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# Effects of intergroup contact and relative gratification vs. deprivation on prejudice on both sides of the U.S./Mexico status divide

Anja Eller<sup>1,2</sup> | Dominic Abrams<sup>1</sup> | Stephen C. Wright<sup>3</sup> | Ben Davies<sup>1</sup>

<sup>1</sup>School of Psychology, University of Kent, Canterbury, UK

<sup>2</sup>Faculty of Psychology, UNAM, Mexico

<sup>3</sup>Department Psychology, Simon Fraser University, Burnaby, BC, Canada

## Correspondence

Dominic Abrams, School of Psychology, University of Kent, Canterbury CT2 7NP, UK.

Email: d.abrams@kent.ac.uk

## Abstract

A study in the U.S.–Mexican intergroup context examined how collective relative gratification (RG) versus deprivation affects the relationship between intergroup contact and interpersonal closeness and subtle prejudice towards an out-group. Participants were Mexican university students in Mexico ( $N = 239$ ) and non-Mexican students in California ( $N = 90$ ). As predicted, Mexicans experienced less gratification/higher relative deprivation (RD), and low quality intergroup contact and expressed lower interpersonal closeness and higher subtle prejudice than U.S. Americans. Differences between countries were larger amongst participants reporting higher RD. Second-stage moderated mediation analysis showed that the mediating effects of contact between country and interpersonal closeness and subtle prejudice, respectively, were larger amongst participants who felt relatively gratified than those who felt relatively deprived. These findings underline the importance of recognizing the moderating effect of differences in the RG versus RD levels of minority and majority groups when anticipating the potential benefits of intergroup contact for prejudice reduction.

## 1 | INTRODUCTION

This article examines whether the feelings of relative gratification (RG) or relative deprivation (RD) (Crosby, 1982), which are likely to be associated with membership of low- and high-status groups, respectively, moderate the relationship between the quality of intergroup contact and interpersonal closeness and subtle prejudice towards the out-group. In his widely cited reformulation of Allport's (1954) contact hypothesis, Pettigrew (1998a) explicitly drew attention to the societal context within, which intergroup contact takes place. Pettigrew and Tropp's (2006) meta-analysis revealed that intergroup

contact was less effective in reducing prejudice among minority (low-status) than majority (high-status) groups. Low-status groups are often economically poorer than high-status groups, and thus, individual members may be more likely to experience RD. Members of high-status groups, in contrast, are more likely to experience RG. However, within groups of either status, some individuals will experience more gratification or deprivation than others. The key question investigated in the present research is: How might intergroup RG or RD help or hinder the effectiveness of intergroup contact in creating personal connections with the out-group and improving intergroup attitudes when group status is unequal?

Anja Eller sadly died shortly before the final revisions were made on this paper, which were completed by her original co-authors, Dominic Abrams and Steve Wright. Further final data analyses were conducted by Ben Davies who joined as a further co-author.

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## 1.1 | Intergroup contact

Contact between members of different social groups, particularly when accompanied by certain “facilitating” conditions, including cooperation, friendship potential, institutional support, and equality of status, has been amply demonstrated to improve intergroup relations, reduce prejudice, stereotyping, and negative behavioral tendencies (Pettigrew & Tropp, 2006). Unfortunately, in field, rather than laboratory, settings the desirable facilitating conditions are rarely all present. Research has generally focused on contact situations where there are macro-societal status differentials (Pettigrew, 1998a), that is, contact between members of majority/high status and minority/low status groups (Eller & Abrams, 2003, 2004; Henry & Hardin, 2006; Hopkins & Kahani-Hopkins, 2006; Tropp, 2007). Tropp and Pettigrew’s (2005) meta-analysis not only indicated that the positive effects of contact on prejudice tend to be weaker among minority groups than among majority groups, but they also found strong evidence for the moderating role of group status. However, they noted that research still needs to test the processes involved in weaker contact-prejudice effects for minority group relative to majority group members when the minority group is devalued. The authors call for future research to “directly test whether such variables as perceived discrimination, or perceived differences in group status, might inhibit the effects of contact on prejudice among members of minority status groups, but not among members of majority status groups” (p. 956).

Intergroup contact research has typically considered group status to be a moderator of the relationship between contact and prejudice (Tausch, Hewstone, Kenworthy, Cairns, & Christ, 2007; Tropp & Pettigrew, 2005). However, a conceptual question arises regarding how an exogenous, temporally prior, variable such as historical group status can moderate effects of a temporally subsequent individual-level variable, such as contact. Here, we suggest that status may affect the likely quality of contact and that a psychological response to status—the perception of RG or RD—is likely to moderate how contact affects prejudice.

The present research examines whether intergroup relative gratification versus deprivation (IRGD), a likely consequence of status differentials (Osborne, Sibley, & Sengupta, 2015), moderates the relationship between contact and relevant outcome variables. Specifically, the research examines how intergroup contact and IRGD combine to influence interpersonal closeness with and subtle prejudice towards the out-group. We test this among both Mexicans in Mexico City (a relatively low status group) and Americans in California (the relatively high status group). Thus, this research adds to the relatively few studies that examine the impact of contact on both minority and majority groups (Eller & Abrams, 2003, 2004; Henry & Hardin, 2006; Hopkins & Kahani-Hopkins, 2006; Tropp, 2007). Moreover, it is one of a very few (see Eller & Abrams, 2003, 2004; Stephan, Diaz-Loving, & Duran, 2000) to investigate the effects of group status differences involving national groups.

## 1.2 | Mexican-US relations

Mexicans and European-Americans differ in terms of their history, religion, ethnic origin, and language, and Mexican/US relations

have historically been characterized by difficulties and even war (Riding, 1985). The two countries are also asymmetrical in terms of power and status; Mexico’s gross national product is comparable to that of New York or California (Gilmer, 2002). Despite these differences and animosities, the two countries have been in a relatively stable political and economic relationship, formalized in the 1994 North American Free Trade Agreement (NAFTA) between Mexico, the United States, and Canada. The data for the present study were collected in 1997/1998, in the midst of this period of relative stability.

Mexican/US relations represent a valuable setting to test the effects of contact between low- and high-status groups. The groups are economically and sociopolitically interdependent (cf., Eller & Abrams, 2004). Intercultural contact has been strongly supported by national leaders including Ernesto Zedillo and Bill Clinton who were in power at the time of the study (Woolley & Peters, 1995). A few years later, at a meeting with Vicente Fox George Bush stated that “the United States has no more important relationship in the world than our relationship with Mexico” (US Department of State, 2002). Nonetheless, representative surveys of Mexican and American citizens persistently reveal ambivalence, characterized by the desire for closer ties, on the one hand and deep suspicions, on the other. The Zogby Poll (Zogby International, 2006) showed that citizens of both nations believed that the United States is more likely to consider Mexico a distant neighbor than a friend, and nearly as many Mexicans thought the United States considered them a threat as thought the United States considered them a partner.

## 1.3 | Relative gratification and deprivation

Runciman (1966) stated that “A is relatively deprived of X when (a) he does not have X, (b) he sees some other person or persons [...] having X (whether or not this is [...] in fact the case), (c) he wants X, and (d) he sees it as feasible that he should have X” (p. 10). Runciman underscored that RD is subjective and need not correlate with actual, objective deprivation. Walker and Pettigrew (1984) highlighted the inherently *comparative* nature of RD and that these comparisons can be made between persons but can also be group to group, distinguishing between feelings of “egoistical” (personal) and “fraternalistic” (intergroup) deprivation. It is intergroup deprivation that has consequences for group-level phenomena such as prejudice (cf., Guimond & Dube-Simard, 1983), and therefore, may also be relevant when considering the impact of intergroup contact (Abrams & Randsley de Moura, 2002; Pettigrew, 2002; Tougas & Beaton, 2002; Vanneman & Pettigrew, 1972; Zagefka & Brown, 2005).

In contrast to RD, RG is experienced when social comparisons lead to the sense that one (or one’s in-group) is receiving relatively more than the other party. Although it has been identified as theoretically important (e.g., Vanneman & Pettigrew, 1972) RG has received relatively little empirical examination. Logically, one might expect that if RD is associated with greater prejudice, RG should be associated with less prejudice (Damburn, Taylor, McDonald, Crush, & Méot, 2006). However, research suggests that there may be a

bilinear or V-curve relationship (Dambrun et al., 2006; Grofman & Muller, 1973). For example, Guimond and Dambrun (2002) showed experimentally that higher levels of both RD and RG were associated with higher levels of prejudice.

The present study followed the approach of Guimond and Dube-Simard (1983) and Abrams and Grant (2012), measuring IRGD as opposite ends of a single continuum with higher scores representing feelings of deprivation and lower scores representing feelings of gratification (cf., Dambrun et al., 2006).

Two recent articles examined the interplay between intergroup contact and RD. Koschate, Hofmann, and Schmitt (2012) examined the relationship between RD and intergroup contact within the context of German reunification. In a longitudinal study, West and East Germans who initially reported higher intergroup RD engaged in more intergroup contact two and four years later. There was no evidence for the reverse causal relationship or moderation by group membership. This research indicates that RD may motivate contact, but does not consider the possibility that RD and contact may combine to affect other important intergroup outcomes.

Cakal, Hewstone, Schwär, and Heath (2011) conducted two studies in South Africa that considered (among a number of other interesting findings) the combined impact of intergroup contact and RD in predicting collective action and support for policies benefiting the in-group. Study 1 showed that, among Black students, contact with Whites moderated the effects of RD on collective action. Specifically, among Blacks with lower levels of contact, higher group RD was associated with more collective action, but among Blacks with higher levels of contact, RD and collective action were unrelated. Conversely, Study 2, which focused on White South Africans, showed no interaction effects between RD and contact with Blacks in predicting collective action.

This research provides initial evidence of the possibility of a complex relationship between contact and RD in predicting important intergroup outcomes. However, Cakal et al.'s studies differ from the present research in important ways. First, although White South Africans had, for decades, directly oppressed Blacks, the legitimacy of their position and their power have been greatly reduced. In fact, Study 2 showed that many Whites felt relatively deprived compared to Blacks. We expect this is not the case for Americans when comparing to Mexicans, where they should report RG. In addition, Cakal et al. focused on collective action and support for policies, outcome variables commonly considered in RD research. The present research focuses on prejudice and interpersonal closeness, outcome variables more commonly investigated in contact research.

## 2 | THE CURRENT STUDY

Walker and Pettigrew (1984) noted that RD theory does not explicitly specify, which dimensions might be most relevant for comparison. Given NAFTA and the fairly obvious discrepancies in gross national product and economic power, economic success is likely a highly salient dimension of comparisons between Mexicans and Americans. This may be particularly true for the low-status group,

Mexicans. However, it should also be the case for the high-status group, and particularly for Californians at the time of the study, as there had been a highly publicized influx of legal and illegal immigrants—in 2000, 35.2% of California's population was of Latino origin (US Census Bureau, 2007)—and much of the conversation was around their impact on the labor force.

### 2.1 | Predictions

The present research examines two outcomes understood to follow from positive intergroup contact: higher interpersonal closeness with, and reduced subtle prejudice towards, the out-group (see Tropp & Pettigrew, 2005; Wright, Brody, & Aron, 2005). The present project is one of the few to examine these outcomes for both high- and low-status group members within the same study. For this reason, we focus not on the unipolar concept of low to high perceived deprivation but on the bipolar concept that spans high perceived gratification through no differences through to high perceived deprivation (IRGD).

Interpersonal closeness is the extent to which people feel a psychological connection to the out-group. Closeness should be affected positively by the quality of contact because high quality contact creates a psychological link between self and the (out-) group (Eller & Abrams, 2003, 2004; Eller, Abrams, & Zimmermann, 2011; Vonofakou, Hewstone, & Voci, 2007, Study 2; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997).

The intergroup differences subscale of Pettigrew and Meertens' (1995) subtle prejudice scale offers a very different measure that reflects more subtle forms of prejudice seen when outright expressions of antipathy may not be seen as acceptable. It measures the extent to which the out-group as a whole is believed to share (or not) characteristics and beliefs that are valued by the in-group (e.g., honesty, sexual norms, etc.). Thus, the perception that out-groups do not share these characteristics represents a subtle form of derogation. The subtle prejudice scale has been used in numerous countries and intergroup settings and appears to have cross-contextual validity. Consistent with previous work, we predict that more positive intergroup contact would be associated with lower subtle prejudice (e.g., Eller & Abrams, 2003; Pettigrew, 1998b; Voci & Hewstone, 2003).

We regard country to be an independent (historically prior) variable to others in the study. Conceptually, we consider country to reflect intergroup status differences. Given the historical status differences between countries, we expect that that Mexicans will report being relatively deprived and that Americans will report being relatively gratified. These feelings will be part of the psychological context, in which cross-group contact occurs.

In addition, we expect that people's IRGD should affect the experience of intergroup contact differently in the two countries, such that quality of intergroup contact should be higher in the United States than in Mexico. Statistically it is necessary to choose whether IRGD or contact should serve as a moderator and which as a mediator (no variable can be both). We chose contact as a mediator between

country status and interpersonal closeness and subtle prejudice. We treat IRGD as the potential moderator of the effect of contact on these variables. However, a conservative test of this model also involves statistically accounting for the possibility that IRGD moderates the effect of both country status (first-stage moderation) and of contact (second-stage moderated mediation) on the dependent variables (see Hayes, 2013, and explained more fully below). It is the latter, second-stage, effect that is of central interest.

The moderation could be hypothesized as operating in different forms, which we label the “RD-mitigation” and “RG-augmentation” predictions.

## 2.2 | Relative deprivation mitigation

Previous evidence suggests that higher intergroup RD is associated with more prejudice and lower interpersonal closeness to out-group members (Eller et al., 2011; Grant & Brown, 1995; Hopkins, Greenwood, & Birchall, 2007; Pettigrew, 2002). Therefore, it seems likely that the greatest scope for positive contact to reduce prejudice and increase interpersonal closeness will be among those who experience the most RD. Correspondingly, among those who experience little RD, there may be relatively little scope for contact to enhance closeness or reduce subtle prejudice (for a similar line of argumentation with respect to right-wing authoritarianism and social dominance, see Dhont & van Hiel, 2009; Hodson, 2011). Consequently, the second-stage moderation would show that contact reduces prejudice and increases closeness amongst people who feel relatively deprived, but has less or no effect on interpersonal closeness among people who feel relatively gratified. Statistically, because of the higher levels of deprivation can be expected to be associated with lower status, this also implies that the first-stage moderation should reveal that the effect of IRGD on the dependent variables is larger among Mexicans than Americans.

## 2.3 | Relative gratification augmentation

Intergroup contact appears to have stronger positive effects on majority group members' intergroup attitudes than minority group members' attitudes (e.g., Tropp & Pettigrew, 2005). Therefore, it seems plausible that contact should have particularly positive effects for people who perceive their group to have a relative advantage. The more that people feel relatively gratified, the easier it may be to disregard intergroup differences and the more likely it is that contact can foster a sense of benevolence and connection with out-group members (e.g., Smith, Spears, & Oyen, 1994). Previous research has not considered this possibility. If this hypothesis is supported, the second-stage moderation effect (contact  $\times$  IRGD interaction) would still be significant but the effect of contact would be larger among people who feel relatively gratified than among those who feel relatively deprived. This would also imply a first-stage moderation effect of IRGD that is larger among Americans than Mexicans.

## 3 | METHOD

### 3.1 | Participants and procedure

Participants in Mexico were 202 female and 37 male ( $N = 239$ ) first- and second-year Mexican university students at two universities in Mexico City. They were enrolled in pedagogy, political science, history, and philosophy courses and had a mean age of 19.6 years (range of 17–25). They volunteered to participate and received no form of payment.

Participants in the United States included in the analyses were 50 female and 20 male White Americans, and 12 female and nine male White “foreigners” of various nationalities that were undergraduate students at the University of California, Santa Cruz. Analyses showed no significant differences between American and foreign nationals on the included variables. Hence, this group will be referred to as “Americans” henceforth. An additional 23 non-white minority group members that participated were removed from the analyses. The final sample size was  $N = 91$ . Participants were from different years and a range of disciplines, but were all enrolled in an introductory psychology class and received course credit for their participation. Participants' mean age was 20.1 years (range of 16–27).

In both countries, questionnaires were distributed in individual envelopes during a 20–30 min class session and participants were instructed to complete their questionnaires privately and without discussion and return them in their envelopes. After all participants completed the questionnaires, they were informed about the aim of the research and thanked.

Power analysis conducted with the R package WebPower (Zhang & Yuan, 2018) confirmed 97% and 99% power in detecting the direct effect of country status on interpersonal closeness and subtle prejudice, respectively. Further analysis confirmed 99% power to detect the first-stage moderation effect of IRGD on the association between country status and both interpersonal closeness and subtle prejudice. Power analysis of the conditional indirect effects (second-stage moderated mediation) confirmed 99% power for detecting the indirect effect of contact on interpersonal closeness at low- and high-levels of IRGD. Additionally, 89% and 25% power was achieved for detecting the indirect effect of contact on subtle prejudice at low- and high-levels of IRGD, respectively. Data from the study and the R-code for the power analysis are available from the corresponding author on request.

### 3.2 | Measures

The translation of the questionnaire from English into Spanish was conducted by two native speakers of Spanish who are fluent in English. It was then cross-checked by three bilinguals who are Mexican or live in Mexico (cf. Brislin, 1976).

### 3.2.1 | Predictor variables

Quality of Contact was measured using items drawn from Eller and Abrams (2003, 2004) and Islam and Hewstone (1993), asking respondents whether their contact with Americans (Mexicans) was pleasant (*very unpleasant*–*very pleasant*), intimate (*very superficial*–*very intimate*), cooperative (*very competitive*–*very cooperative*), and among equals (*definitely not*–*definitely yes*), and how often they had contact as friends (*not at all*–*very often*). Responses were provided on 7-point Likert scales, with higher scores denoting higher quality of contact. Cronbach's  $\alpha$  reliability coefficients were 0.82 (Mexico) and 0.70 (US), respectively.

### 3.2.2 | Moderating variable

IRGD was measured using an item drawn from Runciman (1966) and Vanneman and Pettigrew (1972) that asked for judgments of the in-group's economic situation compared with the out-group's. This was worded: "Compared to most Americans[Mexicans] living in this area, would you say that over the last five years Mexicans [Americans] in general have been economically a lot worse off/ worse off/ the same/ better off/ a lot better off?" Responses were provided on 5-point Likert scales, with a score of 1 denoting maximum RG (other country worse off) and a score of 5 denoting maximum RD (other country better off).

### 3.2.3 | Dependent variables

Interpersonal closeness was measured with the Inclusion of Other in the Self Scale (IOS; Aron, Aron, and Smollan (1992). IOS is a single-item measure consisting of a series of seven pairs of circles that increase in their degree of overlap. One circle in each pair represents the self and the other the relevant out-group. Respondents select the pair of circles that best describes their feelings of connection with the particular out-group member they have in mind (see also Eller et al., 2011; Vonofakou et al., 2007, Study 2).

Subtle prejudice was measured with Pettigrew and Meerten's (1995) intergroup differences subscale: "How different or similar do you think Mexicans [Americans] living here are to American [Mexican] people like yourself... (*very different* to *very similar*) (a) in how honest they are?, (b) in the values that they teach their children?, (c) in their religious beliefs and practices?, (d) in their sexual values or sexual practices?"

## 4 | RESULTS

Status differences (represented by Country) are an exogenous variable, and thus, were treated as the independent variable in all analyses. Our analytic strategy was first to compare participants across the two countries on all variables in order to detect country-specific differences. We then examined the correlations among variables, followed by the main analysis testing the moderating effect of IRGD on the country- status–contact–outcome links. The latter analysis proceeded in steps, testing first-stage moderation (IRGD moderating the effect of status), second-stage mediation (IRGD moderating the effect of contact), and finally, second-stage moderated mediation (IRGD moderating the mediating effect of contact), using PROCESS Model 15 in SPSS (Hayes, 2013). The independent variable, mediator, and moderator were mean-centered prior to analysis. All analyses used 5,000 bootstrap samples to obtain bias corrected confidence intervals.

### 4.1 | Comparisons across countries

A MANOVA across the set of measures showed that there was a significant multivariate effect of country status,  $F(5, 286)=133.32$ ,  $p<.001$ , partial  $\eta^2=0.70$ . All univariate effects were significant (all  $F_s>74.0$ , all  $p_s<.001$ ). As predicted, Americans reported higher quality of contact, lower perceived IRGD, higher levels of interpersonal closeness, and lower subtle prejudice than Mexicans (see Table 1). On the IRGD measure Mexicans on average experienced RD, scoring above the scale mid-point ( $t(229)=13.45$ ,  $p<.001$ ),

**TABLE 1** Means, standard deviations,  $F$  values, effect sizes, and zero order correlations (Pearson's  $r$ ) among variables for Mexicans ( $N = 239$ ; above the diagonal) and Americans ( $N = 90$ ; below the diagonal)

Measure	Mean and SD	Mean and SD	$F$	$\eta p^2$	Correlations (Pearson's $r$ )				
	(Mexicans)	(Americans)			1.	2.	3.	4.	
1. Quality of contact <sup>b</sup>	3.68 (1.58)	5.36 (1.03)	83.10***	.22			0.07	0.51***	-0.21***
2. IRGD <sup>a</sup>	3.70 (0.77)	1.61 (0.71)	473.15***	0.62	0.07			0.04	0.17**
3. Interpersonal closeness <sup>a</sup>	1.95 (1.06)	3.14 (1.16)	74.75***	0.21	0.57***	0.12			-0.18**
4. Subtle prejudice <sup>b</sup>	5.08 (1.19)	3.59 (1.38)	82.08***	0.22	-0.44***	-0.06	-0.17		

Note: Higher scores reflect more positive contact, higher deprivation, greater closeness, and higher prejudice, respectively.

Abbreviations: IRGD, intergroup relative gratification versus deprivation;  $\eta p^2$ , partial eta squared.

<sup>a</sup>5-point scale.

<sup>b</sup>7-point scale.

\*\* $p < .01$ ; \*\*\* $p < .001$ .

whereas Americans experienced RG, scoring below the mid-point ( $t(85) = -18.40, p < .001$ ).

## 4.2 | Relationships among variables

Table 1 shows a similar pattern of correlation in the two countries. In both countries, higher quality of contact was associated with more interpersonal closeness and lower subtle prejudice. This is consistent with research showing positive effects of contact among members of both the high-status and low-status groups (e.g., Henry & Hardin, 2006; Tropp, 2007). In the (high-status) American sample, differences in IRGD did not correlate significantly with the other variables. In the (low-status) Mexican sample, those who experienced higher IRGD also reported higher subtle prejudice.

## 4.3 | Moderated mediation

Our analytic framework examines interpersonal closeness and subtle prejudice as dependent variables and treats country status as stable and enduring predictor variable. The social psychological variables are considered as mediators and moderators. Specifically, positive intergroup contact serves as the mediator variable, and perceived IRGD as the moderator variable. In subsequent analyses, because interpersonal closeness and subtle prejudice were moderately correlated, when focusing on either dependent measure we included the other as a covariate in order to discern whether there were distinct effects of the predictors on these two dependent variables.

To test our hypotheses, and in light of the mean differences between countries, we first used PROCESS Model 4 (mediation) to evaluate whether intergroup contact mediated the effect of intergroup status on the dependent variables. These tests showed that the mediating (indirect) effect of contact was significant both for interpersonal closeness (Normal theory test  $b = 0.48, SE = 0.09, Z = 5.22, p < .001$ , bootstrapped estimates  $b = 0.48, SE = 0.09$ , [95% CI = 0.32, 0.67]), and for subtle prejudice (Normal theory test  $b = -0.20, SE = 0.07, Z = -3.12, p = .002$ , bootstrapped estimates  $b = -0.20, SE = 0.06$ , [95% CI = -0.35, -0.10]).

Next, we used PROCESS Model 1 (moderation) to test whether IRGD moderated the effect of contact on each dependent variable. Both moderation effects were significant. For interpersonal closeness, ( $b = -0.09, SE = 0.03, t = 2.97, p = .003$ , [95% CI = -0.15, -0.03]), the conditional effect of contact was significantly larger when IRGD was 1 SD below the mean ( $b = 0.59, SE = 0.06, t = 9.95, p < .001$ , [95% CI = 0.48, 0.71]), than when IRGD was 1 SD above the mean ( $b = 0.36, SE = 0.05, t = 7.40, p < .001$ , [95% CI = 0.26, 0.46]).

For subtle prejudice ( $b = 0.10, SE = 0.04, t = 2.33, p = .021$ , [95% CI = 0.01, 0.18]), the conditional effect of contact was significantly larger when IRGD was 1 SD below the mean ( $b = -0.44, SE = 0.09, t = 5.08, p < .001$ , [95% CI = -0.61, -0.27]), than when IRGD was 1 SD above the mean ( $b = -0.20, SE = 0.07, t = 2.90, p = .004$ , [95% CI = -0.33, -0.06]).

Given that both the mediation stage and the moderation stages of our hypothesized models were significant, it was appropriate to formally test the second-stage moderated mediation model using PROCESS Model 15. In addition to the two steps described previously, this model accounts for the potential first-stage moderation (IRGD  $\times$  country status) effect on the mediator (contact) when assessing the second-stage moderation of the mediating effect (IRGD  $\times$  contact) on the dependent variables. This is a more conservative approach than just testing the latter effect.

We describe the analyses in stages. First, whilst treating one dependent variable (either interpersonal closeness or subtle prejudice) as a covariate, we report the effects of the independent variable (country status) on the mediator (contact). Then, after including the covariate, we describe the effects on the other dependent variable (subtle prejudice or interpersonal closeness, respectively) of the mediator (contact), independent variable (country status), and moderator (IRGD) and test the first-stage moderation (IRGD  $\times$  country status) and second-stage moderation (IRGD  $\times$  contact). Full statistics are provided in Table 2. Finally, we report the conditional direct effects of status (country differences) at high- and low-levels of IRGD, and the conditional indirect effects via contact at high- and low-levels of IRGD. A summary of the effects is shown in Figure 1. The N for the analyses is 293.

### 4.3.1 | Interpersonal closeness

The mediator, quality of contact, was significantly affected by country status (US higher;  $b = 1.23, SE = 0.20, t = 6.17, p < .001$ , [95% CI = 0.84, 1.63]) and, as expected, it was significantly associated with the covariate (subtle prejudice) ( $b = -0.31, SE = 0.64, t = -4.83, p < .001$ , [95% CI = -0.44, 0.18]). The overall model was highly significant,  $R^2 = 0.28, MSE = 1.91, F(2, 290df) = 56.81, p < .001$ .

As shown in the first 5 rows of Table 2, interpersonal closeness was significantly higher in the high-status country (the United States), and when quality of contact was higher. The effect of IRGD, and the covariate effect were both nonsignificant. The rows for IRGD  $\times$  Status and IRGD  $\times$  Contact show that both the first- and second-stage moderation effects were significant. The overall model was highly significant,  $R^2 = 0.44, MSE = 0.86, F(6, 286df) = 37.39, p < .001$ .

Inspection of the conditional effects for the first-stage moderation showed that when IRGD was low (i.e., when respondents felt relatively gratified rather than deprived), the difference in interpersonal closeness between countries was not significant, but when IRGD was moderate or high (i.e., when respondents felt relatively deprived), the difference between countries was significant ( $p = .01, p < .01$ , respectively). The significant differences between the low- and high-IRGD slopes show that the difference in interpersonal closeness between the high-status and low-status countries becomes greater as the level of intergroup RD increases. Described more concretely, the effects of status on interpersonal closeness become significantly larger as RD increases.

**TABLE 2** Effects for second-stage moderated mediation analysis (process model 15) and conditional effects of intergroup relative gratification versus deprivation (IRGD)

	Coefficient	SE	t	p	LLCI	ULCI
<i>Interpersonal closeness (IOS)</i>						
Constant	2.36	0.22	10.50	<0.001	1.92	2.80
Covariate (subtle prejudice)	0.01	0.05	0.22	0.83	-0.08	0.10
Contact	0.43	0.04	10.32	<0.001	0.35	0.51
Status	0.68	0.26	2.60	0.01	0.16	1.20
IRGD	-0.01	0.07	-0.18	0.86	-0.16	0.13
IRGD × Status	0.35	0.17	2.05	0.04	0.01	0.70
Conditional effects of status (stage 1 moderation)						
Low IRGD	0.25	0.23	1.09	0.28	-0.20	0.70
Mean IRGD	0.68	0.26	2.59	0.01	0.16	1.20
High IRGD	1.12	0.42	2.66	0.01	0.29	1.94
IRGD × Contact	-0.08	0.04	-2.11	0.04	-0.15	-0.01
Conditional effects of contact (stage 2 moderated mediation)						
Low IRGD	0.64	0.13			0.41	0.94
Mean IRGD	0.53	0.10			0.35	0.73
High IRGD	0.41	0.08			0.27	0.60
<i>Subtle prejudice</i>						
Constant	4.44	0.22	20.49	<0.001	4.02	4.87
Covariate (IOS)	0.02	0.08	0.22	0.83	-0.13	0.17
Contact	-0.28	0.06	-4.71	<0.001	-0.40	-0.17
Status	-0.91	0.34	-2.68	<0.001	-1.58	-0.24
IRGD	0.19	0.09	1.99	0.048	0.01	0.37
IRGD × Status	-0.54	0.22	-2.41	0.02	-0.97	-0.10
Conditional effects of status (stage 1 moderation)						
Low IRGD	-0.25	0.29	-0.86	0.39	-0.83	0.32
Mean IRGD	-0.91	0.34	-2.68	0.01	-1.58	-0.24
High IRGD	-1.57	0.54	-2.90	0.01	-2.63	-0.50
IRGD × Contact	0.11	0.05	2.30	0.02	0.02	0.20
Conditional effects of contact (stage 2 moderated mediation)						
Low IRGD	-0.35	0.11			-0.61	-0.17
Mean IRGD	-0.24	0.07			-0.41	-0.13
High IRGD	-0.13	0.07			-0.30	-0.02

Inspection of the conditional effects for the second-stage moderation (i.e., conditional indirect effects) showed that while the quality of contact significantly affected interpersonal closeness at both high- and low-levels of IRGD, the effect was larger when IRGD was low (respondents felt relatively gratified), than when IRGD was high (respondents felt relatively deprived). The index of moderated mediation was significant (index = 0.094, SE = 0.046, [95% CI = -.20, -.01]).

#### 4.3.2 | Subtle prejudice

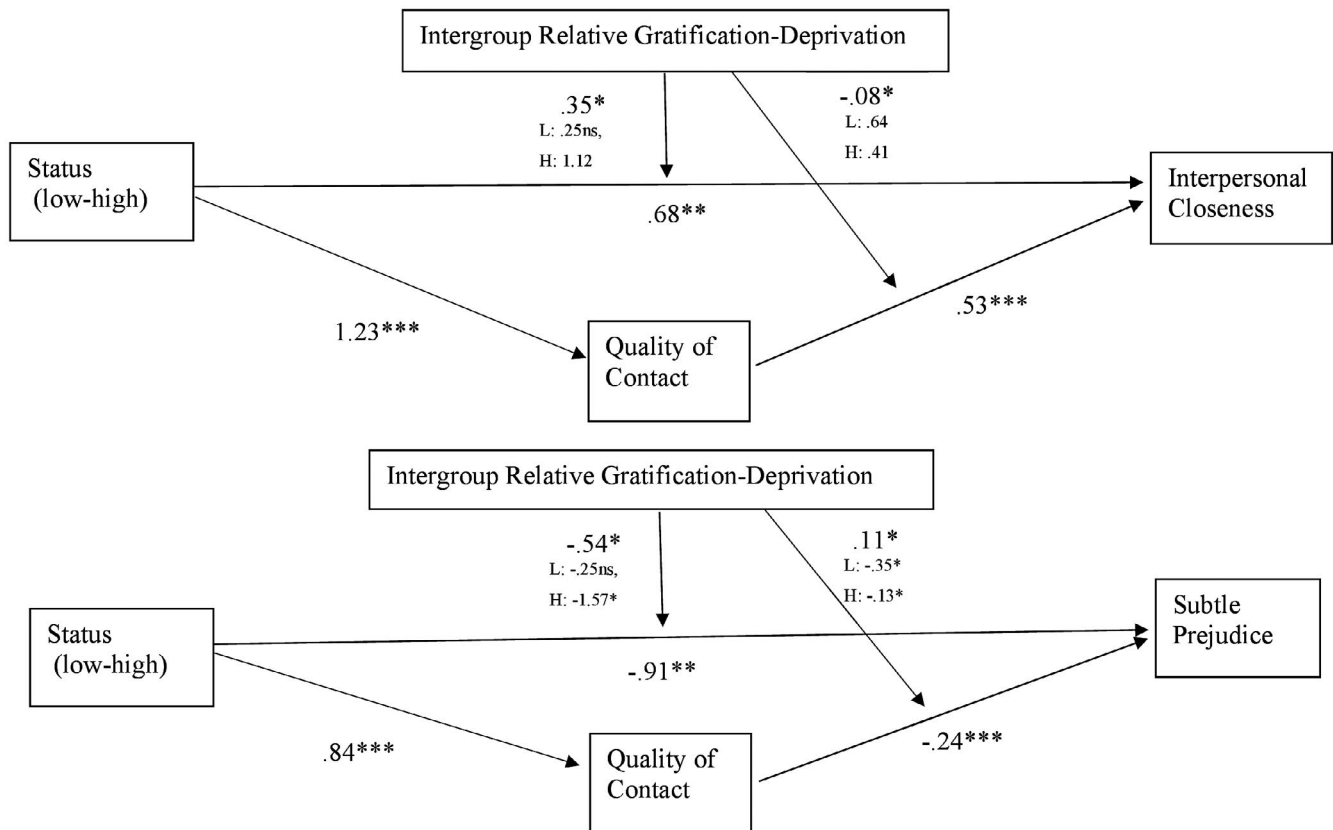
Quality of contact was significantly affected by country status ( $b = 0.84$ ,  $SE = 0.18$ ,  $t = 4.80$ ,  $p < .001$ , [95% CI = 0.50, 1.19]) and

was associated with the covariate (interpersonal closeness) ( $b = 0.69$ ,  $SE = 0.06$ ,  $t = 10.55$ ,  $p < .001$ , [95% CI = 0.56, 0.82]). The overall model was highly significant,  $R^2 = 0.44$ ,  $MSE = 1.49$ ,  $F(2, 290df) = 113.47$ ,  $p < .001$ .

Subtle prejudice was significantly affected by status (lower in the United States) and was significantly associated with lower quality of contact. The main effect of IRGD was also significant but the covariate (interpersonal closeness) effect was nonsignificant (see Table 2). Both the first- and second-stage moderation effects were significant ( $ps < .02$ ,  $<.03$ , respectively). The overall model was highly significant,  $R^2 = 0.31$ ,  $MSE = 1.43$ ,  $F(6, 286df) = 21.12$ ,  $p < .001$ .

Inspection of the conditional effects for the first-stage moderation showed that when IRGD was low (respondents felt relatively





**FIGURE 1** Conditional direct and indirect effects of status and contact on interpersonal closeness, and subtle prejudice. Subscripts are coefficients for conditional effects at low (L) and high (H) levels of relative gratification versus deprivation. Each dependent variable is included as a covariate in the model testing effects on the other. ns, non-significant; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

gratified), the difference in subtle prejudice between countries was not significant but when IRGD was high (i.e., when respondents felt relatively deprived), the difference between countries was significant. These two slopes differ significantly, showing that the difference in subtle prejudice between high- and low-status groups becomes greater as the level of RD increases. Described more concretely, differences between the subtle prejudice shown by Mexicans and Americans become larger the more relatively deprived they feel.

Inspection of the conditional effects for the second-stage moderation (i.e., conditional indirect effects) showed that there was a significant negative effect of quality of contact on subtle prejudice at both high- and low-levels of IRGD. However, the effect was larger when IRGD was low (respondents felt relatively gratified), than when IRGD was high (respondents felt relatively deprived). The index of moderated mediation was significant (index =  $-0.094$ ,  $SE = 0.05$ , [95% CI = 0.01, 0.21]).

In summary, intergroup contact significantly mediated the relationship between intergroup status and both interpersonal closeness and subtle prejudice. There were also significant moderating effects of IRGD, providing evidence for our RG Augmentation hypothesis. When IRGD was low (i.e., when an individual experienced RG) the effects of contact on the outcome measures was significantly larger

than when IRGD was high (i.e., individuals experienced RD), in line with the RG Augmentation hypothesis.

## 5 | DISCUSSION

This study is the first, to our knowledge, that has examined how in higher and lower status groups, collective RG versus RD may moderate the well-established links between intergroup contact and interpersonal closeness and subtle prejudice, respectively. As expected from their lower intergroup status, Mexicans generally experienced lower quality of intergroup contact and perceived lower levels of interpersonal closeness and higher subtle prejudice than Americans. Moreover, differences in levels of positive contact mediated the effect of status on interpersonal closeness and subtle prejudice. We also found that the effects of contact on interpersonal closeness and subtle prejudice were somewhat weaker among participants from the low-status group (Mexicans) than those from the high-status group (Americans). This finding corresponds to other evidence in the literature indicating that contact experiences might be construed quite differently by high-status and low-status group members (e.g., Tropp & Pettigrew, 2005, cf. Hässler et al., 2020).

Not surprisingly, Mexicans felt relatively deprived whereas Americans felt relatively gratified. More theoretically interesting is that the differences in interpersonal closeness and prejudice expressed by participants from the two countries were only significant amongst those who felt relatively deprived. Put another way, the combination of low intergroup status and a strong perception of deprivation had a stronger effect on prejudice than either status or RD alone. The second-stage moderation effects revealed that IRGD also moderated the effects of intergroup contact on interpersonal closeness and subtle prejudice. The effects of positive contact were generally stronger amongst participants who felt relatively more gratified rather than deprived. Moreover, it is important to note that the moderating effect of IRGD applies after accounting for the direct effects of differences between countries. Thus, the first-stage moderation reveals an amplifying effect of RD on prejudice such that greater prejudice is expressed by those who feel most deprived within lower status groups. The second-stage moderation suggests that this amplifying effect may extend by constraining the potential for intergroup contact to reduce prejudice amongst those who feel most deprived. This highlights the limits to the likely effectiveness of intergroup contact interventions when they are targeted at members of lower status groups because it suggests that positive contact may not be sufficient to ameliorate (understandable) feelings of anger and frustration that may arise from being a member of a lower status group with an acute sense of collective RD.

## 5.1 | Limitations and strengths

Although difficult to conduct, an advantage of cross-national studies with physically present participants is that they allow broader and more culturally sensitive test of hypotheses regarding effects of group status and RD on contact and prejudice. Had we examined only one of the two contexts in isolation we could have arrived at quite different conclusions about the impact of IRGD and contact on prejudice. The differences between countries (lower status being associated with higher RD and lower quality contact) were consistent with our expectations and evidence from research in other contexts. But our finding that IRGD moderates the role of contact now merit further research in other contexts (ideally involving both high- and low-status groups) to explore its generalizability.

Manifestly, country status is temporally prior to and more stable than all other variables measured in the present research, and therefore, we assume that it is also likely to be causally prior as a psychological factor. However, we are aware that the cross-sectional nature of this study means we should be cautious about causal inferences beyond that point. Here, we rely on statistical confirmation of theoretically predicted relationships to consider the plausibility of causal processes. We have very strong theoretical and evidential reasons for accepting the premise that higher quality of contact should generally predict more interpersonal closeness and less subtle prejudice

(see Pettigrew & Tropp, 2006), but the reverse causal direction can also arise, albeit in weaker form (Eller & Abrams, 2004; Levin, van Laar, & Sidanius, 2003). To establish firmer conclusions about causality, it would be desirable to conduct a cross-national longitudinal study, which could also capture both the contextual and temporal effects in the contribution of RG or RD and contact (Abrams & Eller, 2017).

Another limitation is the use of only one subscale of Pettigrew and Meertens (1995) subtle prejudice scale, and only single-item measures of IRGD. This was done partly for continuity with previous research and partly for practical reasons. We wanted to maximize participation in the study by keeping the set of measures to a reasonable length, and also to minimize presentation of repetitive questions that might unduly increase the salience of IRGD. It remains possible that more extensive measures of gratification and deprivation might reveal additional or stronger relationships than those observed in the present research.

These limitations notwithstanding, the present study is one of the few to examine the interplay of contact and different levels of group status within the same intergroup relationship (cf., Eller & Abrams, 2003, 2004; Henry & Hardin, 2006; Hopkins & Kahani-Hopkins, 2006; Tropp, 2007; Turner, Tam, Hewstone, Kenworthy, & Cairns, 2013). It is also one of the first to directly investigate the moderating effects of a potentially major consequence of status difference, examining both ends of the gratification-deprivation continuum. It is reassuring that we obtained results that are consistent with the sparse extant literature (Dambrun et al., 2006; Guimond & Dambrun, 2002). The current study also supplements the still quite limited volume of research focusing on IRGD processes in naturalistic settings (see Abrams & Grant, 2012; Abrams, Hinkle, & Tomlins, 1999; Abrams et al., 2019; Cakal et al., 2011; Dambrun et al., 2006; Koschate et al., 2012; Zagefka & Brown, 2005).

## 5.2 | Conclusions and directions for future research

This research has shown how perceptions of RD/RG associated with status differentials between groups can shape the effects of intergroup contact on perceived interpersonal closeness and prejudice towards an out-group. The evidence shows that effects of both group status and intergroup contact on prejudice may depend on the perceptions of RG or RD amongst group members. This allows us to produce a more complete account of how and when high-quality intergroup contact may yield positive intergroup relations even when the optimal conditions for contact are not present. This would seem to be an important avenue for research given that such a large number of problematic intergroup relationships fail to meet these optimal conditions. It is useful to focus on the implications of status inequality because if contact is to succeed in improving intergroup relationships it will need to work on both sides of the status boundaries.

Several interesting questions arise for future research. Tropp and Pettigrew's (2005) meta-analysis indicates that contact is a more

effective vehicle for reducing prejudice amongst the higher status (e.g., majority or advantaged groups). If high-quality contact is not a ubiquitous prejudice-reducing vehicle it is important to understand the contextual factors and psychological processes that might limit its effectiveness. Perhaps members of disadvantaged or low-status groups who feel strongly relatively deprived may actively resist generalizing their experiences of positive contact, focusing instead on intergroup inequality as a way of sustaining their resolve to challenge the status quo—they may be more likely to become activists (Abrams & Grant, 2012; Abrams et al., 2019). Therefore, RD amongst members of low-status groups may provide an important source of resistance to the potentially ironic “sedative effects” of contact (Cakal et al., 2011; Hässler et al., 2020; Pettigrew, 2010) on minority group members.

An intriguing question is what combinations of perceived deprivation and status amongst low- and high-status group members might hold the best hope that unjust inequalities may be addressed and corrected. Might positive one-to-one contact between group members at the two extremes be particularly beneficial? What would be expected from a friendly meeting between a highly deprived but also highly prejudiced member of a disadvantaged group and a highly gratified but nonprejudiced member of advantaged group? Importantly, in that type of contact, both members would recognize the relative inequality affecting the disadvantaged group. Might this be conducive for enabling the former to persuade the latter to reduce intergroup inequalities? Notwithstanding potential sedative effects of majority-minority intergroup contact on disadvantaged groups' motivation to engage in collective action, such an approach could be consistent with recent evidence that some agreement in perspective via a common in-group identity can lead to political activism on the part of disadvantaged group members (Cakal, Eller, Sirlopu, & Perez, 2016; cf., Curtin & McGarty, 2016).

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## ORCID

Dominic Abrams  <https://orcid.org/0000-0002-2113-4572>  
 Stephen C. Wright  <https://orcid.org/0000-0002-8071-8885>

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