Intergroup Contact is Reliably Associated with Reduced Prejudice Even in the Face of Group Threat and Discrimination

Jasper Van Assche*[1,2],

Hermann Swart[3], Katharina Schmid[4], Kristof Dhont[5], Ananthi Al Ramiah[6], Oliver Christ[7], Mathias Kauff[8], Sebastiaan Rothmann[9], Michael Savelkoul[10], Nicole Tausch[11], Ralf Wölfer[12,13], Sarah Zahreddine[2], Muniba Saleem[14], & Miles Hewstone[15]

[1] Department of Developmental, Personality and Social Psychology, Ghent University, Belgium

[2] Center for Social and Cultural Psychology (CESCUP), Université Libre de Bruxelles, Belgium

[3] Department of Psychology, Stellenbosch University, South Africa

[4] Universitat Ramon Llull, ESADE Business School, Spain

[5] School of Psychology, University of Kent, United Kingdom

[6] Independent Scholar, Kuala Lumpur

[7] Institut für Psychologie, FernUniversität Hagen, Germany

[8] Department of Psychology, Medical School Hamburg, Germany

[9] Optentia Research Focus Area, North West University, South Africa

[10] Department of Sociology, Radboud University, the Netherlands

[11] School of Psychology & Neuroscience, University of St. Andrews, United Kingdom

[12] Deutsches Zentrum für Integrations- und Migrationsforschung, Berlin, Germany

[13] Department of Experimental Psychology, University of Oxford, United Kingdom

[14] University of California, Santa Barbara, United States of America

[15] Emeritus Professor, University of Oxford, United Kingdom

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Abstract

Intergroup contact provides a reliable means of reducing prejudice. Yet, critics suggested that its efficacy is undermined, even eliminated, under certain conditions. Specifically, contact may be ineffective in the face of threat, especially to (historically) advantaged groups, and discrimination, experienced especially by (historically) disadvantaged groups. We considered perceived intergroup threat and perceived discrimination as potential moderators of the effect of contact on prejudice. Two meta-analyses of correlational data from 34 studies (totaling 63,945 respondents - drawn from 67 subsamples across 19 countries) showed that contact was associated with decreased prejudice and increased outgroup positivity, in cross-sectional and longitudinal designs, among advantaged and disadvantaged group members, and in both WEIRD and non-WEIRD contexts. Both perceived threat and perceived discrimination moderated the contact-attitude association, but in an unanticipated direction. Indeed, contact's beneficial effects were at least as strong among individuals high (r = .19) as among individuals low (r = .18) in perceived threat. Similarly, the effects of contact were at least as strong among those high (r = .23) as among those low (r = .20) in perceived discrimination. We conclude that contact is effective for promoting tolerant societies, because it is effective even among subpopulations where achieving that goal might be most challenging.

Keywords: intergroup contact, threat, discrimination, WEIRD, prejudice, intergroup relations

Word count: 10,758

Public Significance Statement: Positive intergroup contact promotes tolerance. A stringent meta-analytic examination across thirty-four studies that differ markedly in their socio-political context indicates that these beneficial effects are found even among individuals that perceive a great deal of intergroup threat or discrimination. Hence, contact offers a promising tool for reducing conflict, even under challenging conditions.

Running head: Group Threat, Discrimination, and Contact

Interactions with members of different social groups are believed to be a potent remedy for prejudice. In 1954, Allport hypothesized that intergroup contact could reduce intergroup tensions and, since then, evidence has accumulated that contact indeed yields more tolerant intergroup attitudes. In a meta-analytic test of 515 studies (including over 250,000 respondents across 713 samples), Pettigrew and Tropp (2006) revealed that the typical contact effect is robust and emerges across a range of targets and settings. A later meta-analysis (Lemmer & Wagner, 2015) confirmed that contact interventions outside the lab reduce ethnic prejudice.

Positive intergroup contact has been shown to predict reduced prejudice over time (Swart et al., 2011), and its benefits have also been observed in (former) conflict regions such as Northern Ireland (Tausch et al., 2007) and South Africa (Swart et al., 2011). Although contact effects are typically larger for (historically) advantaged group members, they have also been found to impact attitudes of ethnic minorities and (historically) disadvantaged groups (Tropp & Pettigrew, 2005). A meta-analytic review by Davies and colleagues (2011) also showed that the negative association between contact and prejudice is larger for high-quality (e.g., friendships) than less engaging, superficial forms of contact (e.g., mere contact frequency).

Thus, contact seems a promising tool for reducing prejudice. Yet, as Pettigrew and Tropp (2006, p. 767) stated, negative intergroup perceptions and experiences might limit its effects, and "social psychologists must grant greater attention to the negative factors that deter intergroup contact from diminishing prejudice […] Factors that curb contact's ability to reduce prejudice are now the most problematic theoretically, yet the least understood […] Such an emphasis would allow a more comprehensive understanding of conditions that both enhance and inhibit the potentially positive effects of contact."

Two plausible inhibitory factors appear to be intergroup threat and discrimination, both of which have been typically measured as subjective perceptions (which is how we analyze their effects herein), rather than objective assessments. Threat can be particularly salient for some

individuals, groups, and societies (especially for members of advantaged groups), while everyday experiences of discrimination can counteract the potential of positive experiences of contact to improve intergroup relations (especially for members of disadvantaged groups). Both threat and discrimination are often central in public discourse (i.e., they represent key topics in the media as well as politics), and can be highly salient given their proximity to, and large impact on, intergroup relations (Stephan & Renfro, 2002). Hence, it seems vital to examine if contact effects are limited to relatively innocuous circumstances, for those who perceive low levels of intergroup threat or discrimination, or, of greater social significance, whether contact is also beneficial under challenging conditions, such as among those who perceive greater threat or discrimination.

Does Contact Work *Even* Under Challenging Conditions?

Despite the compelling evidence in support of intergroup contact, and the evolution of Allport's (1954) contact hypothesis into a comprehensive intergroup contact theory (Hewstone & Swart, 2011), some have argued that the effectiveness of contact may be limited, particularly among those with negative predispositions. It has been argued that in contexts that promote conflict and intolerance, or among individuals who perceive higher levels of intergroup threat and discrimination (see Pettigrew, 1998), contact may be less effective in bringing about attitude change than among those with more positive predispositions. To date, however, little research has examined this idea systematically, and contact theory has been unable to reject this plausible criticism comprehensively.

Allport (1954) himself noted limitations on the effectiveness of contact, stating that some "intolerant" personalities might resist the influence of contact. In his work, however, he mainly focused on four conditions within the contact setting (i.e., equal status, cooperation, common goals, and a supportive normative climate) which he designated as 'optimal' for contact to be beneficial. Historical accounts of prejudiced individuals and their 'resistance to contact' have been described more elaborately elsewhere, and mainly in terms of three facets of personality: cognitive rigidity, psychological insecurity, and sensitivity to threat (Adorno et al., 1950). Mussen

(1950) examined the first personality facet, cognitive rigidity. Based on social adjustment reports and interview data of White American boys attending an interracial camp, he pointed to defensiveness and inflexibility as likely inhibitors of contact effects. Amir (1969) interpreted these results in terms of the second personality facet, psychological insecurity, arguing that a lack of inner security among some of the boys did not permit them to benefit from the contact opportunities during the camp. The third facet, threat sensitivity, was not scrutinized in these classic studies, and individual differences that might moderate the effects of contact were left unexamined for a period, but have more recently regained attention (e.g., Turner et al., 2020). Turning from personality facets to more social consideration, in the following two sections, we consider two highly plausible potential boundary conditions for contact effects, perceived intergroup threat and discrimination.

Threat as a Potential Inhibitor

Several studies determined that contact works best among those most in need of intervention, for example, people with negative intergroup norms (i.e., low in diversity beliefs; Adesokan et al., 2011), or people high in need for closure (Dhont et al., 2011), authoritarianism (Dhont & Van Hiel, 2009), and ingroup identification (see Hodson, 2011, for an overview). A subsequent study by Kteily and colleagues (2019), including a wide array of individual moderators, signposts generally equal effect sizes among "prone-to-prejudice" and relatively "prone-to-tolerance" people (for an overview, see Turner et al., 2020). Although most studies show enhanced or at least equally large beneficial effects of contact among what Allport (1954) labeled "intolerant" subpopulations, there is no consensus on whether contact works (equally) for everyone. This is a theoretical lacuna, because it is central to any theory to know whether, and to what extent, it is generalizable; that is, under which conditions it does, and does not, work.

To date, no studies, to our knowledge, have focused on perceived intergroup threat as a potential "boundary condition" for contact to be beneficial. This is surprising, because perceptions of outgroups as threatening have been identified as potent inhibitors of positive

intergroup relations (Stephan & Renfro, 2002). Indeed, early theorists such as Blumer (1958) and Sherif and Sherif (1969) proposed that the source of negative outgroup attitudes lies in competition between two groups for scarce resources. These resources may be "realistic" in the sense that they are tangible (e.g., money) or involve control (e.g., political power), or they may be "symbolic" in the sense of conflicting values and beliefs (Stephan & Renfro, 2002).

Both forms of intergroup threat are strongly interrelated, and both have positive associations with prejudice and negative associations with outgroup positivity and trust (see Riek et al., 2006). Indeed, contact research has established threat as a reliable mediator of contact effects (Tausch et al., 2007), such that contact promotes greater tolerance via reduced perceptions of threat. There is, however, scant research on whether threat *moderates* contact effects. In other words, whether contact works equally well for those who report high versus low levels of perceived intergroup threat remains unknown.

Discrimination as a Potential Inhibitor

The second major factor that may limit the effectiveness of contact in reducing prejudice is the experience of being a target of discrimination. In this paper, when investigating discrimination as a potential inhibitor of contact effects, we refer to perceived or experienced discrimination (not perpetrated discrimination). Allport (1954) did not list discrimination as a boundary condition of contact – although a lack of equal status was recognized as a suboptimal condition, and it seems reasonable to assume that unequal status is often associated with discrimination. Pettigrew and Tropp (2006) revealed that equal status was a facilitating, rather than a necessary factor for contact to be beneficial. Yet, Tropp and Pettigrew (2005) also suggested that experiences of personal discrimination or perceptions of ingroup devaluation by outgroup members could hinder the potential benefits of intergroup contact.

Perceived discrimination is a complex phenomenon. On the one hand, experiences of personal discrimination (e.g., verbal harassment, or property damage) based solely on belonging to a group can prompt reduced life satisfaction and increased feelings of anxiety and depression

(Schmitt et al., 2014). On the other hand, perceived group discrimination, such as holding the view that one's group is treated unfairly (e.g., criticism of one's culture or religion, lower perceived economic/political power), may have the capacity to foster reactive negativity towards outgroups that (are perceived to) devalue the ingroup (Sidanius & Pratto, 2001).

Whereas personal discrimination is primarily self-focused, group discrimination operates at the intergroup level, relating to collective beliefs about the devalued status of one's group relative to another. Even if perceived group discrimination is not necessarily based on direct personal experiences of discrimination, both types of discrimination might "poison" future experiences within actual contact situations (see Tropp & Pettigrew, 2005). In this respect, perceived discrimination could also inhibit the contact-prejudice association. Nonetheless, studies examining how discrimination moderates the effects of intergroup contact are rare. Three studies (Tropp, 2007; Rafiqi & Thomsen, 2020; Thomsen & Rafiqi, 2016), using different measures and showing divergent results, constitute notable exceptions.

In a first study in the U.S., Tropp (2007) used a measure of perceived group discrimination to explore the relationship between contact and interracial closeness among African American and White American respondents under varying conditions of perceived discrimination. She found that under conditions of high perceived group discrimination against the ingroup, contact remained significantly associated with interracial closeness amongst the White American respondents but not amongst the African American respondents. Put differently, the robust negative association typically found between contact and prejudice was no longer found among those members of the disadvantaged group who perceived higher levels of group discrimination. In a second study, undertaken among various immigrants and ethnic minority citizens in Denmark, Thomsen and Rafiqi (2016) used a measure of personal perceived discrimination to explore the interaction between contact and discrimination. Contrary to the results reported by Tropp (2007), their analyses indicated that the impact of intergroup contact was uniform across various levels of perceived personal discrimination. To integrate the two,

seemingly inconsistent, findings, Rafiqi and Thomsen (2020) examined both group and personal perceived discrimination in a single design among Danish ethnic minority members. They did not replicate Tropp's (2007) finding that perceived group discrimination inhibited contact effects amongst minorities; in fact, their results showed that greater perceived group discrimination *enhanced* the relationship between cross-group friendships and reduced prejudice towards majority Danes (the so-called enhancement hypothesis). They did, however, replicate their earlier finding (Thomsen & Rafiqi, 2016) that personal discrimination does not hinder contact effects.

Again, there seems to be no consensus on whether contact works under more challenging conditions - specifically whether contact is beneficial, *even* for people who subjectively experience higher levels of discrimination targeted towards themselves or their group. Moreover, given the limited amount of work on this crucial question to date, a large-scale investigation is needed, not only to resolve this debate, but also to address the broader and more pressing theoretical question of the boundary conditions of contact theory. Hence, we tackled this research question across multiple studies conducted in multiple countries, looking at both personal and group discrimination, each of which can be experienced by both advantaged and, especially, disadvantaged group members.

The Present Research

The present research responds to calls to study the effectiveness of intergroup contact in less congenial circumstances known to be associated with greater prejudice and conflict (Pettigrew, 1998). It does so by assessing the effectiveness of contact among individuals high and low in (1) threat perceptions, and (2) perceived discrimination. The primary aim of the present research is to address a theoretical lacuna in the contact literature by establishing whether perceived threat and/or perceived discrimination constitute boundary conditions that potentially limit the effectiveness of intergroup contact. If we were to find that contact remained effective even for those high in perceived intergroup threat or in perceived discrimination, it would

address the theoretical lacuna of contact's boundary conditions and constitute evidence that contact really does offer a valuable tool in the fight against prejudice.

We thus set out to test two main hypotheses, that the ameliorating effects of intergroup contact would *only* be found: (1) among individuals lower, but not higher, in perceived threat (Hypothesis 1); and (2) among people lower, but not higher, in perceived discrimination (Hypothesis 2). This might be considered a 'strong form' of these hypotheses; the 'weak form' would predict that the effects of contact on intergroup attitudes are weaker among individuals higher, compared with lower, in either perceived threat or discrimination.

Method

We tested these hypotheses across multiple datasets, to provide a robust assessment of the effect size of the association between intergroup contact and outgroup attitudes/orientations. We compared people with higher, compared with lower, perceptions of threat (first set of analyses) and discrimination (second set of analyses). We tested if (1) perceived threat and (2) discrimination moderated the effects of different dimensions of contact (including quantity and quality of contact, positive and negative contact, and cross-group friendships) on three different types of outcomes (trust, positive orientation, and prejudice), for both (historically) advantaged and disadvantaged group samples from across the world, using cross-sectional and longitudinal research designs.

This research unfolded in three phases. In the first phase, we had at our disposal thirteen datasets. In the second phase we were able to increase this to eighteen datasets after we distributed a call through the listservs of various academic associations (e.g., the International Society of Political Psychology and the European Association of Social Psychology) in search of data (published or unpublished) that met the following inclusion criteria:

1. One or more measures of intergroup contact (e.g., quantity, quality, cross-group friendships, positive and/or negative contact experiences).

2. One or more measures of perceived outgroup threat (e.g., general, symbolic, realistic, group threat) and/or a measure of perceived discrimination (e.g., personal discrimination, group discrimination). Note that we conducted separate analyses for perceived personal versus perceived group discrimination, but not for different types of threat, as they are strongly interrelated, cannot always be treated as discrete measures (Tausch et al., 2007), and most measures include items that tap into several forms of threat at once (Van Assche et al., 2016).
3. One or more measures of attitudes/outgroup orientations (e.g., a feeling thermometer, warmth, affect, social distance, subtle prejudice, outgroup trust).
4. The sample should consist of either socially and/or economically advantaged or disadvantaged group members, or both.
5. Data for inclusion could be either cross-sectional or longitudinal.

In the third phase, we conducted extensive literature searches on Scopus, Web of Science, Psycnet, Google Scholar, PsyArXiv, and Eric, along with examining the reference sections in papers uncovered in these searches. For database searches, we used the search terms "contact" AND "threat" OR "discrimination", which resulted in 845 articles regarding contact and threat (196 independent hits via Scopus, 537 via Web of Science, 28 via Psycnet, 64 via Google Scholar, 15 via PsyArXiv, and 5 via Eric), and 689 articles regarding contact and discrimination (165 independent hits via Scopus, 464 via Web of Science, 23 via Psycnet, 30 via Google Scholar, 7 via PsyArXiv, and 10 via Eric) that were identified for potential inclusion.

Application of the inclusion criteria (i.e., a human population, empirical results at the individual level, at least one measure of direct intergroup contact, at least one measure of threat or discrimination, and at least one measure tapping into intergroup attitudes/outgroup orientations) left 37 studies for inclusion (24 measuring threat, 13 measuring discrimination). Attempts to contact authors and coauthors for information finally resulted in the addition of a further 16 studies, which ultimately allowed us to test our two hypotheses in a total of thirty-four studies across nineteen countries. These thirty-four studies included general and representative

samples from a broad array of designs and contexts. We followed the procedures described in the Many Labs 2 project (Klein et al., 2018) to quantify sample WEIRDness via the sample country of origin. Besides samples from so-called "WEIRD" (Western, Educated, Industrialized, Rich and Democratic; Henrich et al., 2010) countries, we also included samples from non-WEIRD countries such as South Africa, Lebanon, and Malaysia, where contact conditions are often challenging in different ways (see Dixon et al., 2005). Twenty-one of the thirty-four studies included subsamples of members from (historically) disadvantaged groups, eleven had a longitudinal design, and fourteen included a measure of negative intergroup contact. Twenty-seven studies included a measure of perceived threat to test Hypothesis 1, and fourteen studies included a measure of perceived discrimination to test Hypothesis 2.

In sum, we conducted a meta-analysis based on 34 studies involving data from 63,945 individuals - drawn from 67 subsamples – which allowed us not only to offer a strong test of the replicability of our hypotheses across independent samples (Braver et al., 2014), but also to calculate more precise estimates (Cumming, 2014; see Table A in the supplementary online materials, SOM; for an overview of all subsamples). In each study, the independent variable was a contact measure (coded as quantity, quality, positive contact, negative contact, or cross-group friendships); the moderator variable was coded as a measure of perceived threat (first set of analyses) or (personal or group) discrimination (second set of analyses); and the outcome variable was an outgroup orientation measure (coded as outgroup positivity, trust, or prejudice). Information about each sample and item wordings for each measure can be found in the SOM (Section A). All procedures performed in these studies were in accordance with the ethical standards of the relevant institutional research committees, and with the American Psychological Association Meta-Analysis Reporting Standards (e.g., regarding operational characteristics of all variables, eligible populations, research designs, time period, registries, and coding procedures). In accordance with the Transparency and Openness Promotion (TOP) Guidelines developed by the Center for Open Science (and endorsed by the American Psychological Association), all (raw

and processed) data and coding materials for each individual analysis as well as for the meta-analysis can also be found on the Open Science Framework (https://osf.io/rp9af).

For all measures in all studies, we calculated means, standard deviations, Cronbach's alpha, and inter-correlations (see the SOM, Section C, Table B). We conducted several hierarchical linear regression analyses to test whether the relationship between contact and intergroup attitudes was moderated by perceptions of either threat or discrimination. In each (sub)sample, we were able to consider various types of contact and tap into various facets of intergroup attitudes. The procedure for each primary analysis was as follows: the standardized scores of contact and one of the moderators were included, as well as their interaction term. No other control variables were added. Next, simple slope analyses revealed the strength of the contact-attitude association for individuals low (i.e., 1 SD below the mean) and for those high (i.e., 1 SD above the mean) in perceived threat or discrimination (for detailed results, see the SOM, Section C, Table C). The meta-analytic results are based on this series of regressions where all key variables (contact as predictor, threat or discrimination as moderator, and their interaction term) were entered simultaneously.

Furthermore, we conducted longitudinal analyses in those samples that included two measurement points. We tested a model in which the standardized T1 scores of contact and the moderator, as well as their interaction term, predicted the T2 scores of intergroup attitudes, controlling for T1 scores of the measure of intergroup attitudes. By including the T1 attitude scores, we controlled for the stability effect of attitudes over time (i.e., including their autoregressive paths). We dealt with missing data in these analyses using the robust MLR likelihood estimator. These results are shown in Table D (SOM, Section C).

Results

Preliminary Analyses

Two points of critique are often raised when examining moderators of contact effects on outgroup attitudes. First, is there enough 'room' on the scale used for attitudes to improve

because of contact experiences? We found that, across all studies and all outcomes, there was considerable room for change (i.e., on average, 35% of the response scale was available to move their attitude towards a more positive view). Second, do those respondents that score 1 SD above the mean in perceived threat or discrimination really score high on these moderator variables, compared to the respective scale midpoints? Across all samples, while respondents 1 SD above the mean in threat scored on average 31% higher than the scale midpoint of threat, respondents 1 SD above the mean in discrimination only scored 7% above the scale midpoint of discrimination. We believe that the response profile in the case of discrimination items was due to the use of some "extreme" scales (with items tapping into experiences of verbal harassment and physical attacks; see Section B in the SOM).

Main Analyses

We conducted two meta-analyses to calculate the overall effect sizes of our key predictors: one including all studies with threat as a moderator, to test Hypothesis 1, and one including all studies with discrimination as a moderator, to test Hypothesis 2. Using the standardized estimates of all our separate regression analyses, we tested a random effects model using the Open Psychometric Meta-analysis software (Version 1.0b9) by Wiernik (2017). We corrected for statistical artifacts using the artifact distribution method, and we used a multilevel design with effect sizes nested within samples to account for effect size dependency. For clarity, we recoded the negative sign for the negative associations of positive contact with prejudice as well as the negative sign for the negative associations of negative contact with positivity.

Tables 1 and 2 show all effect sizes with their observed and true standard deviations, confidence intervals, and credibility intervals (which represent a range of values that includes the true effect size with 80% probability). Additionally, we report Cohen's f^2 effect size indicators for multiple regressions, and we conducted homogeneity analyses to test whether the sets of effect sizes were heterogeneous, and whether the effect size of intergroup contact was different between categories of samples (Lipsey & Wilson, 2001). As can be seen in Tables 1 and 2, these

categories were country (WEIRD versus non-WEIRD countries), group status (advantaged versus disadvantaged groups), type of contact (quantity, quality, friends, positive, or negative contact), and type of outgroup orientation measure (positivity, trust, or prejudice). In Table 2, we additionally report effect sizes for the subcategories personal versus group discrimination. A significant between-groups Q estimate (Q_b) indicates that the effect sizes across the subcategories are significantly different from one another. A significant within-groups Q estimate (Q_w) indicates that the effect sizes within each subcategory are heterogeneous.

Threat as a Moderator

Table 1 shows the effect size estimates on the set of data including a threat measure (i.e., 190 effect sizes). Following the most recent recommendations for interpreting effect sizes (Gignac & Szodorai, 2016), the overall effect size of intergroup contact can be considered *typical*, while the overall effect size of threat can be considered *rather large*. Notably, there is considerable variation in these effect sizes. Specifically, the credibility intervals show that there is an 80% probability that the true contact effect lies between $\beta = .07$ and $\beta = .30$, and the true threat effect lies between $\beta = -.57$ and $\beta = -.10$. The overall interaction effect is significant, but small in effect size, and we do not see this result as practically meaningful. More importantly, the simple slopes indicate that the effect of contact is significant and positive for individuals low ($\beta = 0.18$; $p < .001$) and high ($\beta = 0.19$; $p < .001$) in perceived threat. This bolsters our case that the effect of contact of equivalent size for individuals low and high in perceived threat. As such, we do not find support for the 'strong form' of Hypothesis 1 (i.e., contact effects only occur among those perceiving low threat), or for its 'weak form' (i.e., contact effects are weaker among the highly threatened). Indeed, those low and high in perceived threat did not differ much in the extent to which they benefited from intergroup contact experiences. Detailed interpretations of the other results of this analysis (e.g., differences between types of contact) can be found in the SOM (Section C, Figure A).

Discrimination as a Moderator

Table 2 shows the effect size estimates on the set of data including a measure of perceived discrimination (i.e., 79 effect sizes). The overall effect size of contact can be considered *typical*, while the overall effect size of discrimination can be considered *rather small*. Again, there was some variation. Specifically, the credibility intervals show that there is an 80% probability that the true contact effect lies between $\beta = .09$ and $\beta = .33$, and the true discrimination effect lies between $\beta = -.19$ and $\beta = -.02$. Although the overall interaction effect is statistically significant, its effect size is small, and we do not consider this result as practically meaningful. As with the parallel analysis with threat as moderator, we want to draw attention to the simple slopes for individuals low versus high in perceived discrimination, which indicate that the effect of contact is significant and positive for individuals low ($\beta = 0.20$; $p < .001$) or high ($\beta = 0.23$; $p < .001$) in perceived discrimination. Hence, we do not find support for the 'strong form' of Hypothesis 2 (i.e., contact effects only occur among those perceiving low levels of discrimination), or its 'weak form' (i.e., contact effects are weaker among the highly discriminated). In fact, the results reveal that contact effects are large and robust among people both low and high in perceived discrimination (see the SOM, Section C, Figure B, for a forest plot and for an elaborative discussion of the other results).

Discussion

Early theorists were skeptical about the power of intergroup contact to promote tolerance across the board; that is, amongst the most "intolerant" in terms of negative predispositions towards intergroup relations, or among the most "victimized" in terms of experiencing discrimination. Despite its impressive development, intergroup contact theory would be incomplete without a robust investigation of its boundary conditions. We therefore tested two main hypotheses concerning the role of perceived intergroup threat (Hypothesis 1, results aggregated across 27 studies) and perceived discrimination (Hypothesis 2, 14 studies) in moderating the impact of intergroup contact on outgroup attitudes. We analyzed data from samples drawn from both WEIRD (Henrich et al., 2010) and non-WEIRD contexts (that offer a

different challenge to the promise of contact; Dixon et al., 2005) to undertake a strict test of these two hypotheses.

We found that although perceived threat, especially, and discrimination were both strongly (and significantly) negatively associated with intergroup attitudes, neither factor hindered the effect of contact on these attitudes in any subsamples based on the type of country, advantaged/majority-disadvantaged/minority status, type of contact, attitude measure, or study design. Given that the preliminary analyses revealed that the actual level of experienced threat of those highly threatened was well above the scale midpoint, the clear contact effects found among those individuals are particularly promising. Although those with higher scores on perceived discrimination scored on average only around the scale midpoint (as previously noted), it is known that even a few experiences of discrimination can have a devastating impact on a person's life (Schmitt et al., 2014). Furthermore, in an additional robustness check including only general discrimination scales (as 'extreme' scales might constrain the variance in our moderator), we again found strong and significant contact effects, particularly among those high in perceived discrimination (see the SOM, Section C, Table E). We now consider three broader issues – whether intergroup contact provides a remedy for all, the distinction between personal and group discrimination, and the challenge of putting contact into practice – while acknowledging some limitations and identifying areas for future studies.

Intergroup Contact as a Remedy *Even* Under Challenging Conditions?

The current large-scale investigation of intergroup contact shows its robust effects. Specifically, based on two meta-analyses of data from 34 studies and 63,945 respondents across 19 countries, we conclude that two plausible inhibitors of the effect of contact on attitudes do not, in fact, constrain it; those high, as opposed to low, in either perceived threat or discrimination benefited as much from experiences of positive contact. As such, we did not confirm the 'strong form' of our hypotheses that predicted that the ameliorating effects of intergroup contact would *only* be found among individuals lower, but not higher, in either

perceived threat (Hypothesis 1) or perceived discrimination (Hypothesis 2). Nor did we confirm the 'weak form' of our hypotheses, that effects of contact on intergroup attitudes would be significantly weaker among individuals higher, compared with lower, in either perceived threat or discrimination. Furthermore, our findings were robust across a set of more fine-grained analyses. The results indicate that contact effects are comparable for members of advantaged (27 studies) and disadvantaged groups (21 studies). Contrary to the proposal that contact conditions in non-WEIRD countries are often more challenging to the contact hypothesis (see Dixon et al., 2005), in our tests, we found that contact effects were as strong in non-WEIRD as in WEIRD countries.

We also found that the effects of positive contact are typically larger than those of negative contact (14 studies; see also, Meleady et al., 2017). We replicated previous studies showing that high-quality forms of contact yield stronger effects than more casual, superficial forms (e.g., Davies et al., 2011), thereby emphasizing the special role that more intimate dimensions of contact (such as cross-group friendships) can play in building strong, meaningful affective ties through frequent interactions. This result notwithstanding, even mundane intergroup encounters, which may occur only occasionally and have less emotional depth, have proved effective in improving intergroup relations (Al Ramiah & Hewstone, 2013).

Moreover, we showed that the beneficial effects of contact replicate across different outcomes (13 studies), and that positive forms of contact were, furthermore, significantly negatively associated with prejudice over time (11 studies). On a critical note, the effect sizes of contact were relatively larger on positive (positivity and trust, particularly in the first set of analyses) compared to negative (i.e., subtle prejudice, which particularly taps into 'modern' forms of outgroup bias) outgroup orientations.

Personal versus Group Discrimination

Our set of studies allowed us to examine both personal and group forms of perceived discrimination. Neither form of discrimination inhibited contact effects in our analyses. Put

differently, perceived discrimination does not always hamper the effects of contact, since the effect of contact on prejudice-related outcomes was similar for both types of perceived discrimination (8 studies measuring group discrimination, 9 studies measuring personal discrimination). As such, we failed to replicate the rather pessimistic results from the single study reported by Tropp (2007), that positive effects of contact were no longer found at higher levels of perceived group discrimination, and instead confirmed the findings reported in the single study by Thomsen and Rafiqi (2016), that contact remained effective under high levels of perceived personal discrimination. Apparently, even harmful group perceptions and lived experiences of discrimination do not, at least at the level measured in these studies, hinder the ability of contact to reduce prejudice.

Dixon and colleagues (2005) did report that personal discrimination is often perceived as less threatening than discrimination towards one's ingroup. In the same vein, Tropp (2007) considered that personal discrimination may not necessarily worsen one's view on interethnic relations within one's country, whereas perceived group discrimination would. In line with Rafiqi and Thomsen (2020), we proposed that people likely rely on *intra*group comparisons when assessing personal discrimination experiences, whereas they would make *inter*group comparisons when assessing group discrimination. Contact effects could remain strong in the face of intragroup comparisons (as evinced here and in Thomsen & Rafiqi, 2016), but would weaken after intergroup comparisons (as evinced in Tropp, 2007).

Our analyses demonstrate that even if the set of intergroup comparisons turns out negatively, contact remains associated with more positive outgroup attitudes. In a way, perceived group discrimination relates to perceived intergroup threat and other individual differences (e.g., negative intergroup norms, need for closure, authoritarianism) that at first glance appear to be boundary conditions for contact to be beneficial, but in fact do not hinder contact effects at all – on the contrary, a so-called enhancement effect is regularly found for those individual differences (see also Turner et al., 2020). Moreover, in a final set of additional analyses (5 studies), we found

such an enhancement effect when examining intergroup norms as a moderator (see Section D in the SOM); whereas Allport (1954) argued that contact should take place in a supportive normative climate (which is surely true for planned interventions), its value in the real world appears to be even higher when the normative climate is unpropitious. This robustness check further indicates that the lack of inhibiting effects found for perceived threat and discrimination cannot be attributed to the type of data or the variables we have; rather, it indicates a consistent pattern.

If anything, contact effects are as robust among people that fall into the categories of "intolerant" and "victimized" in terms of their political-attitudinal makeup and previous experiences. Hence, we propose that while contact promotes more, and perceived threat and discrimination encourage less, intergroup tolerance, such perceptions do not necessarily constitute barriers to the beneficial outcomes of positive contact experiences.

Putting Contact into Practice

Historically, contact theory has been used to underpin policies aimed at improving intergroup relations across the world (e.g., between Blacks and Whites in the U.S. and in post-Apartheid South Africa, and between Protestants and Catholics in Northern Ireland). Our results show that contact works well among individuals who score higher on 'negative intergroup perceptions', exemplified in perceived intergroup threat and perceived (personal or group) discrimination. If positive contact experiences were limited to those most in favor of intergroup harmony or those who never or hardly ever experience discrimination, intergroup contact would have limited real-world relevance, and contact theory would run the danger of stating the obvious (see also Dixon et al., 2005).

Addressing the boundary conditions of a theory is a crucial part of theory development. Our research addressed the boundary conditions of contact theory, and we contend that the failure to find benefits of contact among highly intolerant or marginalized individuals appears to be the exception, not the norm (see Hodson, 2011; Kteily et al., 2019). As such, our findings

corroborate the preponderance of evidence pointing to beneficial (even enhanced) effects of contact among "prone-to-prejudice" subpopulations (Turner et al., 2020). Contact theory thus survived a critical test, and both early (e.g., Amir, 1969) and later (Dixon et al., 2005) pessimism appears unsupported by these findings.

These findings show that the boundary conditions of contact theory are substantially less restrictive than assumed, or contended, and thus the theory emerges stronger from these new tests. Real-world contact-based interventions should thus be confidently encouraged, consistent with Lemmer and Wagner's (2015) conclusion, based on their meta-analysis, that contact-based interventions are effective outside the lab. In their robust evaluation of the policy relevance of intergroup contact, Paluck and colleagues (2019) included only intervention studies in which outcomes were measured at least one day after the intervention began - since one can reasonably argue that testing whether the effects of an intervention extend beyond the first day of the intervention is a minimum policy standard of efficacy. Even this, in the real world, can be considered quite a low standard. Of greater relevance will be studies of residential, educational, and workplace contact over an extended period. For example, Reimer and colleagues (2022) recently confirmed the impact of school-based contact between Catholic and Protestant students over five years in middle- and high-schools in Northern Ireland. Notwithstanding the classic studies of residential (Deutsch & Collins, 1951) and workplace (Minard, 1952) contact conducted by some of the pioneers in this field, we know of no studies that examined real-life effects of contact over a prolonged period. Such interventions can also be applied in other life domains, such as the intergroup dynamics between those vaccinated against Covid-19 and those who are not. Although contact effects remain to be tested between these new social categories, the results of our studies offer some confidence in a successful application. But notwithstanding the importance of interventions for causal evidence, our focus has been on the effectiveness of contact, meaning its effects under real-world conditions; against this standard, we have shown that contact is highly effective, even among what might be considered intractable subsamples.

Despite our results showing that contact is effective among people who feel highly threatened or who perceive that they individually or their group are targets of discrimination, these people are likely to avoid contact: simply providing opportunities for contact does not mean that people necessarily engage with the outgroup (see Van Assche et al., 2018a; 2018b). As such, individuals experiencing threat or discrimination could miss out on the benefits of contact, simply because they do not experience it. Here, extensions of Allport's (1954) original idea of intergroup contact, based exclusively on face-to-face contact, can be applied. For example, it is now known that contact need not necessarily include direct, face-to-face experiences. Indeed, indirect forms of contact also help to reduce prejudice. Para-social contact experiences are especially promising in providing opportunities for contact with different others in an increasingly digital and virtual world (see Al Ramiah & Hewstone, 2013). Another effective form of indirect contact is extended contact (Wright et al., 1997). Knowing that fellow ingroup members experience positive contact appears to be especially effective among authoritarian and cognitively rigid individuals (Dhont et al., 2011). It seems plausible that such extended contact, which we know helps to promote future direct contact (Wölfer et al., 2019), may also be especially effective for people higher in perceived threat or discrimination.

Limitations and Future Research Directions

We acknowledge two main limitations, which should guide future research. First, our conclusions are based on correlational data. Future work should also include perceived threat or discrimination in both lab experiments and intervention studies on intergroup contact. Although we found support for cross-sectional contact effects across 34 studies and longitudinal contact effects across 11 studies, self-selection biases can only be fully eliminated, and incontrovertible causal evidence accrued, by controlled experimental designs. Experimental designs, which typically have more power to detect (small) interaction effects (McClelland & Judd, 1993), can manipulate (the salience of) experiences of threat and discrimination (although implementing such negative experiences does raise ethical concerns).

Future research is also needed to understand the role played by factors such as the historical and political context as potential boundary conditions of contact. Indeed, the challenges for intergroup contact are largest in settings that have emerged (or are emerging) from periods of prolonged (and often violent) intergroup conflict (e.g., in post-Apartheid South Africa, see Dixon et al., 2005, or in post-Good Friday Agreement Northern Ireland, where tensions are again flaring up). Although our set of samples comprised datasets including historically and currently disadvantaged groups (e.g., black (African) and colored South Africans, Malay and Indian Malaysians) who suffered from systemic and hostile segregation and discrimination, we encourage future studies to focus more on contact effects in such contexts, because historical context can also be a potential boundary condition. With relevance to perceived discrimination, it remains unknown what matters more: the extent to which inequality and discrimination are historically entrenched (and institutionalized), or more recent lack of equal status and discrimination. We were able to address this in a set of additional analyses, indicating that contact was beneficial even among those who did not perceive equal status; and that contact works among those perceiving higher levels of threat and discrimination, even if they do not perceive the groups to be of equal status (see Section D in the SOM).

The second limitation concerns the measurement of constructs. In some of the studies that measured contact quality (four out of 13 studies) or cross-group friendships (seven out of 16 studies), a single item was used. For the measures of outgroup trust and positivity, this was the case in five out of 11, and thirteen out of 27 studies, respectively. Some scales also suffered from low reliability, although this did not impact the results (see the SOM, Section C, Table F). Regarding the measure of perceived discrimination, specifically, experience matters, too. Discrimination covers a wide range of phenomena, from no-contact situations (e.g., a disadvantaged group member being rejected even before job interviews) to situations that exemplify intergroup contact dynamics (e.g., a disadvantaged group member being interviewed, but then rejected for the job). This multifaceted phenomenon can also be assessed in a variety of

ways, and scales including extreme examples of discrimination experiences often suffer from floor effects. We encourage future research to focus on the measurement of some types of contact and examine their value in promoting tolerance, especially in the face of different types of experienced discrimination.

Such studies should also investigate whether contact effects transfer from improved intergroup tolerance to improved personal well-being in the face of day-to-day discrimination, and whether the potential sedative effects of contact on reduced awareness of inequality, ethnic activism and collective action intentions also apply to those high and low in discrimination alike. Indeed, it is clearly not a desirable outcome for disadvantaged groups if reduced prejudice after contact goes hand in hand with false expectations for equality (Saguy et al., 2009). Fortunately, the sedative effects of intergroup contact, although they have been reported in several studies, seem rather modest in size, are no longer found when negative contact is also assessed, and often do not outweigh the positive boost in tolerance accompanying contact (Reimer et al., 2017; Reimer & Sengupta, in press).

Conclusion

To summarize, the present research provides further robust evidence of the efficacy of intergroup contact in the fight against prejudice. We have followed the call by Pettigrew and Tropp (2006) to study contact under more challenging conditions, and gain a better understanding, especially, of conditions that might inhibit the positive effects of intergroup contact (see also Pettigrew, 1998). Our purpose in pursuing this research question was to ensure that contact, championed to improve intergroup relations, is not merely useful to those showing relatively mild outgroup antipathy or experiencing mainly favorable intergroup encounters. Rather, it should also work for those who see a strong threat posed by the outgroup, and those who perceive higher levels of discrimination directed at themselves or their ingroup.

Our sanguine conclusion is that contact is no less effective for those high, compared with those low, in threat or discrimination. In addition, contact was reliably associated with reduced

prejudice and increased outgroup trust and positivity, in WEIRD and non-WEIRD countries, among both advantaged and disadvantaged groups, and both cross-sectionally as well as longitudinally. Our finding that contact is effective even among those feeling highly threatened and discriminated against by the outgroup not only serves to advance contact theory, but also confirms the value of contact as a key tool in interventions for reducing prejudice and intergroup conflict where it really counts.

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Table 1. *Meta-Analytic Effect Size Estimates of Intergroup Contact on Outgroup Orientations at Different Levels of Perceived Threat.*

		N	*k*	*B*	SD_{β}	SD_{res}	95% Conf. Int.	80% Cred. Int.	f^2	Q_b/Q_w
Total Set		163,658	190							
	contact			.19***	.10	.09	[.17; .20]	[.07; .30]	.05	2010.69***
	threat			-.34***	.19	.18	[-.37; -.30]	[-.57; -.10]	.21	9419.64***
	interaction			.01*	.05	.04	[.00; .02]	[-.04; .06]	.00	484.04***
	contact for low threat			.18***	.12	.11	[.16; .20]	[.04; .32]	.05	3008.43***
	contact for high threat			.19***	.10	.10	[.17; .21]	[.07; .32]	.05	2471.88***
Country	*WEIRD*	95,777	111							*1.04*
	contact			.18***	.10	.09	[.15.; .20]	[.06; .29]	.04	1259.60***
	threat			-.43***	.15	.15	[-.47; -.40]	[-.62; -.24]	.30	3930.85***
	interaction			.01	.06	.05	[.00; .02]	[-.05; .08]	.00	385.89***
	contact for low threat			.17***	.12	.12	[.14; .20]	[.02; .32]	.04	2109.66***
	contact for high threat			.19***	.11	.11	[.16; .22]	[.06; .32]	.05	1689.80***
	Non-WEIRD	67,881	79							
	contact			.20***	.10	.09	[.17; .22]	[.08; .31]	.05	740.38***
	threat			-.20***	.14	.14	[-.24; -.16]	[-.37; -.03]	.07	1937.09***
	interaction			.01	.04	.02	[.00; .01]	[-.01; .03]	.00	97.03[a]
	contact for low threat			.19***	.10	.10	[.17; .22]	[.07; .32]	.05	892.10***
	contact for high threat			.20***	.10	.09	[.17; .23]	[.08; .32]	.05	781.55***
Group Status	*Advantaged*	110,466	124							*0.24*
	contact			.19***	.10	.10	[.17.; .21]	[.07; .31]	.05	1077.74***
	threat			-.40***	.18	.18	[-.44; -.36]	[-.63; -.17]	.28	5749.86***
	interaction			.01	.05	.04	[.00; .02]	[-.05; .06]	.00	338.71***
	contact for low threat			.19***	.12	.12	[.16; .21]	[.03; .34]	.05	2180.92***
	contact for high threat			.20***	.10	.10	[.17; .21]	[.07; .32]	.05	1500.33***
	Disadvantaged	53,192	66							
	contact			.18***	.09	.09	[.15; .21]	[.07; .29]	.05	653.33***
	threat			-.20***	.11	.11	[-.24; -.17]	[-.34; -.06]	.06	860.67***
	interaction			.01	.05	.04	[-.01; .02]	[-.04; .05]	.00	145.31***
	contact for low threat			.17***	.10	.10	[.13; .21]	[.06; .28]	.04	815.18***
	contact for high threat			.19***	.11	.10	[.15; .23]	[.06; .32]	.05	971.55***

Type of Contact	*Quantity*	35,398	37							*18.40***
	contact			.14***	.08	.08	[.11; .17]	[.04; .23]	.03	264.32***
	threat			-.32**	.18	.18	[-.39; -.26]	[-.55; -.10]	.18	1599.54***
	interaction			.02*	.04	.02	[.00; .03]	[-.01; .05]	.00	56.79*
	contact for low threat			.12***	.09	.08	[.09; .16]	[.02; .23]	.02	294.22***
	contact for high threat			.16***	.09	.09	[.12; .19]	[.04; .27]	.04	352.07***
	Quality	49,364	51							
	contact			.22***	.09	.08	[.19; .25]	[.12; .33]	.06	484.59***
	threat			-.30***	.17	.17	[-.36; -.25]	[-.51; -.09]	.16	2303.26***
	interaction			-.01	.06	.05	[-.02; .01]	[-.07; .06]	.00	183.91***
	contact for low threat			.23***	.11	.11	[.19; .27]	[.09; .37]	.08	827.87***
	contact for high threat			.22***	.09	.08	[.19; .24]	[.11; .32]	.06	479.79***
	Friends	31,606	37							
	contact			.20***	.10	.09	[.16; .23]	[.08; .31]	.05	329.27***
	threat			-.34***	.22	.22	[-.42; -.26]	[-.62; -.06]	.25	2640.20***
	interaction			.01	.06	.04	[-.01; .03]	[-.05; .06]	.00	110.39***
	contact for low threat			.19***	.09	.08	[.16; .22]	[.09; .30]	.05	272.86***
	contact for high threat			.20***	.12	.12	[.15; .25]	[.05; .35]	.06	698.45***
	Positive	22,093	31							
	contact			.22***	.11	.10	[.15; .28]	[.09; .34]	.07	434.33***
	threat			-.39***	.16	.16	[-.47; -.30]	[-.59; -.19]	.27	1011.79***
	interaction			.02	.05	.03	[.00; .03]	[-.02; .05]	.00	46.56*
	contact for low threat			.20***	.12	.11	[.13; .27]	[.06; .34]	.07	552.37***
	contact for high threat			.23***	.11	.11	[.16; .30]	[.09; .36]	.08	515.61***
	Negative	25,197	34							
	contact			-.14***	.08	.07	[-.18; -.10]	[-.23; -.04]	.03	212.84***
	threat			-.37***	.19	.19	[-.45; -.28]	[-.61; -.13]	.25	1506.50***
	interaction			-.02**	.05	.04	[-.05; .00]	[-.07; .02]	.00	67.25***
	contact for low threat			-.13***	.13	.13	[-.20; -.06]	[-.29; .03]	.03	686.11***
	contact for high threat			-.17***	.09	.08	[-.21; -.13]	[-.27; -.06]	.04	241.94***

Outgroup Orientations	*Positivity*	73,608	94							*4.34*
	contact			.21***	.11	.11	[.18; .23]	[.07; .34]	.06	1200.73***
	threat			-.27***	.18	.17	[-.32; -.22]	[-.49; -.05]	.14	3964.84***
	interaction			.02**	.05	.04	[.00; .03]	[-.03; .07]	.00	227.91***
	contact for low threat			.19***	.12	.11	[.15; .22]	[.04; .33]	.05	1699.60***
	contact for high threat			.22***	.11	.11	[.19; .25]	[.08; .35]	.07	1436.24***
	Trust	39,719	47							
	contact			.16***	.08	.08	[.14; .19]	[.07; .26]	.04	307.99***
	threat			-.29***	.15	.15	[-.34; -.24]	[-.47; -.10]	.13	1096.13***
	interaction			.01	.04	.03	[-.01; .02]	[-.03; .04]	.00	78.17**
	contact for low threat			.16***	.09	.09	[.13; .20]	[.05; .26]	.03	429.18***
	contact for high threat			.17***	.09	.08	[.14; .20]	[.07; .27]	.04	339.00***
	Subtle Prejudice	50,331	49							
	contact			-.17***	.08	.08	[-.20; -.14]	[-.27; -.07]	.04	407.63***
	threat			.47***	.16	.15	[-.52; -.42]	[-.68; -.28]	.37	2037.71***
	interaction			.00	.06	.05	[-.02; .02]	[-.06; .06]	.00	167.00***
	contact for low threat			-.18***	.09	.09	[-.22; -.14]	[-.28; -.05]	.04	836.24***
	contact for high threat			-.17***	.09	.09	[-.21; -.14]	[-.29; -.06]	.04	539.59***
Longitudinal Designs		38,743	39							
	contact			.08***	.05	.04	[.06; .10]	[.02; .13]	.01	113.17***
	threat			-.12***	.09	.09	[-.15; -.08]	[-.23; -.01]	.02	373.71***
	interaction			.01	.05	.04	[.00; .03]	[-.04; .07]	.00	111.89***
	contact for low threat			.06***	.07	.06	[.04; .08]	[-.01; .13]	.01	175.44***
	contact for high threat			.09***	.06	.06	[.06; .11]	[.02; .16]	.01	172.42***

Note: β = mean uncorrected effect size; SD_β = observed standard deviation of the effect size; SD_{res}= true residual variance; Conf. Int. = confidence; Cred. Int. = credibility interval; f^2 = Cohen's effect size indicator for multiple regressions; Q_b = homogeneity of the contact effect size between classes (*in italics*); Q_w = homogeneity of effect sizes within classes. [a]: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Table 2. *Meta-Analytic Effect Size Estimates of Intergroup Contact on Outgroup Orientations at Different Levels of Perceived Discrimination.*

		N	*k*	β	SD_β	SD_{res}	95% Conf. Int.	80% Cred. Int.	f^2	Q_b/Q_w
Total Set		76,000	79							
	contact			.21***	.10	.10	[.18; .24]	[.09; .33]	.06	909.49***
	discrimination			-.11***	.07	.06	[-.13; -.09]	[-.19; -.02]	.02	437.03***
	interaction			.01*	.05	.04	[.00; .03]	[-.03; .06]	.00	189.44***
	contact for low discrimination			.20***	.11	.11	[.17; .23]	[.06; .34]	.06	1193.89***
	contact for high discrimination			.23***	.10	.10	[.20; .26]	[.10; .35]	.07	944.65***
Country	*WEIRD*	37,658	37							*0.00*
	contact			.21***	.09	.09	[.17.; .25]	[.10; .32]	.06	408.45***
	discrimination			-.14***	.06	.05	[-.17; -.11]	[-.21; -.05]	.02	171.91***
	interaction			.01	.05	.04	[-.01; .03]	[-.04; .06]	.00	98.39***
	contact for low discrimination			.20***	.10	.10	[.16; .25]	[.08; .33]	.06	472.42***
	contact for high discrimination			.22***	.11	.10	[.18; .27]	[.10; .35]	.07	507.82***
	Non-WEIRD	38,342	42							
	contact			.21***	.11	.10	[.17; .25]	[.08; .34]	.06	500.92***
	discrimination			-.07***	.07	.06	[-.10; -.05]	[-.15; .00]	.01	181.59***
	interaction			.02	.05	.04	[.00; .03]	[-.03; .06]	.00	90.86***
	contact for low discrimination			.20***	.12	.12	[.16; .25]	[.05; .35]	.06	721.10***
	contact for high discrimination			.23***	.10	.09	[.19; .26]	[.11; .35]	.07	436.65***
Group Status	*Advantaged*	23,095	23							*0.10*
	contact			.20***	.09	.08	[.16.; .25]	[.10; .31]	.05	210.57***
	discrimination			-.14***	.06	.06	[-.17; -.10]	[-.21; -.06]	.02	101.44***
	interaction			.01	.05	.04	[-.02; .04]	[-.04; .06]	.00	59.44***
	contact for low discrimination			.20***	.10	.10	[.14; .26]	[.07; .33]	.06	312.66***
	contact for high discrimination			.21***	.09	.09	[.16; .26]	[.10; .32]	.06	244.39***
	Disadvantaged	52,905	56							
	contact			.22***	.11	.10	[.18; .25]	[.09; .34]	.06	695.49***
	discrimination			-.09***	.07	.06	[-.11; -.07]	[-.17; -.01]	.01	307.95***
	interaction			.02*	.05	.04	[.00; .03]	[-.03; .06]	.00	129.03***
	contact for low discrimination			.20***	.12	.11	[.16; .24]	[.06; .35]	.06	880.83***
	contact for high discrimination			.23***	.10	.10	[.20; .27]	[.11; .36]	.07	692.98***

Type of Contact	*Quantity*	13,553	11						*29.81****
	contact			.21***	.06	.06	[.16; .25]	[.14; .28]	.05	58.24***
	discrimination			-.12***	.10	.10	[-.19; -.05]	[-.24; .00]	.03	164.13***
	interaction			.03	.04	.03	[.00; .05]	[-.02; .07]	.00	26.08**
	contact for low discrimination			.18***	.08	.07	[.13; .23]	[.09; .27]	.04	85.28***
	contact for high discrimination			.23***	.08	.07	[.18; .29]	[.14; .33]	.07	99.87***
	Quality	12,309	14							
	contact			.24***	.09	.09	[.18; .30]	[.13; .35]	.07	135.26***
	discrimination			-.13***	.09	.08	[-.18; -.08]	[-.23; -.03]	.03	94.51***
	interaction			-.01	.06	.05	[-.04; .03]	[-.07; .05]	.00	41.44***
	contact for low discrimination			.25***	.10	.10	[.18; .31]	[.12; .37]	.08	140.78***
	contact for high discrimination			.24***	.10	.09	[.18; .30]	[.12; .36]	.07	140.53***
	Friends	29,826	28							
	contact			.25**	.10	.10	[.20; .30]	[.13; .37]	.08	351.72***
	discrimination			-.12***	.05	.04	[-.14; -.09]	[-.16; -.07]	.02	68.36**
	interaction			.00	.05	.04	[-.02; .03]	[-.05; .05]	.00	75.47***
	contact for low discrimination			.24***	.12	.11	[.18; .30]	[.10; .38]	.08	483.11***
	contact for high discrimination			.25***	.11	.10	[.20; .31]	[.12; .38]	.08	412.35***
	Positive	7,364	8							
	contact			.25***	.05	.04	[.21; .29]	[.20; .30]	.07	22.06**
	discrimination			-.08*	.07	.06	[-.13; -.02]	[-.14; .00]	.01	36.41***
	interaction			.03*	.02	.00	[.01; .05]	[.03; .03]	.00	4.51
	contact for low discrimination			.23***	.06	.05	[.18; .28]	[.16; .30]	.06	32.47***
	contact for high discrimination			.28***	.05	.04	[.24; .32]	[.24; .33]	.09	19.73**
	Negative	12,948	18							
	contact			-.09***	.06	.05	[-.12; -.06]	[-.15; -.03]	.01	48.17***
	discrimination			-.06***	.04	.03	[-.09; -.04]	[-.10; -.03]	.01	26.63
	interaction			-.03**	.04	.02	[-.05; -.01]	[-.06; .00]	.00	25.61
	contact for low discrimination			-.07***	.07	.06	[-.11; -.04]	[-.14; .00]	.01	59.30***
	contact for high discrimination			-.12***	.05	.04	[-.15; -.09]	[-.17; -.07]	.02	38.27**

Discrimination	*Personal*	34,927	33						*0.01*
	contact			.21***	.11	.10	[.16.; .26]	[.08; .34]	.06	471.58***
	discrimination			-.11***	.04	.03	[-.13; -.09]	[-.15; -.07]	.01	69.32***
	interaction			.01[a]	.04	.02	[.00; .03]	[-.02; .04]	.00	53.50*
	contact for low discrimination			.20***	.11	.11	[.15; .25]	[.06; .34]	.06	526.37***
	contact for high discrimination			.22***	.11	.11	[.17; .28]	[.09; .36]	.07	522.29***
	Group	41,073	46						
	contact			.21***	.10	.09	[.18; .25]	[.10; .33]	.06	437.91***
	discrimination			-.10***	.09	.08	[-.13; -.07]	[-.21; .00]	.02	367.56***
	interaction			.01	.06	.05	[-.01; .03]	[-.05; .07]	.00	135.85***
	contact for low discrimination			.20***	.11	.11	[.16; .25]	[.06; .34]	.06	666.30***
	contact for high discrimination			.23***	.09	.09	[.20; .26]	[.12; .34]	.07	422.34***
Outgroup Orientations	*Positivity*	47,096	55						*0.37*
	contact			.21***	.12	.12	[.17; .25]	[.06; .36]	.07	825.03***
	discrimination			-.10***	.06	.05	[-.12; -.08]	[-.17; -.04]	.01	179.51***
	interaction			.02*	.05	.03	[.00; .03]	[-.02; .06]	.00	109.82***
	contact for low discrimination			.20***	.13	.13	[.15; .25]	[.04; .36]	.07	970.56***
	contact for high discrimination			.23***	.12	.11	[.19; .27]	[.09; .38]	.08	799.19***
	Trust	15,732	16						
	contact			.23***	.06	.06	[.19; .26]	[.16; .29]	.06	63.39***
	discrimination			-.17***	.08	.07	[-.21; -.12]	[-.26; -.07]	.04	119.04***
	interaction			.00	.06	.05	[-.03; .04]	[-.06; .07]	.00	58.38**
	contact for low discrimination			.22***	.09	.09	[.16; .27]	[.11; .33]	.06	179.67***
	contact for high discrimination			.23***	.07	.06	[.19; .27]	[.15; .31]	.06	89.13***
	Subtle Prejudice	13,172	8						
	contact			-.20***	.03	.01	[-.21; -.18]	[-.21; -.18]	.04	9.67
	discrimination			-.05***	.03	.02	[-.07; -.02]	[-.07; -.02]	.00	14.79*
	interaction			.00	.04	.03	[-.02; .03]	[-.03; .04]	.00	16.78*
	contact for low discrimination			-.18***	.04	.03	[-.22; -.15]	[-.23; -.14]	.03	28.22***
	contact for high discrimination			-.20***	.05	.04	[-.24; -.16]	[-.25; -.15]	.04	32.61***

Longitudinal Designs		32,727	25						
	contact			.10***	.06	.05	[.07; .12]	[.03; .16]	.01	116.55***
	discrimination			-.06***	.04	.02	[-.07; -.04]	[-.08; -.03]	.00	43.16***
	interaction			.01	.05	.04	[-.01; .03]	[-.05; .06]	.00	83.39***
	contact for low discrimination			.10***	.07	.06	[.06; .13]	[.02; .17]	.01	148.61***
	contact for high discrimination			.10***	.07	.06	[.06; .13]	[.02; .17]	.01	154.46***

Note: β = mean uncorrected effect size; SD_{β} = observed standard deviation of the effect size; SD_{res}= true residual variance; Conf. Int. = confidence; Cred. Int. = credibility interval; f^2 = Cohen's effect size indicator for multiple regressions; Q_b = homogeneity of the contact effect size between classes (*in italics*); Q_w = homogeneity of effect sizes within classes. [a]: $p < .10$; [*]: $p < .05$; [**]: $p < .01$; [***]: $p < .001$.