary analysis, rather than on theoretical precedence). Table 2 reports the final models for the Black and White groups, for each of the prejudice outcomes.

Table 2 shows that at least three of the models resolved a moderately high amount of variance. The modeling attempt was less successful when social distance was used as the outcome variable, particularly for Black participants. The contact variables had weaker direct effects in this analysis, and, indeed, amount of contact ceased to have any unique predictive power in any of the four models. Quality of contact had robust direct effects when affective prejudice was the outcome, for both Black and White participants, but these were substantially reduced when social distance was the outcome. Intergroup anxiety, indexed here as "negative feelings about contact" had direct effects that were equally strong to those for quality of contact, and seemed particularly important in the case of the social distance measure of prejudice.

Having identified a number of potentially important mediators of the contact–prejudice relation, we conducted mediation analyses for each of the variables that

Table 2. Regression Models from Hierarchical Regression Analysis

	White Participants		Black Participants	
	Affective Prejudice	Social Distance	Affective Prejudice	Social Distance
Model summary	$R^2 = .59$, $F(5, 1{,}564) = 465.90^{***}$	$R^2 = .42$, $F(4, 1{,}565) = 287.0^{***}$	$R^2 = .49$, $F(3, 1{,}049) = 336.01^{***}$	$R^2 = .17$, $F(3, 1{,}049) = 279.71^{***}$
Intergroup anxiety	$.38^{***}$	$.43^{***}$	$.24^{***}$	$.28^{***}$
Amount of contact	—	—	—	—
Poor quality of contact	$.32^{***}$	$.05^{*}$	$.44^{***}$	$.09^{**}$
Negative metastereotypes	$.14^{***}$	—	$.17^{***}$	—
Ingroup identification	$.08^{***}$	$.20^{***}$	—	—
Outgroup blame	$-.08^{***}$	$-.15^{***}$	—	$-.14^{***}$

Note. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.
Nonsignificant entries are shown as dashes (—). Values in the table are standardized regression coefficients.

remained in the final regression models of Table 2. That is, we wished to establish for each of the variables whether it acted as a mediator of the contact quality → prejudice, and contact quantity → prejudice, relations. Collection of regression coefficients from separate regression analyses allowed us to compute Sobel tests of the mediator relation. Tables 3 and 4 report the results of the mediation analysis, as well as direct effects of potential mediators in the three variable equations. All results are reported separately for Black and White participants.

Several things are clear from the table. Firstly, when affective prejudice is the outcome measure, the effect of quality of contact is fairly robust. It has a direct effect on affective prejudice, notwithstanding partial mediation by almost all of the other study variables. The direct effect of quality of contact never drops below .34, and its median value is .55, across Black and White participants. In the case of social distance, the direct effect for quality of contact is present, but is strongly mediated: for the White sample, the effect of quality of contact is almost entirely mediated by intergroup anxiety, and a similarly strong, but partial, mediation is present for the Black sample.

The pattern of mediation effects for contact quantity is similar, but intergroup anxiety is a particularly potent mediator in all models. Negative metastereotypes and outgroup blame also prove to be consistently strong mediators. Contact quantity retains direct effects in all but one of the models, but it should be noted that the regression analysis showed that it retained no direct effects at all once multiple mediators were included in the regression models.

Discussion

Tests of contact theory in South Africa in the apartheid era provided very little, or ambiguous support for the notion that contact can reduce intergroup prejudice. There have been few tests of this relation in postapartheid South Africa, and the present results are therefore a useful corroboration of the general relation in the literature, that is, that greater contact between ethnic groups is associated with lower ethnocentrism and racial prejudice. In the present survey, we found significant and moderately high correlations (from $|r| = .17$ to $|r| = .65$) between self-reported contact and two different measures of prejudice. This varied according to whether the outcome was affective prejudice, or social distance, and correlations were generally a little lower for Black respondents. It is of course not clear how one should interpret this historical change in the contact–prejudice relationship, but it is certainly tempting to conclude that favorable sociopolitical conditions are necessary for contact to have positive effects. Alternatively, one might argue that it is only since the dissolution of apartheid that race groups have had opportunities for thoroughgoing contact in South Africa.

The contact hypothesis, as originally formulated, and as widely understood, posits a relationship between the amount of contact and decreases in prejudice

Table 3. Mediator Analysis of the Contact–Prejudice Relationship: Contact Quality

	White Respondents						Black Respondents					
	Affective Prejudice			Social Distance			Affective Prejudice			Social Distance		
Mediator	Z	β (mediator)	β (quality)	Z	β (mediator)	β (quality)	Z	β (mediator)	β (quality)	Z	β (mediator)	β (quality)
Poor quality (zero order)			.63***			.38***			.64***			.28***
Crossrace friends (%)	6.15***	−.15***	.59***	5.88***	−.17***	.34***	2.26***	−.06*	.62***	−.28	.01	.29***
Identity	4.99***	.22***	.60***	5.26***	.35***	.33***	−.88	.05	.64***	−.87	.06	.29***
Negative metastereotype	11.26***	.31***	.51***	8.09***	.23***	.29***	7.53***	.22***	.55***	3.55***	.12***	.24***
Intergroup anxiety	18.42***	.50***	.34***	17.9***	.58***	.05*	9.35***	.28***	.48***	8.45***	.31***	.12***
Outgroup blame	10.73***	−.30***	.52***	10.8***	−.36***	.25***	4.32***	.18***	.60***	5.44***	.2***	.23***

Note. $^{*}p < .05$, $^{***}p < .001$.

Table 4. Mediator Analysis of the Contact–Prejudice Relationship: Contact Quantity

	White Respondents						Black Respondents					
	Affective Prejudice			Social Distance			Affective Prejudice			Social Distance		
Mediator	Z	β (med.)	β (quantity)	Z	β (med.)	β (quantity)	Z	β (med.)	β (quantity)	Z	β (med.)	β (quantity)
Quantity (zero order)			−.38***			−.31***			−.32***			−.17***
Crossrace friends (%)	−5.68***	−.16***	−.31***	−4.85***	−.14***	−.25***	−3.0*	−.1*	−.27***	.44	.02	−.18***
Identity	−6.24***	.23***	−.34***	−7.06***	.35***	−.25***	−.19	.006	−.32***	−.91	.04	−.17***
Negative metastereotype	−10.03***	.43***	−.26***	−8.15***	.28***	−.24***	−7.85***	.38***	−.21***	−4.9***	.18***	−.19***
Intergroup anxiety	−15.92***	.65***	−.11***	−14.9***	.57***	.08***	−9.54***	.5***	−.16***	−8.11***	.36***	−.06
Outgroup blame	−10.0***	−.41	−.26***	−9.74***	−.39***	−.20***	−5.39***	−.24***	−.27***	−5.26***	−.24***	−.12***

Note. $^{*}p < .05$, $^{***}p < .001$.

or ethnocentrism. We were interested in addition in the quality of subjective experience of contact. In our study, quality of contact was more strongly correlated with prejudice than the self-reported amount of contact. Moreover, it appeared to exert its effects more directly than quantity of contact—this was shown in particular by the mediation analysis, where the effects of amount of contact appear to be completely mediated by other variables, whereas quality of contact was partially mediated, but retained significant direct effects in all analyses.

Interestingly, we uncovered a moderator effect between amount and quality of contact on both affective prejudice and social distance for the White participants. That is, the relationship between amount of contact and the prejudice variables was moderated by the quality of contact—more contact led to lower prejudice, but this tendency was more pronounced when the quality of contact was low. It is noteworthy that in the case of affective prejudice, the relationship between amount of contact and prejudice was small, and nonsignificant, for high quality of contact. This somewhat counterintuitive finding—when respondents report having relatively poor quality intergroup contact, then increased amount of contact is more strongly associated with lower levels of prejudice—needs explanation. One possible explanation is that this relationship describes a group of respondents who have had little prior contact to the outgroup, typically of poor quality, and who may have had high preexisting levels of prejudice. For this group, intergroup contact is particularly effective, and the change in prejudice particularly steep as contact increases. Conversely, this means that intergroup contact becomes decreasingly effective as respondents experience more of it, pushing up the experienced quality of contact. This surprising relation is certainly worthy of further investigation.

Two anonymous reviewers have raised the question of whether the constructs (and measures) of prejudice and quality of contact can properly be conceived as independent, and whether some of the high correlations we observe between quality of contact and prejudice are a consequence of this. We believe that the constructs are clearly separable: a desire to deny outgroup members a place in the same school or organization as oneself, for instance, is not the same thing as experiencing contact with outgroup members as negative. The contact hypothesis, as specified by Allport (1954), explicitly indicates the importance of quality of contact in the notion of "optimal conditions" under which contact should occur if it is to reduce prejudice. As far as the particular measures of prejudice are concerned, it seems very clear to us (from item inspection) that the social distance and quality of contact scales measure different things. The correlation between the two measures is in addition modest (.28). The measures of affective prejudice and quality of contact are perhaps less clearly independent. Both measures use a semantic differential format (a scale anchored by opposing adjectives that describe the respondent's feelings about contact with the outgroup, or feelings toward the outgroup. Specifically, the former asks respondents "I feel the following way toward White people in general," and then presents six bipolar items, whereas

the latter asks "How would you describe the nature of your communication and interaction with White people?" These instructions appear to us to clearly separate the constructs of "nature of contact" and "feelings toward the outgroup in general," but we cannot say whether respondents conflated them or not. The correlation between quality of contact and affective prejudice is moderately high ($r = -.64$), and although this might suggest overlap of construct meaning, there is no way to tell whether this is indeed so, or whether quality of contact is just strongly related to prejudice.

In our analysis, several variables mediated the effects of contact. Perhaps the clearest and strongest mediator was anxiety about intergroup contact. This variable was a significant mediator of the contact–prejudice relation for both operationalizations of prejudice (affective prejudice and social distance), for both Black and White respondents (although it seems to have been stronger, on average, for Whites). In the regression analysis, it accounted for as much variance, and usually more, than any other variable, including quality of contact, even after partialling out shared variance. This is in accord with the significance attached to the construct of intergroup anxiety by Stephan et al. (2002), Hewstone (2003), and others. It appears to be a central route or mechanism, higher levels of contact reducing intergroup anxiety, and this in turn lowering prejudice. Of course, it should be noted that mediation analysis cannot ordinarily solve the vexed question of direction of causality, which is always an issue with ex post facto designs. High levels of affective prejudice could result in high levels of intergroup anxiety just as easily as the reverse, particularly at low levels of contact.

Another central variable in the reduction of intergroup prejudice, in classic contact theory, is the presence of intergroup friendship. We found low levels of intergroup friendship in the present study, even though all our respondents were university students, and most would have had excellent opportunities to make friends across race and ethnic lines. Self-reported percentage of intergroup friends was a significant (but weak) mediator of the contact–prejudice relationship for White participants (for both operationalizations of prejudice), but not for Black respondents. It did not have any direct effects in the regression analysis for White or Black respondents, once it competed with other variables for unique explanatory variance. This may be due to its being a single-item measure, and we are reluctant to make too much of its small role in our study.

Many of the other variables we considered also acted as mediators, and exerted direct effects on the prejudice variables, in several of our analyses. Although strength of group identification was a significant mediator of the contact–prejudice relationship for White respondents, it did not do so in the case of Black respondents. However, as we pointed out earlier, identification scores showed low variability, particularly for the Black sample, and this may have masked a potential mediating relationship. A more sensitive measure of group identification may reveal mediation. Although the levels of identification are strikingly high, and almost

at ceiling, for Black respondents, this is not very surprising in the light of the common history of political oppression that Black South Africans share, and of the unifying identity forged across language and ethnic lines among Black South Africans in order to resist the apartheid government.

Degree of negative metastereotype was a significant mediator of the contact-affective prejudice relationship, for both Black and White respondents, but not of the contact-social distance relationship, for either group. The role of metaperceptions—in this case, the perception that the outgroup holds a negative view of oneself due to one's group membership—in exacerbating or reducing prejudice, particularly in concert with intergroup contact, is understudied, and promises to be a fruitful line of future research.

We used two operationalizations of prejudice in this study, namely affective prejudice, and social distance. We motivated this choice on the basis of the different sets of findings reported in earlier research in South Africa and in other countries, and present results underscore the differences between these dependent variables. Perhaps most striking for us was the differential importance of contact quality as a predictor of each, particularly once the contact–prejudice relationship was mediated by other important variables: thus, contact quality retained strong direct effects on affective prejudice, even when the shared variance with more than four additional variables was partialled, whereas the direct effects of quality of contact on social distance were greatly reduced in size when shared variance was partialled with the same set of variables.

A dominant theme in this article has been the role of ancillary variables in the contact–prejudice relation. On the one hand, such ancillary variables can be read in terms of the central Allportian dogma, that is as (necessary) conditions which enable the prejudice-lessening effects of intergroup contact. Although Pettigrew and Tropp (2006) have argued that these conditions facilitate, but are not necessary to, positive effects of contact, we have speculated that in contexts such as apartheid South Africa, or the Jim Crow era in the southern United States, they are likely to be necessary. This may explain why contact studies in apartheid South Africa usually failed to unearth a contact–prejudice relation, although we concede that this assertion is largely untestable. Another way of thinking about ancillary variables is in terms of mediating and moderating effects, or direct and indirect effects, and we have provided several instances of variables that mediate and moderate the contact–prejudice relation. An understanding of the way that these ancillary variables affect the contact–prejudice relationship is an important goal for contact theory as a whole, and for our own continuing research project.

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