Personality and Social Psychology Bulletin

The Contact Caveat : Negative Contact Predicts Increased Prejudice More Than Positive Contact Predicts Reduced Prejudice

Fiona Kate Barlow, Stefania Paolini, Anne Pedersen, Matthew J. Hornsey, Helena R. M. Radke, Jake Harwood, Mark Rubin and Chris G. Sibley

Published by:

⑤SAGE

On behalf of:

**SP
SP**

Society for Personality and Social Psychology

Additional services and information for *Personality and Social Psychology Bulletin* can be found at:

Email Alerts: http://psp.sagepub.com/cgi/alerts

Subscriptions: http://psp.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

>> OnlineFirst Version of Record - Aug 31, 2012

What is This?

The Contact Caveat: Negative Contact Predicts Increased Prejudice More Than Positive Contact Predicts Reduced Prejudice

Fiona Kate Barlow[1], Stefania Paolini[2], Anne Pedersen[3], Matthew J. Hornsey[1],
Helena R. M. Radke[1], Jake Harwood[4], Mark Rubin[2], and Chris G. Sibley[5]

Abstract

Contact researchers have largely overlooked the potential for negative intergroup contact to increase prejudice. In Study 1, we tested the interaction between contact quantity and valence on prejudice toward Black Australians (n = 1,476), Muslim Australians (n = 173), and asylum seekers (n = 293). In all cases, the association between contact quantity and prejudice was moderated by its valence, with *negative* contact emerging as a stronger and more consistent predictor than positive contact. In Study 2, White Americans (n = 441) indicated how much positive and negative contact they had with Black Americans on separate measures. Although both quantity of positive and negative contact predicted racism and avoidance, negative contact was the stronger predictor. Furthermore, negative (but not positive) contact independently predicted suspicion about Barack Obama's birthplace. These results extend the contact hypothesis by issuing an important caveat: Negative contact may be more strongly associated with increased racism and discrimination than positive contact is with its reduction.

Since the official desegregation of American schools and communities in the 1950s and 1960s, and increasing racial integration across the Western world, public sentiment has largely rejected race-based separation as a viable way of negotiating intergroup relations. Civil rights advances were followed by an increase in formal and informal intergroup contact, and support for both. The empirical research to date suggests that such contact encourages social cohesion—Intergroup contact is reliably associated with decreases in prejudice and social distance (e.g., Barlow, Louis, & Hewstone, 2009; Hewstone et al., 2005; Paolini, Hewstone, & Cairns, 2007; Paolini, Hewstone, Cairns, & Voci, 2004; Pettigrew & Tropp, 2006).

There is, however, an aspect of intergroup contact about which contact theorists remain largely silent. Despite the considerable evidence suggesting that intergroup contact begets tolerance (see Pettigrew & Tropp, 2006), racially diverse areas in which contact is presumably common often show the highest levels of intergroup antipathy (e.g., Ayers, Hofstetter, Schnakenberg, & Kolody, 2009; Cernat, 2010; Quillian, 1995, 1996; Stein, Post, & Rinden, 2000). One explanation for this pattern may be that racially diverse neighborhoods expose people to negative as well as positive intergroup contact, and that this negative contact increases

prejudice. Although Allport (1954) and his successors have always recognized that not all forms of intergroup contact will improve intergroup attitudes, there has been very limited empirical investigation into the potentially corrosive association between negative contact and prejudice (for a similar point, see Pettigrew, 2008; Pettigrew & Tropp, 2006). In addition, to our knowledge, nobody has tested whether contact quantity and contact valence interact to predict prejudice, and specifically whether quantity of negative contact is more strongly linked to increased prejudice than quantity of positive contact is to its reduction.

In the present article, we aim to fill this empirical gap. Specifically, we propose that there is a positive–negative

[1]The University of Queensland, Brisbane, Australia
[2]The University of Newcastle, Australia
[3]Murdoch University, Perth, Australia
[4]University of Arizona, Tucson, USA
[5]The University of Auckland, New Zealand

Corresponding Author:
Fiona Kate Barlow, School of Psychology, University of Queensland, Brisbane, Queensland 4072, Australia
Email: f.barlow@psy.uq.edu.au

asymmetry such that the relationship between contact and prejudice should be stronger when the contact is *negative* than when it is *positive* (as per theorizing by Paolini, Harwood, & Rubin, 2010). In other words, we predict that negative contact will increase prejudice significantly more than positive contact decreases prejudice. We argue that this asymmetry helps to explain attitudinal homeostasis in the face of increased intergroup contact and integration: Any reductions in prejudice associated with positive contact may be counteracted by increases in prejudice that co-occur with (even limited amounts of) negative contact.

In Study 1, using data from seven Australian studies, we first tested our hypothesis that the relationship between contact quantity and prejudice is moderated by contact valence. In Study 2, using data from a White American sample, we aimed to replicate and extend the findings of Study 1 by independently measuring the amount of positive and negative contact White Americans reported having with Black Americans. We then regressed these on measures of racism, avoidance, and a timely social issue—suspicion about the birthplace of Barack Obama.

The Contact Hypothesis

Allport (1954) proposed that contact between members of traditionally opposed racial groups could reduce intergroup prejudice. Intergroup contact, however, is a varied phenomenon (e.g., Christ, Ullrich, & Wagner, 2008; Pettigrew, 2008). Thus, Allport proposed that intergroup contact would *only* work to reduce prejudice when it was "optimal." Optimal contact, according to Allport, is characterized by four key factors: The contact is sanctioned by relevant authorities, it is cooperative, people engaged in contact are working toward common goals, and people engaged in contact have equal status.

Research on the contact hypothesis suggests that although various factors influence the degree to which contact is associated with reduced prejudice, it is typically linked to improved intergroup attitudes. In their meta-analysis of 713 studies, Pettigrew and Tropp (2006) showed that contact generalizes beyond the situation to the entire outgroup in most cases. They found that contact under optimal conditions is associated with larger reductions in prejudice ($r = -.29$) than contact under suboptimal conditions ($r = -.20$); however, both show relatively consistent links with prejudice reduction. Intergroup contact seems to work primarily through three mediators—knowledge, empathy, and intergroup anxiety (Pettigrew & Tropp, 2008)—although by far the strongest is intergroup anxiety.

Attitudinal Homeostasis Despite Increasing Intergroup Contact

Overall, the logical extrapolation of this body of research is that we should have seen marked declines in prejudice over the last 40 to 50 years. These years have seen the civil rights movement and subsequent desegregation of schools, communities, and workplaces, as well as increased human mobility. Indeed, one would expect that even with a modest association between generic contact and prejudice, increasing ethnic diversity throughout the Western and European world (and thus increased contact quantity; see Bouma-Doff, 2007), should have prompted a near floor effect on prejudice and discrimination. This has not happened, however. Although some research shows a decrease in prejudice in multicultural geographical areas (e.g., Wagner, Christ, Pettigrew, Stellmacher, & Wolf, 2006; Wagner, van Dick, Pettigrew, & Christ, 2003; and to some degree, Laurence, 2011), a growing body of research shows that prejudice is positively correlated with ethnic diversity (e.g., Ayers et al., 2009; Cernat, 2010; Putnam, 2007; Quillian, 1995, 1996; Stein et al., 2000). Further to this, we have shown that minority group members who live in neighborhoods that are densely populated with majority group members fail to show an association between contact and outgroup prejudice (Barlow, Hornsey, Thai, Sengupta, & Sibley, 2012). So, within a contact framework, how do we explain such attitudinal homeostasis (or even decline) despite increasing intergroup contact? The answer can potentially be found in a positive–negative asymmetry in the relationship between contact and prejudice.

Positive–Negative Contact Asymmetry

Although it may seem intuitive to propose that co-occurring negative contact may dull the effects of positive contact on prejudice, we do not currently have a satisfactory evidence base to confirm this. In fact, Pettigrew and Tropp (2006, p. 767) noted that "factors that curb contact's ability to reduce prejudice are now the most problematic theoretically, yet the least understood. These negative factors . . . deserve to become a major focus of future contact research" (see also Pettigrew, 2008). This may especially be the case given the vast body of research showing that we typically weight negative information more heavily than positive information (see Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001, for a review). Bad impressions, negative stereotypes, and detrimental experiences are all more memorable and influential than their positive counterparts ("bad is stronger than good").

Paolini and colleagues (2010) recently heeded Pettigrew and Tropp's (2006) call for research investigating negative factors that hinder the beneficial effects of contact. They conducted two studies in which they manipulated contact valence (positive vs. negative) and measured its impact on category salience (i.e., the degree to which interaction partners are aware of their own and others' group membership). The authors found that group membership was most salient in the negative contact condition, and that negative contact led to increased chronic and episodic salience over time. They term this phenomenon the *valence–salience* effect,

whereby a negative interaction makes intergroup categories more salient. Given that categories must be salient for intergroup contact to generalize to the outgroup (for a review, see Brown & Hewstone, 2005), and negative contact makes categories more salient, Paolini and colleagues' data suggest that negative contact may have a greater capacity to increase prejudice than positive contact has to decrease it.

However, as Paolini and colleagues' data focused on category salience, the difference in the strength of the association between positive contact and prejudice—as compared with negative contact and prejudice—remains untested. A recent investigation by Pettigrew and colleagues (see Pettigrew, 2008; Pettigrew & Tropp, 2011) has provided an indirect comparison of positive and negative contact. In German data from the general community, Pettigrew and colleagues compared positive and negative contact as predictors of prejudice toward foreigners. Pettigrew and Tropp (2011) measured positive contact using a range of items that tapped into friendship with foreigners, interesting interactions, and helping behavior. Negative contact, however, was measured by a single-item proxy, "How often has a foreigner pestered you?" In this research, the authors found that positive contact was a better predictor of antiforeigner prejudice than was negative contact. Although informative, this article does not allow for a stringent comparison of positive versus negative contact as predictors of prejudice. Like positive contact, negative contact is a multifaceted phenomenon that cannot be distilled into a single experience, such as being pestered (note that 65% of participants reported never having been pestered). Rather, *any* intergroup contact in which the parties involved feel uncomfortable, angry, scared, and so forth are likely to compound on people's overall experience and therefore should be considered. In short, people's experiences of negative contact (like positive contact) cannot be characterized by a specific incident; rather, it is the *overall* perceived valence of interactions with outgroup members that classes them as such.

W. G. Stephan and colleagues (W. G. Stephan et al., 2002; C. W. Stephan, Stephan, Demitrakis, Yamada, & Clason, 2000) have measured multiple types of negative contact (e.g., being threatened, physically harmed, exploited, put down, etc.). They found that negative contact predicted White Americans' prejudice toward Black Americans (W. G. Stephan et al., 2002) and women's negativity toward men (C. W. Stephan et al., 2000). However, without a corresponding measure of positive contact, it is impossible to compare the two as competing predictors of people's intergroup attitudes or test how frequently each occurs.

In sum, the present research is the first to comprehensively test positive versus negative contact as predictors of prejudice simultaneously, with a view to assessing whether the association between negative contact and prejudice outweighs the association between positive contact and tolerance. We predict a *positive–negative asymmetry effect* and argue that this helps to explain attitudinal homeostasis despite increasing ethnic and cultural diversity.

Hypotheses

The literature reviewed above suggests testable hypotheses about contact quantity and contact valence as predictors of prejudice.

> *Hypothesis 1:* The impact of contact quantity on prejudice will be moderated by contact valence such that (a) when contact valence is *positive*, contact quantity will be negatively related to prejudice (i.e., contact is beneficial) and (b) when contact valence is *negative*, contact quantity will be positively related to prejudice (i.e., contact is detrimental).
>
> *Hypothesis 2:* The relationship between contact quantity and prejudice will be stronger when contact is negative than when it is positive (i.e., *positive–negative contact asymmetry*).

We tested these hypotheses over two studies, first looking at contact quantity, valence, and their interaction as a predictor of prejudice over seven Australian samples (Study 1). We then follow this up by using separate indices of the quantity of positive and negative contact as predictors of prejudice toward Black Americans in the U.S. context (Study 2).

Study 1

To test our hypotheses, we aggregated data from three independent laboratories across Australia, in three different states. Surveys that contained measures of contact quantity and valence, as well as an index of prejudice toward ethnic-based outgroups, were selected. For our main analyses, we found seven studies that included measures of attitudes toward Black Australians. One of these studies also contained contact and prejudice measures in relation to Muslim Australians, and another of the studies also contained contact and prejudice measures in relation to asylum seekers in Australia. Thus, we could test our hypotheses with three target outgroups. Below we briefly detail the context in which our data were measured.

The Target Outgroups

In Australia, Black Australians are severely disadvantaged in comparison with the majority group (i.e., White/European Australians). Here, we define Black Australians as Aboriginal Australians and African Australians. After Australia's colonization in 1788, Aboriginal people suffered centuries of institutionalized discrimination. Today, Aboriginal people are severely disadvantaged in comparison with non-Aboriginal people. They are more likely to be unemployed, live in inadequate housing, suffer from poor physical and mental health, and self-harm or commit suicide (Australian Human Rights Commission [AHRC], 2008). African Australians, likewise, have serious issues to

Table 1. Sample Details by Study

Study details	n	n (final)	Percentage missing	Sample characteristics	Target outgroup/s
Pedersen and Griffiths (2006)	210	202	4	Non-Black, non-Muslim, community adults	Aboriginal Australians (and Muslim people in ancillary analyses)
Khan and Pedersen (2010)	184	161	12	Non-Black, community adults	African Australians
Smith and Pedersen (2009)	114	103	10	Non-Black, community adults	Aboriginal Australians
Paolini (2003)— Main study	92	92	0	Non-Black, students	Black Australians
Pedersen and Watt (2004)	654	612	6	Non-Black, non-asylum seeker, community adults	Aboriginal Australians (and asylum seekers in ancillary analyses)
Barlow, Louis, and Hewstone (2009)	272	272	0	White students	Aboriginal Australians
Paolini (2003)— Pilot study	34	34	0	Non-Black, students	Black Australians
Total	1,560	1,476	5		

contend with such as housing, health, and education (Office of Multicultural Interests, 2009).

Although our primary analyses focus on explaining the role of contact in predicting prejudice toward Black Australians, we extend our analyses to subsets of the data that included measures of contact and prejudice toward two other disadvantaged ethnicity-based groups within Australia: Muslims and asylum seekers. Approximately 2% of Australia's population identify as Islamic (AHRC, 2008). These Muslim Australians, like their counterparts in Europe and the United States, have faced increasing levels of prejudice as a result of the September 11 attacks, as well as subsequent terrorist attacks in Europe and Asia, and the NATO-led invasion of Afghanistan and Iraq (Griffiths & Pedersen, 2009). Asylum seekers are people who are claiming refugee status but whose claim for asylum within Australia has not yet been approved. Asylum seekers within Australia typically enter from the Middle East, Africa, and Asia, and seek refuge on the basis of religious or ethnic persecution. Australia has a mandatory detention policy that processes those asylum seekers who arrive by boat offshore. Both the detainment and living conditions of asylum seekers, particularly in the case of children, are inconsistent with international law (AHRC, 2008). Asylum seekers face high levels of prejudice in the general community (Pedersen, Attwell, & Heveli, 2005), which is at the same time sanctioned and reinforced by the Australian Government (Pedersen, Watt, & Hansen, 2006).

Method

Sampled studies and participants. A total of 1,560 people participated in the seven studies that we report on. Approximately 5% of participants did not report on either contact quantity or valence, or prejudice toward Black Australians, or some combination of these. As such, we used listwise deletion and excluded these participants from analyses. Complete data were available for 1,476 participants, all of whom self-identified as Australian. Participants were either undergraduate students or members of the general community. Refer to Table 1 for information on research teams, sample characteristics, and target outgroups by sample.

Measures. Where reliable multiple indices of contact quantity, contact valence, or prejudice existed, they were averaged together to form single indices. To account for different tools and metrics throughout the different studies, all measures were recoded so that they ranged between 1 (*low levels of contact quantity, negatively valenced contact*, and *prejudice*, respectively) and 10 (*high levels of contact quantity, positively valenced contact*, and *prejudice*, respectively). Details on the original measures and scales used in the studies are detailed in Table 2.

Procedure. Data were collected over an 8-year period (2003-2010), from three urban centers and two regional areas. In all cases, participants completed questionnaires that gauged their degree of contact quantity and valence with our focal outgroup (i.e., Black Australians), and filled out a measure (or measures) of prejudice toward this group. As stated above, in one of the studies included in the main analysis (Pedersen & Griffiths, 2006), participants also filled out similar measures regarding contact with, and prejudice against, Muslim people. In another study, participants also completed measures regarding contact with, and prejudice against, asylum seekers (Pedersen & Watt, 2004).

Results

Overview of data structure and analyses. For the seven data sets focusing on attitudes toward Black Australians, we

Table 2. Variable Measurement Details by Study for the Study 1 Primary MRCM

Study	Contact quantity	Contact valence	Prejudice
Pedersen and Griffiths (2006)	1 item: "We are interested in how much contact you have had with Aboriginal Australians" (0 = *none* to 6 = *a lot*)	1 item: "Has this contact generally been positive or negative?" (0 = *negative* to 6 = *positive*)	Average of scores on the 18-item ATIA Scale (Pedersen, Beven, Walker, & Griffiths, 2004; α = .91) and ratings on a FT. The ATIA Scale includes direct (e.g., "Politically correct do-gooders allow Aboriginal people to get away with just about anything") and reverse scored (e.g., "Aboriginal people work as hard as anybody else") items. Responses range from 1 to 7 with higher scores indicating greater prejudice. The FT ranges from 1 (*extremely unfavorable*) to 100 (*extremely favorable*)
Khan and Pedersen (2010)	1 item: "We are interested in how much contact you have had with Black African people who have immigrated to Australia" (0 = *none* to 6 = *a lot*)	1 item: "Has this contact generally been positive or negative? (0 = *negative* to 6 = *positive*)	Average of the ATBAI Scale (Khan & Pedersen, 2010; α = .90) and a FT. Responses on the ATBAI ranged from 1 to 7 with higher scores indicating greater prejudice. The FT ranges from 1 (*extremely unfavorable*) to 100 (*extremely favorable*)
Smith and Pedersen (2009)	4 items (α = .88) adapted from Prestwich, Kenworthy, Wilson, and Kwan-Tat (2008). Participants were asked, "Thinking of social contact—whether at home, or at work, or somewhere else—how much contact do you have with Aboriginal people in general?" They were presented with extra items measuring amount of contact in three contexts: at meetings or events, just chatting to people, and over all social situations (0 = *none at all*, 6 = *a great deal*)	4 items (α = .88): As in the contact quantity questions, scenarios were presented (e.g., at meetings or events, just chatting to people) and participants were asked, "Was this contact generally positive or negative?" (0 = *negative* to 6 = *positive*)	Average of a scale measuring AAP Scale (adapted from Wright, Aron, McLaughlin, & Ropp, 1997; α = .92) and a FT. The AAP is a 5-item scale where 1 = *strongly unprejudiced* and 6 = *strongly prejudiced*. The FT ranged from 1 (*extremely unfavorable*) to 100 (*extremely favorable*)
Paolini (2003)—Main study	2 items (r = .21): quantity of generic contact ("contact had"), 0-100; quantity of generic contact ("time spent"), 0-100	4 items (α = .66): valence of generic contact (e.g., "Was the meeting enjoyable?"), 0 (*not at all*) to 100 (*very much so*)	An average of the GES, a FT, and modern racism measure. The GES asked participants to indicate how they felt about Black individuals over 6 items (warm/cold, negative/positive; friendly/hostile; suspicious/trust; respect/ contempt; admiration/disgust; α = .95). The FT ranged from 1 (*extremely unfavorable*) to 100 (*extremely favorable*). Modern racism was measured by 4 items adapted from McConahay (1986, α = .52)
Pedersen and Watt (2004)	1 item: "We are interested in how much contact you have had with Aboriginal Australians" (0 = *none* to 6 = *a lot*)	1 item: "Has this contact generally been positive or negative?" (0 = *negative* to 6 = *positive*)	The ATIA Scale (18 items, α = .91)
Barlow, Louis, and Hewstone (2009)	4 items (α = .78): "Indicate how many Aboriginal Australians you have had two or more conversations within the last 6 months?" (0 to more than 10), "How often do you meet up, or talk to, with Aboriginal Australians in general?" (1 = *never* to 6 = *once a day*), "Think about the different interactions you have had with people so far this semester. What percent of your interactions have been with Aboriginal Australians?" (0% to 100% with 10% incremental steps), and "In the last month, how many times have you interacted with Aboriginal Australian people in general?" (0 to more than 10)	1 item: "How often do you meet up, or talk to, Aboriginal friends?" (1 = *never* to 6 = *once a day*)[a]	Measured by an average of old-fashioned racism (α = .87) and modern racism (α = .84). Thirteen items adapted from Walker (1994) assessed old-fashioned racism (e.g., "Aboriginal Australians come from less able races, and this explains why they are not as well off as most White/ European people"). Three items were reverse scored (e.g., "I would be willing to have sexual relations with an Aboriginal person"). Modern racism was measured using a 13-item scale adapted from McConahay (1986). Ten items were positively scored (e.g., "Many ethnic groups have come to Australia and worked their way up, and Aboriginal Australians should do the same without any special favor") and three were reverse scored (e.g., "It is easy to understand the anger of Aboriginal people today in Australia"). Responses scales for all items ranged from 1 = *strongly disagree* to 9 = *strongly agree.*
Paolini (2003)—Pilot study	1 item: "We are interested in how much contact you have had with Black People" (0 = *none* to 100 = *a lot*)	1 item: "Has this contact generally been positive or negative?" (0 = *negative* to 100 = *positive*)	Single item: FT from 1 (*extremely unfavorable*) to 100 (*extremely favorable*)

Note: MRCM = multilevel random coefficient modeling; ATIA = Attitudes Toward Indigenous Australians; ATBAI = Attitudes Toward Black African Immigrants; AAP = Attitudes Toward Black African People; GES = General Evaluation Scale. For the MRCM, all variables were transformed to range between 1 and 10, and means reported in Table 3 use the 1 to 10 scale metric. Further information about how scales were recoded is available on request from the first author.

[a] In this study, contact valence was not measured directly, and thus, we used proxy measures of relationship closeness (intergroup friendship) whereby when the contact was with close friends, it was coded as positive and when it was with strangers, it was coded as negative. Past research has shown that contact with strangers is less positively valenced than contact with friends (Pettigrew, 1997).

5

Table 3. Means, Standard Deviations, and Within-Study Correlations Between Variables for the Study 1 Primary MRCM

Study	Contact quantity M (SD)	Contact valence M (SD)	Prejudice M (SD)		Correlations Contact quantity	Contact valence
Pedersen and Griffiths (2006)	6.58 (2.28)	5.13 (2.19)	5.59 (1.92)	Quantity	—	—
				Valence	.10	—
				Prejudice	.13	−.64***
Khan and Pedersen (2010)	5.02 (2.39)	6.98 (2.26)	4.56 (2.07)	Quantity	—	—
				Valence	−.15	—
				Prejudice	.28***	−.60***
Smith and Pedersen (2009)	5.01 (2.07)	5.54 (2.11)	4.94 (1.96)	Quantity	—	—
				Valence	.27**	—
				Prejudice	−.11	−.77***
Paolini (2003)—Main study	3.91 (2.32)	7.92 (1.28)	3.18 (1.31)	Quantity	—	—
				Valence	.21*	—
				Prejudice	−.20	−.50***
Pedersen and Watt (2004)	6.48 (2.38)	5.66 (2.05)	5.83 (1.78)	Quantity	—	—
				Valence	.07	—
				Prejudice	.10*	−.50***
Barlow, Louis, and Hewstone (2009)	2.89 (1.53)	2.96 (1.92)	4.57 (1.32)	Quantity	—	—
				Valence	.67***	—
				Prejudice	−.23***	−.20***
Paolini (2003)—Pilot study	5.17 (2.40)	7.21 (2.28)	2.82 (1.58)	Quantity	—	—
				Valence	.27	—
				Prejudice	−.36*	−.68***

Note: MRCM = multilevel random coefficient modeling. Means reflect data recoded on 1 to 10 scale for the main MRCM.
*p < .05. **p < .01. ***p < .001.

tested our model using Multilevel Random Coefficient Modeling (MRCM; see Hox, 2002, for an introduction to multilevel analysis). Because the ancillary analyses on attitudes toward asylum seekers and Muslim Australians were each conducted in single samples, we used classical ordinal least squares (OLS) regression analyses. Table 3 summarizes the means and standard deviations on measures of intergroup contact quantity, valence, and prejudice, as well as the correlations between the variables for the seven data sets relating to Black Australians.

The MRCM analyses are presented in Table 4. The current data can be operationalized as hierarchically structured in form, with participants (the Level 1 unit of observation) nested within samples (the Level 2 unit of observation).

We calculated the average fixed effects of quantity and valence of contact, as well as their interaction, on prejudice across our seven samples.[1] This approach allowed us to (a) calculate a regression equation testing whether contact quantity and valence interacted to predict prejudice in each sample (controlling for their constituent main effects) and (b) calculate the weighted average regression equation for this effect across all samples. This approach is superior to conducting a (disaggregated) moderated multiple regression

Table 4. Study 1, MRCM Model Testing the Effects of Contact Quantity, Contact Valence, and Their Interaction on Prejudice Across Eight Samples

	Fixed effect γ	SE	t	Random effect σ^2_u	χ^2
Intercept	4.73	.26		.53	484.33***
Contact quantity	0.12	.17	6.78***		
Contact valence	−0.43	.02	−23.10***		
Contact quantity × valence	−0.03	.01	−5.55***		

Note: MRCM = multilevel random coefficient modeling.
*p < .05. **p < .01. ***p < .001.

analysis based on the entire sample (N = 1,476) because the latter would ignore possible differences arising from the fact that participants' responses in a given sample may be more similar to one another than they are to participants' responses from another sample (e.g., because mean levels of prejudice might differ across samples due to sample-specific method variance).
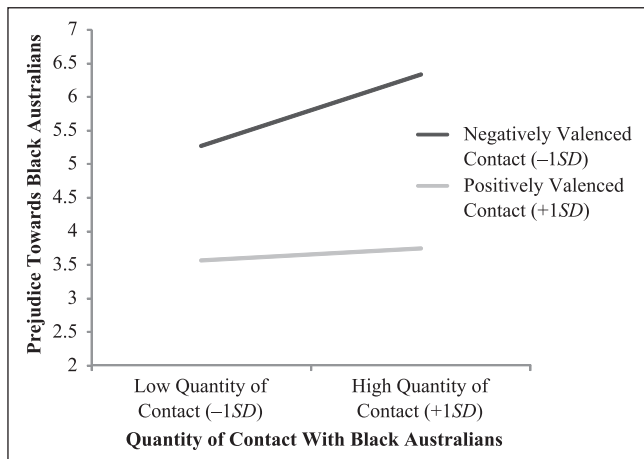
Figure 1. Study 1: Interaction between contact quantity and valence predicting prejudice toward Black Australians
Note: MRCM = Multilevel Random Coefficient Modeling. The simple slopes presented in this figure represent average of slopes across samples estimated using MRCM.

The γ coefficients testing the effects of contact quantity, contact valence, and the quantity × valence interaction on prejudice are presented in Table 4. As shown, contact quantity (γ = .12) and valence (γ = −.43) significantly predicted prejudice. These γ coefficients represent the unstandardized effects and can be interpreted in a similar manner to unstandardized regression coefficients. Thus, the γ coefficient of .12 for contact quantity indicates that, while controlling for contact valence, on average, every 1 unit increase in the quantity of contact (scored on a 1-10 scale) predicted a corresponding 0.12 unit increase in prejudice (also scored on a 1-10 scale). Likewise, the γ coefficient of −.43 for contact valence indicated that, controlling for contact quantity, each 1 unit increase in the valence of contact predicted a corresponding 0.43 unit decrease in racist attitudes. A coefficient of −.43 therefore suggests that the people in our sample with the highest contact valence score (which was the maximum value of 10) were predicted to be 3.87 units lower in their expression of prejudice than people with the lowest contact valence (which was the minimum value of 1). The Contact Quantity × Valence interaction term was also significant (γ = −.03). This indicates that the (group-mean centered) interaction of quantity and valence predicted additional variance in prejudice that was not explained by the simple linear combination of contact quantity and valence. To examine the nature of this interaction, we solved the slopes representing the effect of contact quantity at different levels (±1 *SD*) of contact valence.

The relation between contact quantity and prejudice at low (−1 *SD*) and high (+1 *SD*) levels of contact valence is presented in Figure 1. As shown, the simple slopes indicated that the interaction between quantity and valence occurred because quantity predicts increased prejudice when the contact is negatively valenced (simple slope = .15, *t* = 5.89, *p* < .01). When people experience positively valenced contact, these respondents tended to be lower in prejudice; however, increased quantity of positive contact also predicted a slight increase in racism (simple slope = .07, *t* = 2.58, *p* = .01). These analyses confirm that negative contact is the more consequential predictor of prejudice than positive contact.

Ancillary analyses of the model predicting prejudice toward Muslims and asylum seekers. We conducted ancillary OLS regressions to test the proposed contact quantity by valence interaction predicting prejudice toward two additional outgroups also assessed in two of the samples. The additional outgroups were asylum seekers (assessed in Pedersen & Watt, 2004) and Muslims (assessed in Pedersen & Griffiths, 2006). Note that the measures contained in Table 2 were also used to gauge contact quantity and valence toward Muslims and asylum seekers. For Pedersen and Griffiths (2006), a 16-item scale measured attitudes toward Muslim Australians (α = .92; refer also to Griffiths & Pedersen, 2009), was averaged with a feelings thermometer ranging from 0 = *least warm* to 100 = *most warm*. For Pedersen and Watt (2004), an 18-item scale measured attitudes toward asylum seekers (α = .93). Here again, for consistency, all measures were transformed to range between 1 (low levels of contact quantity, negatively valenced contact, and prejudice, respectively) and 10 (high levels of contact quantity, positively valenced contact, and prejudice, respectively). In both cases, analysis of these groups showed the predicted Valence × Quantity interaction.

When examining contact and prejudice toward Muslims, the main effect for contact quantity was nonsignificant (β = .07, *p* = .247), but the main effect for contact valence was again significant and negative (β = −.65, *p* < .001) such that negative contact was associated with more prejudice than positive contact. Critically, the interaction of valence and contact valence was once again significant (β = −.15, *p* = .010; refer to Figure 2). Analysis of simple slopes indicated that this interaction occurred because increased levels of negatively valenced contact were significantly associated with increased prejudice (*b* = .16/β = .20, *p* = .007). In contrast, the amount of positively valenced contact was associated with lower prejudice toward Muslims, but nonsignificantly so (*b* = −.07/β = −.05, *p* = .413).

When examining contact and prejudice toward asylum seekers, the main effect for contact quantity was nonsignificant (β = .05, *p* = .280). Again, a large main effect for contact valence indicated that negative contact was associated with more prejudice than positive contact (β = −.62, *p* < .001). As predicted, valence and quantity of contact featured in a significant interaction (β = −.40, *p* < .001; refer to Figure 3). Analysis of simple slopes indicated that this interaction occurred because contact quantity, when negatively valenced, was strongly predictive of increased prejudice (*b* = .49/β = .42, *p* < .001). This time, however, contact quantity when positively valenced was moderately predictive of decreased prejudice toward asylum seekers (*b* = −.37/β = −.32, *p* < .001).
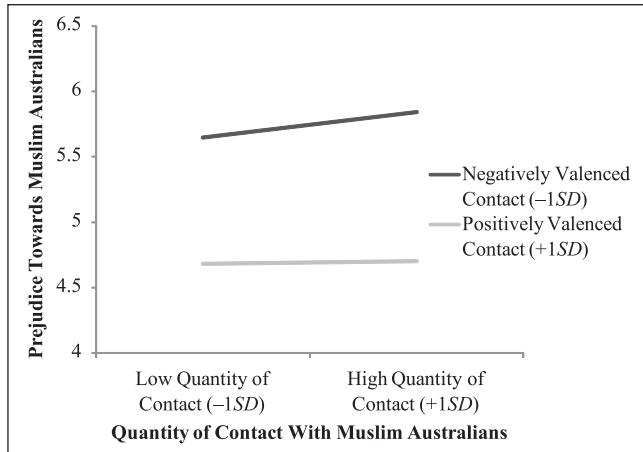
Figure 2. Study 1: Interaction between contact quantity and valence predicting prejudice towards Muslim Australians
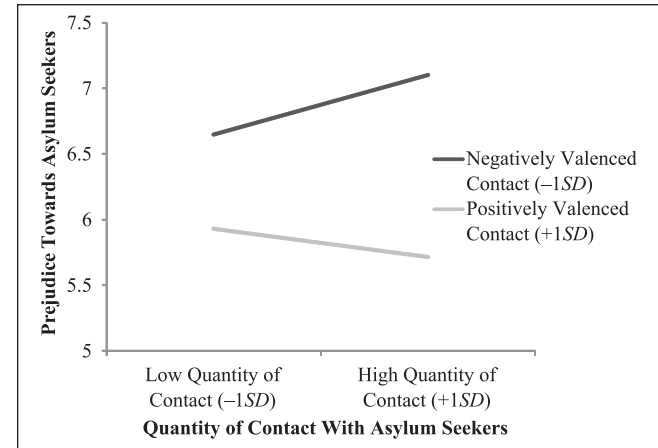

Figure 3. Study 1: Interaction between contact quantity and valence predicting prejudice toward asylum seekers

Discussion

We used MRCM to examine the independent effects of contact quantity and valence on prejudice toward Black people, and to test whether valence moderated the effect of overall quantity of contact valence on prejudice in seven independent samples. This analysis provides results that are more robust than those observed in any one sample.

First, in line with multiple studies on intergroup friendship (e.g., Barlow et al., 2009; Paolini et al., 2004, Paolini et al., 2007) and Pettigrew and Tropp's (2006) meta-analysis, we found that positive contact was linked to lower levels of prejudice toward Black, asylum seeker and Muslim Australians than negative contact.

Second, in line with our hypotheses, the association between contact quantity and prejudice was moderated by contact valence. That is, the relationship between contact quantity and prejudice is stronger when contact is negative than when it is positive (*positive–negative contact asymmetry*). In the main analysis, averaged slopes calculated across the seven studies indicated that negatively valenced contact was particularly linked to increases in prejudice. The more negative contact people reported having, the more prejudice they expressed. In contrast, increasing the quantity or amount of positive contact did not seem to always have the opposing beneficial effect. Instead, people who experienced any positive contact were significantly less racist, but 2 times out of 3, a larger amount of positive contact did not predict a reduction in prejudice any more than a small amount of positive contact.

One may wonder whether this was due to a floor effect—perhaps prejudice could not be further reduced. Inspection of the intercepts in Figure 1 seems to suggest otherwise, as even those who experienced high valence contact had room to express less racist attitudes. A similar pattern was found when predicting prejudice towards Muslim people in our ancillary analyses. The more negative contact people had with Muslim people, the more prejudice toward Muslims

they reported; however, the quantity of positive contact was unrelated to prejudice. When predicting attitudes toward asylum seekers, again the quantity of negative contact predicted increased prejudice toward asylum seekers; however, in this analysis, people with high levels of positive contact with asylum seekers reported lower levels of prejudice than people who reported low levels of positive contact with asylum seekers.

These results support our primary argument that positive and negative contact are differentially powerful in predicting racism, and that negative contact is a stronger predictor of prejudice than positive contact. Three limitations of Study 1 can be identified, however. First, while coming from three geographically separate and independent research laboratories, the results are bound to a specific national setting. Second, positive and negative contact are measured on a unidimensional scale in all cases—Participants reported whether the contact they had (with one of the three respective groups) was positive or negative. However, positive and negative contact are not mutually exclusive. When living in a multicultural area, for example, participants may report high levels of positive and negative intergroup contact, as opposed to those who live in homogenously majority group neighborhoods in which they might have neither. Finally, in the present study, we used one single measure of prejudice, yet race-based attitudes and discrimination take many forms. A more valid test of positive versus negative contact should (a) be replicated across different contexts, (b) contain separate and distinct measures of the quantity of positive and the quantity of negative contact, and (c) test these as distinct predictors of multiple indices of prejudice. We meet all these conditions in Study 2.

Study 2

In Study 2, we measured participants' subjective perception of how much positive and how much negative contact they

had with members of the racial outgroup (in this case, Black Americans). We entered the positive and negative contact measures simultaneously in regression analyses predicting multiple indices of prejudice to see which was the stronger and more consistent unique predictor. Note that, because of the different design, the positive–negative asymmetry effect would be evidenced in this case by testing the difference between two independent main effects rather than by an interaction (as was the case in Study 1).

It is important to test the association between positive and negative contact and *multiple* indices of prejudice. In Study 2, we included five dependent measures. Two were measures of *racism*. These were *modern racism* (a racism characterized by the denial of modern day racism and anger about perceived advantages bestowed on the minority group as a function of their race; McConahay, 1986) and *old-fashioned racism* (a more traditional form of racism, characterized by a belief in the inferiority of the minority group on the basis of their race; refer to Walker, 1994, 2001).

Although overt and more covert racism are devastating to minority group members (e.g., Paradies, Forrest, Dunn, Pedersen, & Webster, 2009), it is not the only way in which racism can manifest itself. As such, we included two measures of *avoidance* of outgroup members (in this case, Black Americans). These were *issue avoidance*, measuring avoidance of sensitive intergroup topics in discussions with Black Americans (e.g., the past, racism, or politics), and *active avoidance* of the outgroup, measuring the desire to avoid face-to-face contact with Black Americans. Finally, we investigated how positive and negative contact predicted attitudes toward a relevant present-day issue about race relations in America, that is, suspicion about Barack Obama's birthplace.[2]

Method

Participants. The participants of this study were 441 members of an online scientific survey pool (www.socialsci.com; 234 male, 202 female, 5 did not report their gender). A total of 25 participants were excluded from the analysis because they took less than 5 minutes or more than 2 hours to complete the study. Participants' ages ranged between 18 and 62 years with a mean of 24.58 years ($SD = 7.45$; 3 did not report their age). All the participants identified as a White American, a precondition for completing the study. In terms of education, the majority of participants reported that they had attended either "some college" (42%) or had a bachelor's degree (32%).

Materials and Measures

Demographic information. In addition to age and gender, we also measured participants' highest level of education (ranging from 1 = *less than high school graduation* to 8 = *doctorate degree*) and their socioeconomic status (from 1 = *extremely poor* to 7 = *extremely wealthy*).

Positive and negative contact. Positive contact was measured via a single item: "On average, how frequently do you

have POSITIVE/GOOD contact with Black people?" Negative contact was measured with the item: "On average, how frequently do you have NEGATIVE/BAD contact with Black people?" Participants responded to both items on 7-point scales (1 = *never* to 7 = *extremely frequently*).

Modern racism. Modern racism toward Black people was measured using eight items (adapted from McConahay, 1986). Seven items were positively worded (e.g., "Discrimination against Black people is no longer a problem in America" and "Over the past few years Black people have gotten more economically than they deserve"). One item was reverse scored (e.g., "It is easy to understand the anger of Black people today in America"). Items were measured on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. The scores were averaged with higher scores indicating more modern racism ($\alpha = .87$).

Old-fashioned racism. Five items adapted from Walker (1994) for the American context assessed old-fashioned racism. Four items were positively worded (e.g., "Black Americans come from less able races and this explains why they are not as well off as most White Americans" and "Most Black people are dirty and unkempt"). One item was reverse scored ("I would not mind if a suitably qualified Black person was appointed as my boss"). Response scales for all items were identical (1 = *strongly disagree* to 7 = *strongly agree*), and together, these items formed a reliable measure ($\alpha = .78$).

Issue avoidance. Issue avoidance was measured by three items adapted from Barlow and colleagues (2009) that tapped into the degree to which participants indicated that they would avoid sensitive intergroup topics with Black people (e.g., "I would go out of my way to avoid talking about race with a Black person"). Response scales for all items were identical (1 = *strongly disagree* to 7 = *strongly agree*), and responses were averaged ($\alpha = .80$).

Active avoidance. A three-item scale adapted from Barlow and colleagues (2009) measured participants' degree of overt avoidance of Black people (e.g., "I would rather sit through a 2 hour lecture about Black history than talk to a Black person briefly about their own history" and "I would rather study for an exam than talk to a Black stranger on the street"). Response scales for all items were identical (1 = *strongly disagree* to 7 = *strongly agree*) and together formed a reliable scale ($\alpha = .70$).

Skepticism about Obama's birthplace. The degree to which participants questioned the first Black president of the United States' birthplace was measured using three items (e.g., "It was legitimate for Donald Trump to ask for Barack Obama's birth certificate" and "I do not believe that Barack Obama was born in America"). Items were measured on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale ($\alpha = .80$).

Results

A small percentage of participants did not complete all the measures used (<5%), and thus, listwise deletion was

Table 5. Study 2 Means, Standard Deviations, and Zero-Order Correlations Between Demographic, Predictor, and Dependent Variables

	M (SD)	1	2	3	4	5	6	7	8	9	10
1. Positive contact	4.97 (1.36)	—									
2. Negative contact	3.01 (1.40)	−.26***	—								
3. Sex	1.46 (0.50)	.12*	.05	—							
4. Age	24.58 (7.45)	.10*	−.13**	.11*	—						
5. Education	3.85 (1.36)	.04	.05	.12*	.40***	—					
6. SES	4.01 (1.22)	−.15**	.09	−.06	−.02	.11*	—				
7. Modern racism	2.98 (1.07)	−.22***	.31***	−.15**	.00	−.07	.01	—			
8. OF racism	2.48 (0.65)	−.20***	.27***	−.09	−.08	−.04	.09	.52***	—		
9. Issue avoidance	2.84 (1.28)	−.23***	.29***	.02	−.05	.00	.06	.37***	.34***	—	
10. Active avoidance	2.73 (1.36)	−.21***	.25***	−.13**	−.07	−.01	.02	.40***	.41***	.48***	—
11. Obama birthplace	1.99 (1.36)	−.12*	.13**	−.06	−.02	−.08	.01	.41***	.32***	.18***	.16**

Note: SES = socioeconomic status; OF = old fashioned.
*p < .05. **p < .01. ***p < .001.

Table 6. Study 2, Positive Contact and Negative Contact as Predictors of Modern Racism, Old-Fashioned Racism, Issue Avoidance, Active Avoidance, and Questioning Barack Obama's Birthplace

	Modern racism			Old-fashioned racism			Issue avoidance			Active avoidance			Obama birthplace		
	b	SE	β	b	SE	β	B	SE	β	b	SE	β	b	SE	β
Baseline model															
Intercept	2.95			2.47			2.92			2.93			2.12		
Positive contact	−0.12	.04	−.15**	−0.06	.02	−.13**	−0.15	.05	−.16**	−0.16	.05	−.16**	−0.09	.05	−.09
Negative contact	0.21	.04	.27***	0.11	.02	.24***	0.23	.04	.25***	0.20	.05	.20***	0.11	.05	.11*
F		29.68***			21.64***			26.06***			19.99***			5.53**		
R^2		.12			.09			.11			.08			.03		

*p ≤ .05. **p < .01. ***p < .001.

employed to deal with missing data. Means and standard deviations of all variables, and their zero-order intercorrelations are reported in Table 5. As Pettigrew and colleagues found (Pettigrew, 2008; Pettigrew & Tropp, 2011), results of a paired sample *t* test indicated that people reported engaging in positive contact with Black Americans (*M* = 4.97) more frequently than they reported engaging in negative contact with Black Americans (*M* = 3.01), *t*(440) = 18.86, *p* < .001. Further to this, the mean level of positive contact reported was significantly higher than the scale midpoint (4), *t*(440) = 15.00, *p* < .001, whereas the mean level of negative contact was significantly lower than the scale midpoint, *t*(440) = −14.93, *p* < .001, suggesting that negative contact is relatively rare. Finally, those who had more positive contact reported less negative contact (*r* = −.26, *p* < .001). As can be seen by this moderate correlation, however, the two measures were not polar opposites of the same function. It was possible to report high levels of one and not the other or any combination of the two.

Positive and negative contact predicting indices of prejudice. A series of five hierarchical linear regressions tested positive and negative contact side by side as predictors of (a)

modern racism, (b) old-fashioned racism, (c) issue avoidance, (d) active avoidance, and (e) suspicion about Barack Obama's American birthplace.[3] Refer to Table 6 for model statistics and coefficients testing the independent predictive power of positive and negative contact on all dependent variables.

The model accounted for significant variance in all dependent variables. As can be seen, the more positive contact participants reported, the *less* modern racism they expressed (β = −.15, *p* = .001), whereas the more negative contact they reported having with Black Americans, the *higher* levels of modern racism they reported (β = .27, *p* < .001; see Figure 4). The same pattern emerged when predicting old-fashioned racism (positive contact: β = −.13, *p* = .005; negative contact: β = .24, *p* < .001). Likewise, positive contact negatively predicted both issue (β = −.16, *p* = .001) and active (β = −.16, *p* = .001) avoidance, whereas negative contact positively predicted issue (β = .25, *p* < .001) and active (β = .20, *p* < .001) avoidance. Finally, positive contact was not a significant predictor of suspicion about Barack Obama's nationality (β = −.09, *p* = .069), but the more negative contact participants reported having with Black Americans, the more
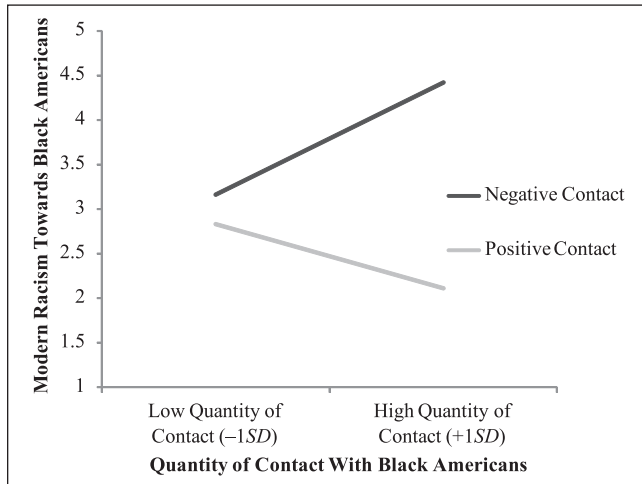
Figure 4. Study 2: Quantity of positively and negatively valenced contact predicting modern racism toward Black Americans

they expressed doubt about Barack Obama's status as an American ($\beta = .11$, $p = .029$).

Note that in all but the final case, the positive and negative slopes differed significantly from one another (as each was significantly different from 0, but in opposing directions). In the final case, when predicting suspicion about Barack Obama's nationality, the slope of positive contact predicting the dependent variable did not differ from 0, whereas the slope of negative contact did. As such, we used a test of difference between two related βs. This test revealed that again, in this case, the slopes differed significantly from one another, $t(440) = -2.52$, $p = .012$ (using the equation $t = (b_1 - b_2) / SE_{(b1-b2)}$).

Although in each case the negative and positive slopes differed significantly from one another, we still wished to test whether or not they differed significantly in absolute magnitude (that is, whether negative contact was significantly more predictive of prejudice than was positive contact). Because our focus was not on differences between racism indicators, and we wished to retain the multivariate power available to us in the current sample, we tested positive versus negative slopes together en masse (vs. individually on separate racism indices). To do this, we reverse scored positive contact, so that both positive and negative contact measures would be positively related to indices of prejudice. That is, a high score on positive contact was recoded to indicate infrequent positive contact, and a high score on negative contact continued to indicate frequent negative contact. We then created two alternate models using path analysis (in AMOS 18). In each model, positive and negative contact predicted all five dependent variables (so that there were 10 paths in all). In the first model, we constrained the weights such that all the negative contact paths were set to be equivalent to one another, and all the positive contact paths were set to be equivalent to one another. In the

second model, we constrained *all* paths to be equivalent to one another. If the model fit significantly worsened from Model 1 to 2, this would indicate that, on average, the magnitude or strength of the association between negative contact and indices of prejudice differed from the magnitude or strength of the association between positive contact and prejudice. In line with predictions, a model in which positive contact and negative contact paths were forced to be equivalent fit the data worse than a model in which negative and positive contact paths were allowed to differ independently, $\chi^2_{change}(1, n = 441) = 4.64$, $p = .031$.

Discussion

Study 2 replicated the findings of Study 1 using data from a sample of White Americans. In line with research by Pettigrew and colleagues (see Pettigrew, 2008; Pettigrew & Tropp, 2011), we found that negative contact occurred less frequently than positive contact. However, consistent with the positive–negative contact asymmetry hypothesis, we found that quantity of negative contact was a stronger and more robust predictor of racism, avoidance, and suspicion about Barack Obama's birthplace, than was quantity of positive contact.

General Discussion

In some ways, the dreams of early contact theorists have not yet been realized. Desegregation and increases in institutional support for interracial contact across a variety of settings has not seen racism, like separate drinking fountains, become a thing of the past. This is despite the fact that multiple independent studies (e.g., Barlow et al., 2009; Hewstone et al., 2005; Paolini et al., 2004), and meta-analyses (e.g., Pettigrew & Tropp, 2006), conclude that contact is associated with decreased prejudice. Instead, racially diverse areas, in which intergroup contact is presumably common, often show the highest levels of prejudice and intergroup antipathy (e.g., Ayers et al., 2009; Cernat, 2010; Quillian, 1995, 1996; Stein et al., 2000). In the current research, we sought to explain this paradox by arguing that negative contact may be more geared to worsening intergroup attitudes than positive contact is to improving them. Specifically, drawing from Allport's (1954) original insight, we extend the contact hypothesis by issuing an important caveat—The relationship between intergroup contact and prejudice depends on its valence.

Conclusion From Studies 1 and 2

Collectively, the results of Studies 1 and 2 supported our hypotheses. In Study 1, the association between contact quantity and prejudice was moderated by valence. In our primary analyses, increased contact quantity predicted increased prejudice toward Black Australians when contact

was *negative*. Contrary to predictions, however, when controlling for contact quantity, increased positive contact did not predict a decrease in prejudice. Rather, as positive contact increased, prejudice also slightly increased. Here, it is important to note that those who had the most contact with Black Australians may well have come from rural areas in which both intergroup contact is common, societal issues of high unemployment and competition for jobs are severe, and norms around the expression of prejudice are more flexible (Pedersen & Walker, 1997). In ancillary analyses, increased negative contact predicted prejudice toward Muslim Australians and asylum seekers, whereas increased positive contact did not predict a change in prejudice toward Muslim Australians, and predicted a moderate decrease in prejudice toward asylum seekers. Crucially, in all cases, negative contact was a stronger and more consistent predictor of race-based attitudes compared with positive contact.

In Study 2, we replicated the pattern in an American context. White Americans who had more negative contact with Black Americans reported more modern and old-fashioned racism, were more likely to avoid sensitive race-based topics of conversation and face-to-face contact with Black Americans, and were more skeptical that Obama was born in the United States. Quantity of positive contact with Black Americans was associated with decreased modern and old-fashioned racism as well as decreased issue and active avoidance. Quantity of positive contact was not, however, a significant independent predictor of suspicion about Obama's birthplace. Again, as in Study 1, we found that negative contact was a stronger and more robust predictor of race-related attitudes than positive contact.

Theoretical and Pragmatic Implications

In one sense, our results provide strong support for the contact hypothesis in predicting reduced levels of prejudice (see Allport, 1954; Pettigrew, 1997). We found, as in past research, that people who reported having positive intergroup contact were also less likely to display prejudice toward the groups with which they associated. What was even more consistent, however, was the association between negative contact and prejudice.

The strong and reliable relationship between the amount of negative contact and prejudice, and the relatively inconsistent relationship between the amount of positive contact and prejudice, is consistent with Paolini and colleagues' (2010) valence–salience effect. The findings also support a large body of research that shows that negative information is weighted more heavily than positive information (see Baumeister et al., 2001).

Taken together, the results of Studies 1 and 2 point to a potential explanation of the persistence of prejudice in the face of increasingly diverse communities. Diversity may offer greater potential for positive intergroup contact, and, as

we found in Study 2, the frequency of positive contact experiences may outnumber the frequency of negative contact experiences. However, the influence of negative contact on prejudice appears to outweigh the influence of positive contact. Consequently, the beneficial effects of numerous positive intergroup encounters may be counteracted by the relatively infrequent but powerful effects of negative intergroup encounters. As Paolini and colleagues (2010) point out, this type of argument should not be taken as a justification for intergroup segregation, and it does not challenge any of the research that demonstrates the beneficial effects of positive intergroup contact (Pettigrew & Tropp, 2006). Instead, this work highlights an important caveat to the contact hypothesis that we hope will contribute toward more focused and effective approaches toward prejudice reduction.

The data we presented are cross-sectional rather than experimental, and thus cannot speak to causality. In line with past theory, we have presented the causal path from contact to prejudice, but we acknowledge that the reverse direction is also possible. People who are prejudiced may see intergroup contact through a different lens, perceiving contact as negative, and in the most extreme case actively behaving to *ensure* that intergroup contact will confirm their expectations and be negative. Like many psychological phenomena, it is likely that bidirectionality is at play. This does not detract from the current findings; however, longitudinal data should be sought to examine the differential strength of each pathway.

A Final Call for a Different Kind of Research

A review of the contact literature suggests that the word *contact* is increasingly being used as synonymous with *positive contact* or *intergroup friendship*. There is, of course, nothing wrong with having a strong focus on positive contact, because this is a promising avenue for improving intergroup relations. However, by conflating intergroup contact with positive contact and intergroup friendship, researchers can fall into the trap of ignoring a vital aspect of contact—that is, negative intergroup contact.

Researchers should be tasked with explaining the effects of negative contact in the detailed and thorough manner in which they have worked to explain positive contact. Specifically, what factors predict negative contact? When will negative contact emerge as opposed to positive contact? If negative contact increases prejudice, how does it do so? Is it simply the reverse of the positive contact effect, increasing rather than decreasing intergroup anxiety? Or are alternative mediators, such as intergroup anger, resentment, or fear, more potent in this case? Furthermore, just as positive contact affects majority and minority groups differentially (Barlow et al., 2012; Tropp & Pettigrew, 2005), it is likely that negative contact will have a different meaning and potentially different outcome for majority and minority

groups. This article presents new data on the strength of the association between negative contact and prejudice that we hope will trigger a new stream of contact research.

Notes

1. For completeness, we reran the model when also including random effects for quantity, quality, and their interaction. The random effects for both quantity ($\sigma^2_u = .013$, $\chi^2 = 26.50$, $p < .001$) and valence ($\sigma^2_u = .043$, $\chi^2 = 58.67$, $p < .001$) were significant, and the random effect for their interaction was not ($\sigma^2_u < .001$, $\chi^2 = 9.72$, $p = .136$). This indicates that although there was significant heterogeneity across samples in the size of the main effects, the effect of their interaction was homogeneous. These results should be interpreted with caution given the limited number of Level 2 units ($n = 8$ studies). Nevertheless, it is worth noting that the fixed component of the Quantity × Valence interaction remained significant and comparable when imposing this arguably more conservative test, which adjusted the slope estimated using Bayesian shrinkage based on the random components included in the model ($\gamma = -.022$, $SE = .010$, $t = -2.87$, $p = .029$).
2. In early 2011, Donald Trump joined the "birther" movement. Birthers propose that Barack Obama was born in Kenya and, as such, is ineligible to be president (http://www.birthers.org/). The fact that Obama is the only president who has been asked to provide a public copy of his long-form birth certificate and is the only Black president of the United States has led to suggestions that questions about his birthplace are (partly) racially motivated. In this study, we used skepticism about Obama's birthplace as a measure of subtle racism.
3. To ensure that our effects could not be explained by covariance with demographic variables, and were not qualified by an interaction between positive and negative contact, we conducted a further series of regressions in which the interaction term was entered at the second step, after positive and negative contact at the first step. We also added demographic variables of sex, age, education, and socioeconomic status (SES). The inclusion of demographic control variables (sex, age, education, and SES) and the interaction term at the second step did not account for any additional variance in predicting old-fashioned racism, issue avoidance, and suspicion about Obama's birthplace. In no case was the interaction between positive and negative contact significant—indicating that the association between positive contact and each dependent variable was at no time dependent on the amount of negative contact reported, and vice versa. The F_{change} statistic was significant when predicting modern racism and active avoidance, but this was not due to substantive change in positive and negative contact as predictors. Rather, sex was a significant additional predictor, with women reporting less modern racism and active avoidance. In addition, as age increased, so too did modern racism.

References

Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.

Australian Human Rights Commission. (2008). *Face the facts: Some questions and answers about refugees, migrants, and Indigenous people*. Sydney, Australia: Author.

Ayers, J. W., Hofstetter, C. R., Schnakenberg, K., & Kolody, B. (2009). Is immigration a racial issue? Anglo attitudes on immigration policies in a border county. *Social Science Quarterly, 90*, 593-610.

Barlow, F. K., Hornsey, M. J., Thai, M., Sengupta, N., & Sibley, C. G. (2012). *The wallpaper effect: The contact hypothesis fails for minority group members who live in areas with a high proportion of majority group members*. Unpublished manuscript.

Barlow, F. K., Louis, W. R., & Hewstone, M. (2009). Rejected! Cognitions of rejection and intergroup anxiety as mediators of the impact of intergroup friendships on prejudice. *British Journal of Social Psychology, 48*, 389-405.

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology, 5*, 323-370.

Bouma-Doff, W. (2007). Confined contact: Residential segregation and ethnic bridges in the Netherlands. *Urban Studies, 44*, 997-1017.

Brown, R., & Hewstone, M. (2005). An integrative theory of intergroup contact. In M. Zanna (Ed.), *Advances in experimental social psychology* (pp. 255-343). San Diego, CA: Academic Press.

Cernat, V. (2010). Intergroup contact in Romania: When minority size is positively related to intergroup conflict. *Journal of Community & Applied Social Psychology, 20*, 15-29.

Christ, O., Ullrich, J., & Wagner, U. (2008, June). *The joint effects of positive and negative contact on attitudes and attitude strength*. Paper presented at the General Meeting of the European Association of Experimental Social Psychology, Opatija, Croatia.

Griffiths, B., & Pedersen, A. (2009). Prejudice and the function of attitudes relating to Muslim Australians and Indigenous Australians. *Australian Journal of Psychology, 61*, 228-238.

Hewstone, M., Cairns, E., Voci, A., Paolini, S., McLernon, F., Crisp, R., . . . Craig, J. (2005). Intergroup contact in a divided

society: Challenging segregation in Northern Ireland. In D. Abrams, M. A. Hogg, & J. M. Marques (Eds.), *The social psychology of inclusion and exclusion* (pp. 265-293). New York, NY: Psychology Press.

Hox, J. (2002). *Multilevel analysis: Techniques and applications*. London, England: Lawrence Erlbaum.

Khan, S., & Pedersen, A. (2010). Black African immigrants to Australia: Prejudice and the function of attitudes. *Journal of Rim Psychology, 4*, 116-129.

Laurence, J. (2011). The effect of ethnic diversity and community disadvantage on social cohesion: A multi-level analysis of social capital and interethnic relations in UK communities. *European Sociological Review, 21*, 70-89.

McConahay, J. B. (1986). Modern racism, ambivalence, and the modern racism scale. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 91-125). New York, NY: Academic Press.

Office of Multicultural Interests. (2009). *Settlement issues for African humanitarian entrants in Western Australia*. Perth, Western Australia: Author.

Paolini, S. (2003). *Variability in the contact-prejudice relationship across relevant outgroups in an Australian undergraduate sample* (Unpublished data). The University of Newcastle, Australia.

Paolini, S., Harwood, J., & Rubin, M. (2010). Negative intergroup contact makes group memberships salient: Explaining why intergroup conflict endures. *Personality and Social Psychology Bulletin, 36*, 1723-1738.

Paolini, S., Hewstone, M., & Cairns, E. (2007). Direct and indirect intergroup friendship effects: Testing the moderating role of the affective-cognitive bases of prejudice. *Personality and Social Psychology Bulletin, 33*, 1406-1420.

Paolini, S., Hewstone, M., Cairns, E., & Voci, A. (2004). Effects of direct and indirect intergroup friendships on judgments of Catholics and Protestants in Northern Ireland: The mediating role of an anxiety-reduction mechanism. *Personality and Social Psychology Bulletin, 30*, 770-786.

Paradies, Y., Forrest, J., Dunn, K. M., Pedersen, A., & Webster, K. (2009). More than tolerance: Racism and the health of young Australians. In F. Mansouri (Ed.), *Youth identity and migration: Culture, values and social connectedness* (pp. 207-226). Altona, Victoria, Australia: Common Ground Publishing.

Pedersen, A., Attwell, J., & Heveli, D. (2005). Prediction of negative attitudes toward Australian asylum seekers: False beliefs, nationalism and self-esteem. *Australian Journal of Psychology, 57*, 148-160.

Pedersen, A., Beven, J., Walker, I., & Griffiths, B. (2004). Attitudes towards Indigenous Australians: The role of empathy and guilt. *Journal of Community and Applied Social Psychology, 14*, 233-249.

Pedersen, A., & Griffiths, B. (2006). *Prejudice against indigenous Australians and Muslim Australians* (Unpublished data). Murdoch University, Perth, Western Australia.

Pedersen, A., & Walker, I. (1997). Prejudice against Australian Aborigines: Old-fashioned and modern forms. *European Journal of Social Psychology, 27*, 561-587.

Pedersen, A., & Watt, S. (2004). *Prejudice against Indigenous Australians and asylum seekers in three Western Australian locations* (Unpublished data). Murdoch University, Perth, Western Australia.

Pedersen, A., Watt, S., & Hansen, S. (2006). The role of false beliefs in the community's and the federal government's attitudes toward Australian asylum seekers. *Australian Journal of Social Issues, 41*, 105-124.

Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality and Social Psychology Bulletin, 23*, 173-185.

Pettigrew, T. F. (2008). Future direction for intergroup contact theory and research. *International Journal of Intercultural Relations, 32*, 187-199.

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology, 90*, 751-783.

Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology, 38*, 922-934.

Pettigrew, T. F., & Tropp, L. R. (2011). Intergroup contact as one of many predictors of prejudice. In T. F. Pettigrew & L. R. Tropp (Eds.), *When groups meet: The dynamics of intergroup contact* (Essays in Social Psychology) (Chap. 10). New York, NY: Psychology Press.

Prestwich, A., Kenworthy, J. B., Wilson, M., & Kwan-Tat, N. (2008). Differential relations between two types of contact and implicit and explicit racial attitudes. *British Journal of Social Psychology, 47*, 575-588.

Putnam, R. D. (2007). E Pluribus Unum: Diversity and community in the twenty-first century 2006 Johan Skytte prize lecture. *Scandinavian Political Studies, 30*, 137-174.

Quillian, L. (1995). Prejudice as a response to perceived group threat: Population composition and anti-immigrant and racial prejudice in Europe. *American Sociological Review, 60*, 586-611.

Quillian, L. (1996). Group threat and regional change in attitudes toward African-Americans. *American Journal of Sociology, 102*, 816-860.

Smith, K., & Pedersen, A. (2009). *The path from experience to change: How contact and intergroup anxiety affect support for policy change, willingness to act and attitudes toward Indigenous Australians and refugees* (Unpublished data). Perth, Australia.

Stein, R. M., Post, S. S., & Rinden, A. L. (2000). Reconciling context and contact effects on racial attitudes. *Political Research Quarterly, 53*, 285-303.

Stephan, C. W., Stephan, W. G., Demitrakis, K. M., Yamada, A. M., & Clason, D. L. (2000). Women's attitudes toward men: An integrated threat theory approach. *Psychology of Women Quarterly, 24*, 63-73.

Stephan, W. G., Boniecki, K. A., Ybarra, O., Bettencourt, A., Ervin, K. S., Jackson, L. A., . . . Renfro, C. L. (2002). The role of threats in the racial attitudes of blacks and white. *Personality and Social Psychology Bulletin, 28*, 1242-1254.

Tropp, L. R., & Pettigrew, T. F. (2005). Relationships between intergroup contact and prejudice among minority and majority status groups. *Psychological Science, 16*, 951-957.

Wagner, U., Christ, O., Pettigrew, T. F., Stellmacher, J., & Wolf, C. (2006). Prejudice and minority proportion: Contact instead of threat effects. *Social Psychology Quarterly, 69*, 380-390.

Wagner, U., van Dick, R., Pettigrew, T. F., & Christ, O. (2003). Ethnic prejudice in East and West Germany: The explanatory power of intergroup contact. *Group Processes & Intergroup Relations, 6*, 22-36.

Walker, I. (1994). Attitudes to minorities: Survey evidence of Western Australians' attitudes to Aborigines, Asians and women. *Australian Journal of Psychology, 46*, 137-143.

Walker, I. (2001). Changes in prejudice against Aboriginal Australians. In M. Augoustinos & K. J. Reynolds (Eds.), *Understanding prejudice, racism and social conflict* (pp. 24-42). London, England: SAGE.

Wright, S. C., Aron, A., McLaughlin, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of intergroup friendships and prejudice. *Journal of Personality and Social Psychology, 73*, 73-90.