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ARTICLE

How positive and negative intergroup contact jointly inform minority support for social change: The role of system-fairness beliefs

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Abstract

Research suggests that positive contact with majorities may 'sedate' (undermine) minority support for social change, while negative contact may promote it. However, most studies to date have examined both forms of contact separately, which may not give an accurate picture of their effects. This study examines the *joint* effects and interplay of positive and negative contact on minority support for social change, and the role of system-fairness beliefs across seven ethnic minority samples in six countries ($N = 790$). Multigroup Structural Equation Modelling showed that negative contact predicted higher minority support for social change. Positive contact predicted both less support for social change indirectly via enhanced system-fairness beliefs, and more support for social change directly. Except for one national context, the total effects of positive contact were either non-significant or significantly positive. This shows that increased system-fairness beliefs can explain sedative effects of positive contact, and that positive contact may also promote support for social change. We conclude that sedative effects of positive contact may be overestimated by not considering negative contact.

KEYWORDS

minority group members, negative intergroup contact, positive intergroup contact, support for social change, system-justification

BACKGROUND

Members of minority groups (i.e., groups with lower status in society due to stigmatization or disadvantage)[1] often experience positive contact, such as friendly interactions or friendships, with ma-

[1]While we use the term 'minority groups' to denote disadvantaged, lower-status groups, such groups need not constitute a numerical minority in all intergroup contexts.

jority group members (i.e., groups with higher status that are privileged or dominant in society; see, for example, Hässler et al., 2020; Hayward et al., 2017). Yet minority group members may also experience considerable negative contact, such as hostile or unfair treatment by majority group members. While minority and majority group members alike typically report more positive than negative contact, negative contact experiences are relatively common among minority group members (Árnadóttir et al., 2018; Graf et al., 2014; Hayward et al., 2017; Schäfer et al., 2021; Swim et al., 2003; Tropp, 2007).

Moreover, whereas positive contact typically reduces prejudice and promotes more favourable intergroup attitudes (Kende et al., 2018; Lemmer & Wagner, 2015; Pettigrew & Tropp, 2006), it may sometimes entrench intergroup inequality by undermining disadvantaged group members' motivation to challenge the status quo and support social change towards equality (Dixon et al., 2010; Wright & Lubensky, 2009). Evidence for this 'sedative' effect has been found among minority groups in varied intergroup contexts, including among Black South Africans (Cakal et al., 2011), Black and Latinx U.S. Americans (Tausch et al., 2015; Tropp et al., 2012) and Arabs in Israel (Saguy et al., 2009). Likewise, prior work using data from the Zurich Intergroup Project (ZIP) found evidence for inverse associations between positive contact and support for social change, in the form of support for empowering policies and intentions to engage in collective action, among ethnic and LGBTIQ+ minority group members (Hässler et al., 2020).

However, evidence for such a 'sedative' effect of positive contact is mixed (see Cocco et al., 2023 for a review). Some work finds that positive contact can promote minority group members' support for social change (e.g. through willingness to work with majority allies to achieve greater equality; Hässler et al., 2020, 2022) or that positive contact may have both positive and negative effects on minority support for social change through different mechanisms (Hayward et al., 2018). Furthermore, a recent meta-analysis by Reimer and Sengupta (2023) showed that the effects of (mostly positive) contact on minority support for social change were small and variable across studies, concluding that 36% of studies would likely find a *positive* association between contact and collective action.

While the link between perceived discrimination and minority support for social change has been extensively studied (Fleischmann et al., 2011; Foster & Matheson, 1998; Stronge et al., 2016), minority group members' more general experiences of negative contact with majority group members, such as unfriendly interactions, have received less attention (Reimer & Sengupta, 2023). Evidence suggests that such general negative contact also promotes minority support for social change (Hässler et al., 2020, 2022; Reimer et al., 2017, but see Bagci & Turnuklu, 2019).

Importantly, few studies to date have simultaneously tested both positive and negative intergroup contact as predictors of minority support for social change, and those that have include minority group data from only a handful of countries (Bagci & Turnuklu, 2019; Hayward et al., 2018; Reimer et al., 2017). Our understanding of the joint effects of positive and negative intergroup contact on minority support for social change is therefore lacking. This is a significant lacuna since positive and negative contact may inform support for social change in distinct ways (Hässler et al., 2020, 2022). Moreover, assessing positive and negative contact separately risks conflating the presence of one with the relative absence of the other, given that minority group members who experience a great deal of positive contact may tend to experience less negative contact than those experiencing positive contact less frequently. In line with this, a meta-analysis by Reimer and Sengupta (2023, see also Reimer et al., 2017) found that positive contact was not associated with lower support for social change when negative contact was included in the model. Thus, it is necessary to examine both positive and negative contact in the same analysis to disentangle whether positive contact really 'sedates' minority support for social change or whether such effects may sometimes be better explained by the relative absence of negative contact experiences. Moreover, positive and negative contact may interact, such that the effects of positive contact may depend on how much negative contact minority group members experience and vice versa. Evidence for such interplay exists for outcomes such as intergroup attitudes and contact orientations (Árnadóttir et al., 2018, 2022), and emerging work suggests that the presence of negative contact may diminish the extent to which positive contact undermines support for social change (Albzour et al., 2023) and/or that

negative contact may be more likely to promote minority support for social change among those also experiencing frequent positive contact (Prati et al., 2023).

The current study presents the first multi-national examination of the *joint* effects and potential interplay of positive and negative contact on minority support for social change. It employs survey data from the ZIP (Hässler et al., 2020, 2022) to examine these associations across different immigrant, ethnic-racial, and indigenous minority groups (referred to hereafter as 'ethnic minority groups') in six comparison countries across Europe and the Americas. While it is beyond the scope of this study to predict whether or when findings may differ across countries (e.g., as a function of country-level policies or hierarchy; Green et al., 2020; Kende et al., 2018), we adopt a comparative replication approach across these countries and samples, testing multigroup models that allow for the detection of such differences.

Our outcome measures reflect distinct aspects of minority support for social change, which jointly can contribute to achieving greater equality. Much of the social change literature has focused on collective action such as protests for ingroup rights (van Zomeren et al., 2008), with many studies linking minority group members' contact experiences to such actions or intentions (Becker et al., 2013; Hayward et al., 2018; Reimer et al., 2017). In addition to considering collective action, we examine lesser studied aspects of support for social change, namely support for empowering policies (MacInnis & Hodson, 2019) and willingness to work with majority allies to achieve social change (Hässler et al., 2020, 2022). In line with prior work, we expect negative contact to predict more support for social change (H1, direct effect: negative contact-support for social change; Hässler et al., 2020, 2022). Due to the mixed existing evidence, we did not make predictions regarding the main effects of positive intergroup contact.

System-fairness beliefs and links between contact and support for social change

Moreover, this study extends prior work by illuminating the role of system-justifying beliefs (Jost & Banaji, 1994; Jost & Hunyady, 2005) – that is, beliefs that majority and minority group members alike have a fair shot at success and get what they deserve – in associations between contact and support for social change (hereafter, the terms 'perceived system-fairness' and 'system-fairness beliefs' refer to this form of system justification). Despite their relative disadvantage, some minority group members may see the system as fair, which can reduce perceptions of threat and uncertainty (Jost & Banaji, 1994; Jost & Hunyady, 2005) and alleviate psychological distress, even (or especially) in the face of negative and unequal treatment (Napier et al., 2020; Suppes et al., 2019). Importantly, however, perceived system fairness can come at the cost of undermining minority group members' support for social change (Jost et al., 2012, 2017; Osborne et al., 2019).

In line with this prior work, we expect that minority group members who believe the system is fair will generally be less inclined to support social change (Hässler et al., 2022). In the sections that follow, we explain why perceived system fairness should shape associations between contact and social change, both in terms of minority group members' positive and negative contact experiences.

System-fairness beliefs and minority group members' negative contact experiences

In line with the integrated Contact-Collective Action Model (Hässler et al., 2021), we posit that individual differences in system-fairness beliefs should moderate the associations between intergroup contact and support for social change, such that the association between negative contact and support for social change would be attenuated the more that minority group members endorse system-fairness beliefs (H2, *moderation*: negative contact-support for social change). Minority group members who endorse system-fairness beliefs should be less likely to view negative encounters with majority group members as reflecting *group*-based disadvantage, because this would contradict the belief that the system is fair and that people receive the treatment they deserve. Instead, they might view such negative encounters as due

to a few 'bad apples' (Rucker & Richeson, 2021; Suppes et al., 2019), rather than as a systemic problem that needs to be addressed. This would likely undermine their support for social change, since perceiving group-based disadvantage is a critical precursor to supporting action for social change (Abrams & Grant, 2012; Osborne et al., 2019; van Zomeren et al., 2008). Furthermore, even if negative contact did lead minority group members to perceive some degree of group-based disadvantage, system-fairness beliefs should still attenuate the link between negative contact and support for social change, because those endorsing system-fairness beliefs should feel less group-based anger and frustration in response to perceived disadvantage (Hässler et al., 2019; van Zomeren et al., 2004), which would then limit their support for social change (Jost et al., 2012; Osborne & Sibley, 2013; van Zomeren et al., 2004).

Alternatively, we also tested whether system-fairness beliefs might *mediate* the effects of negative contact on minority group members' support for social change. Although there is little direct evidence to support this hypothesis, there is some indirect support. For instance, research with Latinx and African U.S. Americans showed that their negative contact experiences with White U.S. Americans predicted greater perceptions of *group* discrimination, which in turn promoted greater support for social change (Hayward et al., 2018). Just as negative contact may enhance minority perceptions of group discrimination, so too it might curb minority perceptions of system fairness. Thus, we posited that negative contact would not only promote minority group members' support for social change directly (H1) but also indirectly via lowering perceptions that the system is fair (H3, *mediation*: negative contact-support for social change).

System-fairness beliefs and minority group members' positive contact experiences

As with negative contact, we first considered whether system-fairness beliefs might moderate the association of positive contact with minority support for social change. It is plausible that perceiving the system as *un*fair may attenuate the potential sedative effects of positive contact (Hässler et al., 2021), yet previous work examining the moderation effect on collective action *intention* has revealed mixed results (Hässler et al., 2022). Thus, we refrain from making predictions. Secondly, we tested whether system-justification beliefs might (partially) explain sedation by mediating the association of positive contact with support for social change. We proposed that minority group members' positive contact with majority group members would predict stronger beliefs that society is fair, which in turn would undermine support for social change (H4, *mediation*: positive contact-support for social change). In line with this proposition, positive contact has been shown to predict greater expectations of fair treatment (Saguy et al., 2009) and greater endorsement of the belief that people get what they deserve, in turn undermining support for social change (Sengupta & Sibley, 2013).

In sum, we expected positive contact to predict less support for social change via stronger system-fairness beliefs. Due to mixed evidence, we did not make predictions regarding the direct and total effects of positive contact (Reimer & Sengupta, 2023). Hayward et al. (2018) found, for example, that while Latinx and African U.S. Americans' positive contact did have negative indirect effects on their support for social change (via group-based anger and discrimination), it had non-significant or even positive direct and total effects. They argued that other mechanisms may also be at play, simultaneously predicting more support for social change and thereby suppressing a total effect. Such a perspective is consistent with research suggesting that positive contact need not always compromise minority support for social change and indeed may at times even promote social change (Becker et al., 2013; Droogendyk et al., 2016; Hässler et al., 2021, 2022).

Potential interplay between positive and negative contact

Lastly, we explored the interplay of positive and negative contact, examining whether positive contact effects on minority support for social change might depend on the presence and amount of negative

contact and vice versa (see the Additional models discussed in the Results section; Árnadóttir et al., 2018, 2022). While, due to limited evidence, we did not make specific predictions regarding the nature of the interplay, it is plausible, for example that negative contact may attenuate the potential sedative effects of positive contact (Albzour et al., 2023).

The current study

To test our predictions, we analysed multinational ethnic minority survey data from the ZIP (Hässler et al., 2020, 2022). Testing multigroup structural equation models (SEM), we examined how and when ethnic minority group members' positive and negative intergroup contact jointly translate to support for social change, measured as past collective action, support for empowering policies, and willingness to work in solidarity with majority group members to achieve greater equality. We also investigated the role of system-fairness beliefs (see Figure 1). The preregistration of this study, Supplementary Online Material (SOM) and model output are available on https://osf.io/9z6v3/.[2] As this study is based on secondary analyses of data collected in 2016–2017, the preregistration was submitted after data collection. The 1st and 2nd authors (responsible for all data analyses) received the data from the core ZIP team only after submitting the preregistration on OSF. Information regarding deviations from the preregistration can be found at the end of the results section.

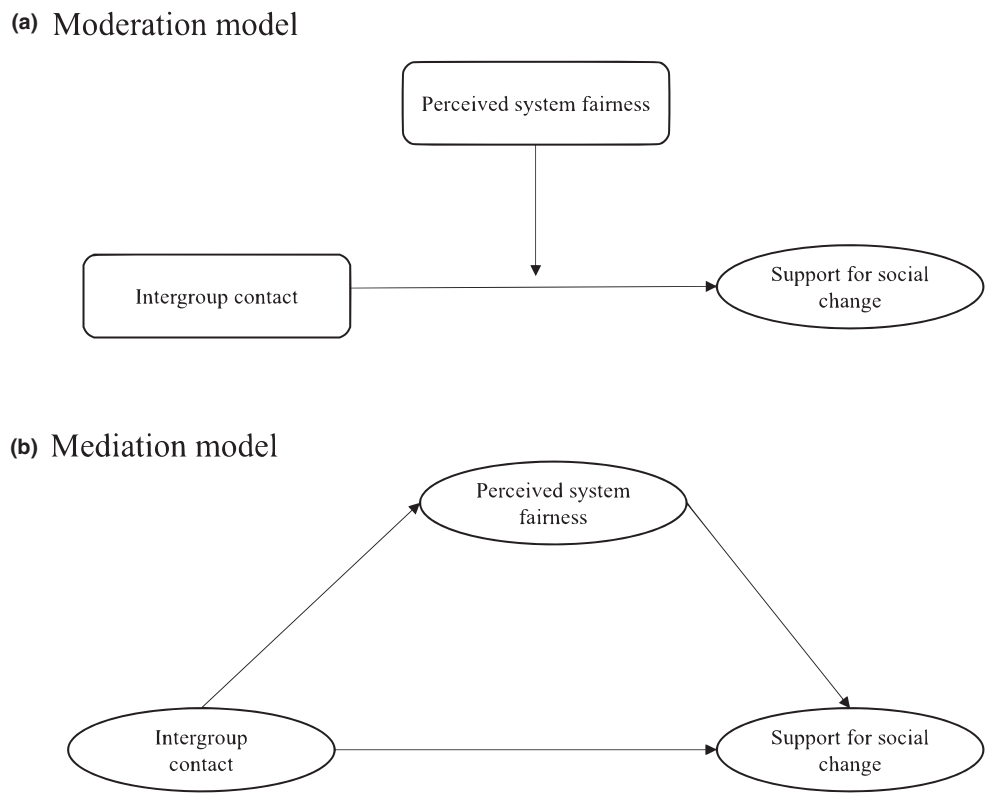

FIGURE 1 Simplified theoretical moderation model (a) and mediation model (b).

[2]Data was not made available as participants did not consent to having the raw data published.

METHOD

Participants and procedure

The original data had 11 ethnic minority samples ($N = 1362$). In a first step, we excluded two small samples (30 participants or less, $N = 42$) and participants with incomplete data (≥20% missing on study variables, in line with preregistration and Hässler et al., 2020, 2022, $N = 308$). Given the cross-cultural nature of the data, we ran multigroup confirmatory factor analysis (MGCFA) to assess measurement invariance across samples. Establishing measurement invariance is a crucial prerequisite for multi-group analysis, as measurement *non*-invariance indicates that measures or constructs have a different structure or meaning to different groups, and hence cannot be meaningfully compared (Putnick & Bornstein, 2016). Excluding two more samples (Serbians in Kosovo; Roma in Spain) with non-equivalent factor structures ($N = 222$), the required configural and (partial) metric invariance was achieved for seven remaining samples in six countries as meaningful comparison groups ($N = 790$; see Table 1 for sample descriptives). Data collection for the ZIP relied on convenience samples in each country (Section 1 SOM provides further information regarding participant recruitment, and participant and sample selection). We thus replicate the associations of positive and negative contact with support for social change across different minority groups in Europe and the Americas, including samples from underrepresented regions (Thalmayer et al., 2021).

Measures

Table 2 displays means, standard deviations, and reliabilities by sample. Unless stated otherwise, responses were indicated on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). For each of the below composite measures, an example item is given (see Table S1 in SOM for a complete list of all items). Section 2 in SOM contains information on variables not included in the main analyses (e.g., demographic variables) and changes from the preregistration.

Negative intergroup contact with majority group members consisted of two items, for example; 'When you interact with [majority group], to what extent do you experience the following? The contact is negative'. This measure was used in prior ZIP papers but was reversed and named 'absence of negative contact' (Hässler et al., 2020, 2022).

Positive intergroup contact with majority group members consisted of two items, for example, 'When you interact with [majority group], to what extent do you experience the following? The contact is positive'. (Hässler et al., 2020, 2022).

Perceived system-fairness was measured by three items, for example, 'Everyone ([majority group] and [minority ingroup]) has a fair shot at wealth and happiness', selected a-priori from a larger scale capturing context specific system-justification more broadly (adapted from Jost & Kay, 2005; see Hässler et al., 2022).[3]

Collective action was measured as a composite of four items; two for high-cost and two for low-cost collective action, for example, 'How often have you engaged in the following activities in the past? Attended meetings or workshops on issues regarding the unequal treatment of [minority ingroup]' (1 = *never*, 6 = *always*). Prior work using this data has used similar measures, albeit measuring collective action intensions rather than past behaviour as the current study does (Hässler et al., 2020, 2022). Based on multi-group CFA, two items (one low-cost and one high-cost) of the original preregistered measure had to be dropped; and the remaining four items were combined into one scale to achieve equivalence.[4]

[3]As the focus of the current study was on system-fairness perceptions, other items on the larger scale were not suitable (e.g., "For [minority ingroup], my country is the best country in the world to live in").
[4]For further information see Section 2 in SOM.

TABLE 1 Sample descriptives.

Sample	Sample size	Age	Gender	Education
Chile: Peruvians	$N = 142$	$M = 33.96$, $SD = 12.68$	M = 46%, F = 53%[a]	Low = 50%, Medium = 32%, High = 16%, Missing = 2%
Chile: Mapuche	$N = 132$	$M = 29.95$, $SD = 10.52$	M = 45%, F = 54%[a]	Low = 25%,Medium = 38%, High = 34%, Missing = 3%
U.K.: Asians	$N = 127$	$M = 21.50$, $SD = 5.77$	M = 17%, F = 83%	Low = 1%, Medium = 59%, High = 38%, Missing = 2%
U.S.: Muslims	$N = 111$	$M = 33.80$, $SD = 13.23$	M = 37%, F = 63%	Low = 3%, Medium = 9%, High = 82%, Missing = 6%
Serbia: Bosnians	$N = 99$	$M = 31.67$, $SD = 11.54$	M = 41%, F = 59%	Low = 6%, Medium = 30%, High = 60%, Missing = 4%
Poland: Ukrainians	$N = 90$	$M = 22.60$, $SD = 4.84$	M = 32%, F = 68%	Low = 9%, Medium = 33%, High = 55%, Missing = 3%
Switzerland: Muslims	$N = 89$	$M = 32.26$, $SD = 12.81$	M = 45%, F = 55%	Low = 48%, Medium = 9%, High = 41%, Missing = 2%

Note: Gender M = Male, F = Female (an option 'other' was available but not used by any participant).

[a]One participant did not report gender. Two dummies were created for education with low education (less than full secondary) as reference category. Medium education = full secondary, high education = university degree.

TABLE 2 Scale reliabilities, means, and standard deviations by sample.

Sample	Negative intergroup contact	Positive intergroup contact	Perceived system fairness	Collective action	Support for empowering policies	Willingness to work in solidarity
Chile: Peruvians	Spearman-Brown = .79, $M = 2.23$, $SD = 1.42$	Spearman-Brown = .77, $M = 6.27$, $SD = 1.03$	$\alpha = .73$, $M = 5.47$, $SD = 1.33$	$\alpha = .71$, $M = 1.73$, $SD = .93$	$\alpha = .58$, $M = 4.95$, $SD = 1.40$	$\alpha = .93$, $M = 5.37$, $SD = 1.91$
Chile: Mapuche	Spearman-Brown = .75, $M = 2.51$, $SD = 1.52$	Spearman-Brown = .89, $M = 5.87$, $SD = 1.20$	$\alpha = .71$, $M = 3.06$, $SD = 1.61$	$\alpha = .84$, $M = 3.18$, $SD = 1.39$	$\alpha = .82$, $M = 5.98$, $SD = 1.31$	$\alpha = .82$, $M = 5.76$, $SD = 1.32$
U.K.: Asians	Spearman-Brown = .59, $M = 2.26$, $SD = .89$	Spearman-Brown = .82, $M = 5.30$, $SD = 1.01$	$\alpha = .73$, $M = 3.85$, $SD = 1.16$	$\alpha = .81$, $M = 1.47$, $SD = .76$	$\alpha = .57$, $M = 4.43$, $SD = .91$	$\alpha = .84$, $M = 5.21$, $SD = 1.29$
U.S.: Muslims	Spearman-Brown = .66, $M = 1.73$, $SD = .93$	Spearman-Brown = .76, $M = 6.28$, $SD = .85$	$\alpha = .67$, $M = 3.39$, $SD = 1.43$	$\alpha = .81$, $M = 3.14$, $SD = 1.22$	$\alpha = .62$, $M = 5.18$, $SD = 1.18$	$\alpha = .83$, $M = 6.37$, $SD = .93$
Serbia: Bosnians	Spearman-Brown = .88, $M = 1.78$, $SD = 1.24$	Spearman-Brown = .83, $M = 5.61$, $SD = 1.47$	$\alpha = .63$, $M = 2.74$, $SD = 1.41$	$\alpha = .79$, $M = 1.94$, $SD = 1.05$	$\alpha = .83$, $M = 5.77$, $SD = 1.59$	$\alpha = .95$, $M = 5.72$, $SD = 1.77$
Poland: Ukrainians	Spearman-Brown = .89, $M = 1.77$, $SD = 1.05$	Spearman-Brown = .82, $M = 5.64$, $SD = 1.08$	$\alpha = .67$, $M = 5.02$, $SD = 1.24$	$\alpha = .84$, $M = 1.43$, $SD = .74$	$\alpha = .84$, $M = 3.96$, $SD = 1.48$	$\alpha = .85$, $M = 5.37$, $SD = 1.53$
Switzerland: Muslims	Spearman-Brown = .79, $M = 2.01$, $SD = 1.07$	Spearman-Brown = .78, $M = 5.70$, $SD = 1.04$	$\alpha = .83$, $M = 4.34$, $SD = 1.55$	$\alpha = .71$, $M = 1.99$ $SD = .96$	$\alpha = .70$, $M = 5.08$, $SD = 1.32$	$\alpha = .88$, $M = 5.70$, $SD = 1.46$

Note: Spearman-Brown = Spearman-Brown coefficient.

Support for empowering policies (hereafter 'policy support' shorthand) consisted of three items (Hässler et al., 2020, 2022), for example, '[Minority ingroup] should obtain much more power in the decision-centers of our society'.

Willingness to work in solidarity (hereafter, 'working in solidarity' shorthand) with majority group members consisted of three items (Hässler et al., 2020, 2022), for example, 'How willing are you to cooperate with [majority group] to work for justice for [minority ingroup] in your country?' (1 = *not at all*, 7 = *very much*).

Analytic strategy

Using Mplus 8.2 (Muthén & Muthén, 2017), we ran multigroup Structural Equation models (SEM) with sample as a grouping variable, specifying all study variables as latent constructs to take measurement error into account (excepting moderation models, see below). We first established cross-cultural measurement equivalence across seven ethnic minority samples (out of nine, the two other samples were excluded; see above; Section 1 in SOM contains further information) in six countries to ensure meaningful comparison (Putnick & Bornstein, 2016). Specifically, we tested configural invariance (same factor structure across samples) and (partial) metric invariance (same factor loadings). We next ran two sets of main models (Models A and B in Figure 1). We additionally explored potential interactions between positive and negative contact. As Mplus 8.2 does not support estimations of interactions between latent variables in multigroup models (Muthén & Muthén, 2017), negative and positive contact and perceived system fairness were specified as manifest variables with collective action, policy support, and working in solidarity as latent variables in *partially latent* moderation models (Model A in Figure 1).[5] In the absence of interactions, all six constructs were specified as latent variables in fully latent mediation models (Model B in Figure 1). As preregistered, models were tested both with and without demographic covariates (e.g., age) to determine whether the findings were robust. Below, we report the main models without covariates. The findings were largely replicated with covariates (see Section 4 in SOM; see Section 1 in SOM for our handling of missing values).

RESULTS

Table 3 shows zero-order correlations between study variables by sample.

Multigroup measurement models

To ensure that constructs could be meaningfully compared across samples, we first confirmed configural invariance, implying that factor structure is equivalent across all seven samples (M1 in Table 4; CFI > .90 and RMSEA < .08 indicate acceptable fit; SRMR < .08 indicates good fit; Hu & Bentler, 1999). Next, we tested for metric invariance (i.e., factor loadings are constrained equally across groups, but intercepts are allowed to differ). To test (partial) metric invariance, we allowed for small changes in model fit (<−.010 in CFI, <+.015 in RMSEA, or <+.030 in SRMR; Chen, 2007). Although full metric invariance was rejected (M2 in Table 4), partial metric invariance was achieved (M3 in Table 4). Partial metric invariance is sufficient for measurement equivalence and hence for meaningful comparison if non-invariant items constitute a small portion of the model (Byrne et al., 1989; Cheung & Rensvold, 1999; see Sections 3a–3b in SOM for further information).

[5]For consistency, we specified all three variables (positive contact, negative contact and perceived system-fairness) as manifest when testing interactions.

TABLE 3 Correlations between the study variables by sample.

	1	2	3	4	5
Chile: Peruvians					
1. Negative intergroup contact	–				
2. Positive intergroup contact	−.39***	–			
3. Perceived system fairness	−.09	.37***	–		
4. Collective action	.03	−.13	−.05	–	
5. Support for empowering policies	.27**	−.32***	−.07	.08	–
6. Working in solidarity	.08	.01	.06	.22*	.21*
Chile: Mapuche					
1. Negative intergroup contact	–				
2. Positive intergroup contact	−.46***	–			
3. Perceived system fairness	−.10	.25**	–		
4. Collective action	.24**	−.43***	−.42***	–	
5. Support for empowering policies	−.04	.14	−.23**	.03	–
6. Working in solidarity	.03	.03	−.21**	.06	.37***
U.K.: Asians					
1. Negative intergroup contact	–				
2. Positive intergroup contact	−.55***	–			
3. Perceived system fairness	−.24**	.33***	–		
4. Collective action	.09	−.05	−.09	–	
5. Support for empowering policies	.11	.25**	−.13	.20*	–
6. Working in solidarity	.05	.19*	.04	.08	.35***
U.S.: Muslims					
1. Negative intergroup contact	–				
2. Positive intergroup contact	−.69***	–			
3. Perceived system fairness	−.30**	.30**	–		
4. Collective action	.12	−.12	−.30**	–	
5. Support for empowering policies	−.00	.04	−.29**	.20*	–
6. Working in solidarity	−.20*	.30**	−.05	.22*	.23*
Serbia: Bosnians					
1. Negative intergroup contact	–				
2. Positive intergroup contact	−.34***	–			
3. Perceived system fairness	−.24*	.41	–		
4. Collective action	.29**	−.20*	−.22*	–	
5. Support for empowering policies	−.14	.41***	.14	.11	–
6. Working in solidarity	−.10	.59***	.29**	.11	.69***
Poland: Ukrainians					
1. Negative intergroup contact	–				
2. Positive intergroup contact	−.63***	–			
3. Perceived system fairness	−.34***	.46***	–		
4. Collective action	.16	−.11	−.30**	–	
5. Support for empowering policies	.10	−.02	−.15	.03	–
6. Working in solidarity	−.01	.28**	.02	.05	.24*

TABLE 3 (Continued)

	1	2	3	4	5
Switzerland: Muslims					
1. Negative intergroup contact	–				
2. Positive intergroup contact	−.42***	–			
3. Perceived system fairness	−.40***	.32**	–		
4. Collective action	.27**	−.18†	−.31**	–	
5. Support for empowering policies	−.11	−.02	−.24*	.25*	–
6. Working in solidarity	−.08	−.04	−.11	.21*	.55***

Note: †$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.

Moderation and mediation in multigroup SEM

While we did not have predictions regarding cross-country differences, we tested the generalizability of associations across contexts and minority groups by allowing for the detection of differences (by freeing certain paths when this improves model fit) while also maintaining parsimony (by keeping other paths fixed). To arrive at the final main effects model (where negative contact, positive contact, and perceived system-fairness predicted the three outcomes; interactions were not included at this stage) and final mediation model (where negative and positive contact are predictors of the three outcomes and perceived system fairness is a mediator), we compared models where all effects were allowed to vary across samples (freely estimated models) step-by-step to models where parameters were more constrained to be equal across samples. Eight effect parameters were released to arrive at the final main effects model (M6 in Table 5). One additional effect parameter was released for the final mediation model (M9 in Table 6; see Section 3c in SOM for further information).

Moderation models

To test preregistered moderation models (Model A in Figure 1), we added the interaction between negative contact and perceived system fairness to the final main effects model (M6 in Table 5). To formally compare nested models, we first added the interactions fixed to zero (M10 in Table 7). Next, the interactions were either constrained to be equal across samples (M11 in Table 7) or allowed to vary (M12 in Table 7). Neither model resulted in an improvement in model fit. While Model 12 yielded four significant interactions in two samples, comparing a moderation model where only these four significant interactions (in two samples) were freely estimated to one where all interactions were fixed at 0 also did not improve model fit (M13 in Table 7). Furthermore, all moderation models had a sub-par m fit compared to the main effects model. We thus conclude that the moderation hypothesis (H2) was not supported (see Section 5a in the SOM for further information).

We also explored whether perceived system fairness might moderate the effects of positive contact but found no support for this (see Section 5b in SOM for further information). Since the moderation models were not supported, we report on contact effects (including H1 results) from the mediation model only. Moreover, we ran models with demographic covariates (see Section 4 in SOM) and the additional models (below) exclusively using the mediation model.

Mediation models

Table 8 shows the results of the final mediation model (Model B in Figure 1, corresponding to M9 in Table 6). The effects of intergroup contact on the mediator (system fairness) are not shown in Table 8

TABLE 4 Model fit of measurement invariance testing with multigroup confirmatory factor analysis.

Model, type of test	Compared with	χ^2 (*df*)	CFI	RMSEA	SRMR	Δ*df*	ΔCFI	ΔRMSEA	ΔSRMR	Decision
M1: Configural invariance		1081.17*** (727)	.937	.066 [.057, .074]	.068					Accept
M2: Full metric invariance	M1	1255.565*** (793)	.918	.072 [.064, .079]	.093	66	−.19	+.006	+.025	Reject
M3: Partial metric invariance	M1	1183.095*** (789)	.930	.067 [.059, .074]	.080	62	−.07	+.001	+.012	Accept

Note: ***Significant at $p < .001$.

Abbreviations: CFI, comparative fit index; *df*, degrees of freedom; RMSEA, root mean square error of approximation; SRMR, standardized root mean square error of approximation; Δ, change in statistical values; χ^2, chi-square statistics.

TABLE 5 Model fit of the main effects models (baseline for moderation models).

Model	Compared with	χ^2 (*df*)	CFI	RMSEA	SRMR	Δ*df*	ΔCFI	ΔRMSEA	ΔSRMR	Decision
M4: Freely estimated main effects model		652.589*** (409)	.935	.073 [.062, .083]	.079					
M5: Fully constrained main effects model	M4	791.984*** (463)	.912	.079 [.070, .089]	.106	54	−.023	+.006	+.027	Reject
M6: Final main effects model	M4	712.390*** (45)	.931	.071 [.061, .081]	.089	46	−.004	−.002	+.010	Accept

Note: ***Significant at $p < .001$.

Abbreviations: CFI, comparative fit index; *df*, degrees of freedom; RMSEA, root mean square error of approximation; SRMR, standardized root mean square error of approximation; Δ, change in statistical values; χ^2, chi-square statistics.

TABLE 6 Model fit of the freely estimated, fully constrained, and the final mediation model.

Model	Compared with	χ^2 (*df*)	CFI	RMSEA	SRMR	Δ*df*	ΔCFI	ΔRMSEA	ΔSRMR	Decision
M7: Freely estimated mediation model		1183.10*** (789)	.930	.067 [.059, .074]	.080					
M8: Fully constrained mediation model	M7	1341.264*** (855)	.914	.071 [.064, .078]	.106	66	−.016	+.004	+.026	Reject
M9: Final mediation model	M7	1249.550*** (846)	.928	.065 [.057, .073]	.089	57	−.002	−.002	+.009	Accept

Note: ***Significant at $p < .001$.

Abbreviations: CFI, comparative fit index; *df*, degrees of freedom; RMSEA, root mean square error of approximation; SRMR, standardized root mean square error of approximation; Δ, change in statistical values; χ^2, chi-square statistics.

TABLE 7 Model fit of the moderation models.

Model	Compared with	χ^2 (*df*)	CFI	RMSEA	SRMR	Δ*df*	ΔCFI	ΔRMSEA	ΔSRMR	Decision
M10: Interactions fixed at 0 model		944.599*** (546)	.894	.080 [.072, .089]	.097					
M11: Constrained interactions model	M10	944.276*** (543)	.893	.081 [.072, .089]	.097	3	−.001	+.001	+.000	Reject
M12: Free interactions model	M10	912.761*** (525)	.897	.081 [.072, .090]	.093	18	+.004	.000	−.004	Reject
M13: Free significant interactions model	M10	931.548*** (539)	.896	.080 [.072, .089]	.094	7	+.002	.000	−.003	Reject

Note: ***Significant at $p < .001$.

Abbreviations: CFI, comparative fit index; *df*, degrees of freedom; RMSEA, root mean square error of approximation; SRMR, standardized root mean square error of approximation; Δ, change in statistical values; χ^2, chi-square statistics.

TABLE 8 Mediation model results: effects on dependent variables.

	Collective action			Support for empowering policies			Working in solidarity		
	Direct	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**
Chile: Peruvians									
Negative intergroup contact	0.10 (.05)*	0.00 (.00)	0.10 (.05)*	0.08 (.07)	0.00 (.01)	0.08 (.07)	0.20 (.07)**	0.00 (.01)	0.20 (.07)**
Positive intergroup contact	0.04 (.05)	−0.02 (.04)	0.02 (.06)	**−0.58 (.19)****	0.06 (.06)	−0.52 (.16)**	0.46 (.10)***	−0.06 (.03)	0.41 (.09)***
Perceived system fairness	**−0.05 (.08)**	–	**−0.05 (.08)**	**0.12 (.12)**	–	**0.12 (.12)**	−0.12 (.06)*	–	−0.12 (.06)*
R^2	.02			.25*			.04*		
Chile: Mapuche									
Negative intergroup contact	0.10 (.05)*	0.00 (.02)	0.10 (.05)*	0.08 (.07)	0.00 (.02)	0.08 (.07)	0.20 (.07)**	0.00 (.03)	0.20 (.07)**
Positive intergroup contact	**−0.44 (.11)*****	−0.11 (.03)***	−0.54 (.11)***	0.35 (.08)***	−0.18 (.04)***	0.18 (.08)*	**0.30 (.13)***	−0.18 (.06)**	0.12 (.12)
Perceived system fairness	−0.23 (.05)***	–	−0.23 (.05)***	−0.38 (.06)***	–	−0.38 (.06)***	**−0.40 (.12)****	–	**−0.40 (.12)****
R^2	.34***			.16**			.16*		
U.K.: Asians									
Negative intergroup contact	0.10 (.05)*	0.00 (.02)	0.10 (.05)*	0.08 (.07)	0.00 (.02)	0.08 (.07)	0.20 (.07)**	0.00 (.01)	0.20 (.07)**
Positive intergroup contact	0.04 (.05)	−.11 (.03)***	−0.07 (.05)	0.35 (.08)***	−0.18 (.04)***	0.18 (.08)*	0.46 (.10)***	−0.06 (.03)*	0.41 (.09)***
Perceived system fairness	−0.23 (.05)***	–	−0.23 (.05)***	−0.38 (.06)***	–	−0.38 (.06)***	−0.12 (.06)*	–	−0.12 (.06)*
R^2	.10**			.23**			.06*		

TABLE 8 (Continued)

	Collective action			Support for empowering policies			Working in solidarity		
	Direct	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**
U.S.A.: Muslims									
Negative intergroup contact	0.10 (.05)*	0.00 (.02)	0.10 (.05)*	0.08 (.07)	0.00 (.02)	0.08 (.07)	0.20 (.07)**	0.00 (.01)	0.20 (.07)**
Positive intergroup contact	0.04 (.05)	−0.11 (.03)***	−0.07 (.05)	0.35 (.08)***	−0.18 (.04)***	0.18 (.08)*	0.46 (.10)***	−0.06 (.03)*	0.41 (.09)***
Perceived system fairness	−0.23 (.05)***	–	−0.23 (.05)***	−0.38 (.06)***	–	−0.38 (.06)***	−0.12 (.06)*	–	−0.12 (.06)*
R^2	.07**			.21**			.08†		
Serbia: Bosnians									
Negative intergroup contact	0.10 (.05)*	0.00 (.02)	0.10 (.05)*	0.08 (.07)	0.00 (.02)	0.08 (.07)	0.20 (.07)**	0.00 (.01)	0.20 (.07)**
Positive intergroup contact	0.04 (.05)	−0.11 (.03)***	−0.07 (.05)	**0.82 (.13)*** **	−0.18 (.04)***	0.64 (.13)***	**1.01 (.12)*** **	−0.06 (.03)*	0.95 (.12)***
Perceived system fairness	−0.23 (.05)***	–	−0.23 (.05)***	−0.38 (.06)***	–	−0.38 (.06)***	−0.12 (.06)*	–	−0.12 (.06)*
R^2	.08**			.31***			.54***		
Poland: Ukrainians									
Negative intergroup contact	0.10 (.05)*	0.00 (.02)	0.10 (.05)*	0.08 (.07)	0.00 (.02)	0.08 (.07)	0.20 (.07)**	0.00 (.01)	0.20 (.07)**
Positive intergroup contact	0.04 (.05)	−.11 (.03)***	−0.07 (.05)	0.35 (.08)***	−0.18 (.04)***	0.18 (.08)*	0.46 (.10)***	−0.06 (.03)*	0.41 (.09)***
Perceived system fairness	−0.23 (.05)***	–	−0.23 (.05)***	−0.38 (.06)***	–	−0.38 (.06)***	−0.12 (.06)*	–	−0.12 (.06)*
R^2	.13**			.06*			.06*		
Switzerland: Muslims									
Negative intergroup contact	0.10 (.05)*	0.10 (.04)*	0.19 (.06)**	0.08 (.07)	0.16 (.07)*	0.24 (.10)*	0.20 (.07)**	0.05 (.03)	0.25 (.08)**

(Continues)

TABLE 8 (Continued)

	Collective action			Support for empowering policies			Working in solidarity		
	Direct	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**
Positive intergroup contact	0.04 (.05)	−.11 (.03)***	−0.07 (.05)	0.35 (.08)***	−0.18 (.04)***	0.18 (.08)*	0.46 (.10)***	−0.06 (.03)*	0.41 (.09)***
Perceived system fairness	−0.23 (.05)***	–	−0.23 (.05)***	−0.38 (.06)***	–	−0.38 (.06)***	−0.12 (.06)*	–	−0.12 (.06)*
R^2	.20***			.14**			.06*		

Note: Entries represent unstandardized coefficients (*B*) with standard errors in parenthesis (*SE*). Values indicated in bold were allowed to vary. Confidence intervals can be calculated as $B \pm (1.96)*(SE)$. $^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$. The effects of intergroup contact on perceived system fairness were invariant in 6 out of 7 samples (differing among Muslims in Switzerland) and are not included in the table (see main text; perceived system fairness R^2 range = .10 to .38).

but presented here. The effects of intergroup contact on perceived system fairness were invariant in six out of seven samples. Across samples, positive contact predicted higher perceptions of system fairness ($b = .47$, $SE = .07$, $p < .001$). In contrast, in six out of seven samples, negative contact was dissociated from perceived system fairness ($b = -.00$, $SE = .06$, $p = .965$). The exception were Muslims in Switzerland, where negative contact predicted lower system-fairness perceptions ($b = -.42$, $SE = .17$, $p = .014$). Below, we outline the direct, indirect, and total effects of positive and negative contact on support for social change.

Negative contact

As Table 8 shows (under total effects), as expected, negative contact (H1) was significantly associated with more support for social change in all seven samples for two out of three outcomes: collective action and working in solidarity. For policy support, however, there was only one significant (positive) total effect among Muslims in Switzerland. Examining direct and indirect effects, we found positive direct effects on collective action and working in solidarity in all samples but no direct effect on policy support. There was little support for the expected indirect effects (H3). Only among Muslims in Switzerland was negative contact associated with more support for social change via lower perceptions of system-fairness for two out of the three outcomes: policy support and working in solidarity.

Positive contact

In terms of total effects (see Table 8), positive contact was significantly associated with *more* support for social change in six out of seven samples for two out of three outcomes: policy support and working in solidarity. The only two negative total effects were found in the two Chilean samples (on policy support among Peruvians and on collective action among the Mapuche). Examining direct and indirect effects we found that positive contact was directly and significantly associated with more support for social change in six out of seven samples for two out of three outcomes: policy support and working in solidarity, not collective action. Exclusively in both Chilean samples, however, positive contact directly predicted less support for social change (on policy support in both samples and on collective action among Mapuche). In line with expected indirect effects (H4), positive contact was associated with less support for social change in all seven samples through higher perceived system fairness (negative indirect effects on working in solidarity in all seven samples, on collective action and policy support in six samples).

In sum, negative contact was reliably associated with more support for social change especially in terms of collective action and more willingness to work in solidarity, though not in terms of policy support (partial support for H1). We found little evidence that this association operated via perceived system-fairness (H3; only in one sample). Positive contact had both positive and negative direct effects, and it was reliably associated with less support for social change via stronger perceptions of system fairness (in line with H4). However, in terms of the total effects, we found evidence of sedative effects only in the Chilean samples. In all other samples positive contact predicted more policy support and willingness to work in solidarity, though not more collective action.

Additional models

We ran three sets of additional models. First, we tested whether the effects of negative contact on perceived system fairness and support for social change might depend on the presence and amount of positive contact, and vice versa. We did not find support for such interactions (see Section 6a in SOM). Second, since research suggests that positive contact effects may differ depending on whether or not negative contact is included in the model (Reimer et al., 2017; Reimer & Sengupta, 2023), we ran supplementary mediation models estimating positive contact effects without including negative contact in the model, and vice versa. As in earlier

research, significant negative total effects of positive contact on collective action were found more often when negative contact was omitted from the model (see Section 6b in SOM). Third, we ran both moderation and mediation models in the pooled samples to gauge whether non-significant effects (e.g., from positive contact to collective action) might be due to a lack of power in multi-group models.[6] The pooled analyses largely replicated the multigroup models: while positive contact was reliably associated with less support for social change indirectly through enhanced perceptions of system fairness, its total effects were *never* negative (non-significant for collective action, positive for policy support, and working in solidarity). In this analysis, negative contact had significant positive associations with all the outcomes (see Section 6c in the SOM for further information).

Deviations from the preregistration

In this section, we summarize how and why we deviated from the preregistration (available at https://osf.io/9z6v3/). For more detailed information regarding these deviations, see Section 2 in the SOM. We had two main deviations from the pre-registration. First, in the current manuscript, we only addressed Aim 1 of the preregistration by testing moderation models in the absence of perceived group differences as a mediator (model A in Figure 1). We complemented this with non-preregistered but theoretically informed models where perceived system justification mediates the effects of intergroup contact on support for social change (model B in Figure 1). This deviates from the pre-registration because we initially planned to write up a two-study paper including both the ethnic minority survey data from the ZIP and the LGBTIQ+ survey data as separate studies. However, since the LGBTIQ+ survey data consists of more samples, allowing for multilevel analyses (Aim 2 of the preregistration), and since an additional variable we were interested in as a mediator (perceived group differences) could only be included in the analysis of the LGBTIQ+ samples (in the ethnic minority samples, the data showed it could not be reliably distinguished from the measure of perceived system fairness), we decided to write these studies up as two separate papers.

Second, in terms of the method, rather than pooling the ethnic minority data as preregistered, we used more sophisticated latent multigroup models, as these more accurately represent the cross-cultural data (Putnick & Bornstein, 2016). This required us to drop small samples ($N \leq 30$) from the analysis and to define collective action as a single measure with four items to achieve configural and (partial) metric invariance.

We also had other minor deviations. While we preregistered that we would include a single covariance between negative contact and perceived system fairness (in the moderation models), we included covariances between all the predictors/moderators for consistency, as suggested by Mplus guidelines, and as this resulted in better model fit.[7] Moreover, in the exploratory section of the preregistration, we stated that we would explore not only the effects of positive contact in the form of positive/friendly interactions, as is done in the current manuscript, but also the effects of other positive contact variables such as friendship with majority group members. However, we ultimately decided to focus on the two parallel measures of positive and negative contact used in the current manuscript.[8] Finally, we ran the analyses only among the full samples and did not exclude those who failed the attention checks or outliers as preregistered, for two reasons: First, some participants reported that the instructions to the attention check questions were misleading, meaning that the answers had unclear validity (and on checks, this indeed turned out to be the case). Second, the two already published manuscripts using this data (Hässler et al., 2020, 2022) ran their models both with and without excluding (i) those who failed attention checks and (ii) outliers and concluded that these analytic decisions had negligible impact on the models.

[6]We did not run post-hoc power analyses to determine observed power, since they are uninformative when it comes to determining whether a non-significant effect is due to sample size (see O'Keefe, 2007). Power analyses for the larger ZIP project are contained in https://osf.io/6hfcu. Based on a a-priori power analyses, all participating scholars were encouraged to collect samples with at least 100 participants.

[7]Findings did not differ as a function of covariances included. See https://www.statmodel.com/ for Mplus guidelines.

[8]Potential implications of this decision are addressed in the discussion.

DISCUSSION

Research suggests that while negative contact with majority group members can promote minority group members' support for social change, positive contact, in contrast, can potentially undermine it. However, few studies to date have examined *simultaneously* how positive and negative contact may correspond with minority support for social change by including both forms of contact in the same analyses. This is a significant lacuna since assessing positive but not negative contact (and vice versa) risks conflating the presence of one with the absence of the other (Reimer & Sengupta, 2023). Moreover, recent research suggests positive and negative contact may interact, so that the effects of one depend on the other (Albzour et al., 2023; Árnadóttir et al., 2018, 2022; Prati et al., 2023).

The current study addresses these gaps in the literature by presenting the first multi-sample, cross-national examination of the joint associations and potential interplay of positive and negative contact on minority support for social change. It uses survey data from the ZIP (Hässler et al., 2020, 2022) to replicate these associations across different immigrant, ethnic-racial, and indigenous minority groups in six comparison countries by way of stringent multi-group mediation and moderation models. Moreover, the current study sheds light on when and how those effects occur. More precisely, we investigated whether system-justifying beliefs in the form of perceiving the system (or society) as fair might moderate the associations of intergroup contact with minority support for social change. Alternatively, we explored whether such beliefs mediate the same associations. We did not find support for moderation (H2). We also did not find that positive and negative contact interacted in predicting minority support for social change. We did, however, find support for mediation, especially in the case of positive contact. Below, we first present an overview of the findings (based on the mediation models) and outline how they add to the literature. Thereafter, we discuss some limitations and policy implications of the findings.

Starting with negative contact, it was, as predicted, associated with more support for social change, especially in terms of collective action and more willingness to work in solidarity, but not in terms of policy support (partial support for H1). However, we found little evidence that this association operated via perceived system fairness (H3; only in one sample out of seven). As for positive contact, we found both positive and negative associations, and unlike negative contact, we consistently found indirect associations. Starting with the direct effects, positive contact was associated with *more* support for social change in six out of seven samples for two out of three outcomes (policy support and working in solidarity). Negative direct effects were exclusively found in the two Chilean samples (on policy support and collective action). As for indirect effects, positive contact was reliably associated with less support for social change via stronger perceptions of system fairness in all samples (in line with H4). In terms of the total effects of positive contact, we found evidence of sedative effects only in the Chilean samples. In all other samples, positive contact was associated with more support for social change (i.e., policy support and willingness to work in solidarity, while not associated with collective action).

This study adds to the scarce literature on the joint effects of positive and negative contact on minority support for social change by simultaneously examining their associations with minority support for social change across seven intergroup contexts in six countries. By simultaneously including positive and negative contact in the same analysis, we ensured that the presence of positive contact was not confounded with the absence of negative contact (or vice versa). In doing so, we qualified earlier findings based on pooled data that partially overlaps with the current paper (Hässler et al., 2020, 2022). In their large-scale multinational study, Hässler and colleagues applied specification curve analysis (see Simonsohn et al., 2020) to bivariate correlations between various indicators of contact and support for social change. Based on significant negative bivariate correlations, they concluded that intergroup contact was negatively associated with collective action and policy support (yet positively associated with working in solidarity) among minority group members. However, the authors themselves highlighted that there was important variation in the size and direction of these associations. Indeed, it is important to note that when it came to the ethnic minority samples, only 40% of the tested correlations were significantly negative, and crucially, a subset of these represent reliably significant correlations between *negative* contact and support for social change, which was reversed and named 'absence of negative

contact'. Our analysis adds to this work by examining positive and negative contact simultaneously, and by estimating their associations with support for social change within each ethnic minority sample. By adopting this approach, we were able to establish equivalence and test for possible cross-sample variation in the strength and direction of associations across seven ethnic minority samples in various intergroup contexts. This revealed that while positive contact was reliably associated with less support for social change indirectly, positive contact had both positive and negative direct effects, and negative total effects were in fact the exception (only found in the two Chilean samples). Moreover, in line with findings by Reimer et al. (2017) and Reimer and Sengupta (2023), our supplementary analyses showed that positive contact was more often associated with lower collective action when we removed negative contact from the model (see Section 6 in SOM). It warrants noting that Hässler et al. (2020) had a larger pooled sample of ethnic minority group members (and considered much larger LGBTIQ+ samples in separate analyses), with implications for statistical power. While separate analyses in some smaller ethnic minority samples would be underpowered, our multigroup models gain statistical power by including each sample in simultaneous analyses while also taking into account whether the associations vary across samples (as in moderation analysis). In support of the robustness of the findings in multigroup models, we largely replicated the results via supplementary analyses with pooled samples.

We take away from these two main points. Firstly, we concur with Reimer et al.'s (2017; see also Reimer & Sengupta, 2023) suggestion that earlier work may have conflated the presence of positive contact with the absence of negative contact, thus overestimating the extent to which positive contact undermines minority support for social change. That is not to say that positive contact never has sedative effects; indeed, we still found such effects, at least in Chile, and some prior work has found sedative effects of positive contact while accounting for negative contact (Bagci & Turnuklu, 2019). However, we urge researchers to include both positive and negative contact in their models to rule out that such effects might (partly) be explained by negative contact. Secondly, we show by pooling data across multiple distinct groups in diverse national contexts risks masking important differences between groups, such as that positive contact may be more likely to sedate collective action in some context than others, as is illustrated by our findings in the Chilean versus the other contexts. Regarding our finding that positive contact (only) undermined collective action in Chile, we note that Chile represents a sociopolitical context characterized by intergroup conflict (González et al., 2022) and widespread economic and social inequality – as indicated, for example, by the highest level of income inequality of the countries sampled in the current study (GINI index, World Bank, 2023), which disproportionally affects minority group members (Smith et al., 2021). We speculate that meaningful positive intergroup contact may be less frequent in such contexts, but that when it does occur, it might be more likely to undermine already more hazardous/costly minority actions for social change. Further cross-cultural research with representative samples is needed to better understand how intergroup contact informs minority support for social change in different intergroup contexts. Indeed, while extensive evidence exists showing that contextual factors at the country as well as regional level moderate the link between intergroup contact and prejudice (see Green et al., 2020; Kende et al., 2018), relatively few studies to date have examined the role of context when it comes to the link between intergroup contact and support for social change. A notable exception is a large-scale study of 22 countries, which found that minority group members were more likely to support social change towards equality when living in social contexts in which majority group members had more positive intergroup contact (Kauff et al., 2016). While the authors did not directly examine minority experiences of contact, this suggests that in such contexts, positive contact might not undermine – and perhaps promote – minority group members' support for social change. Moreover, country-level or regional policies may play a role in determining the extent to which minority group members support social change and seek rights equal to those of majority group members. Politi et al. (2022) found, for instance, that regional integration policies interacted with individual-level factors to predict immigrants' intentions to naturalize which would grant them rights otherwise limited to national majority group members. We urge researchers to examine contextual determinants of intergroup contact effects on minority support for social change, such as contextual-level inequality, conflict, contact experiences, and policies.

Additionally, the current study significantly advances our understanding of *how* positive contact may undermine minority support for social change. While prior work among Arab Israelis already showed that expectations of fair treatment mediated the sedative effects of positive contact on support for social change (Saguy et al., 2009), we add to the literature by establishing that this effect generalizes to other contexts as well. We document that system-justifying beliefs in the form of perceiving the system (or society) as fair reliably mediated the sedative effects of positive contact across multiple and distinct intergroup contexts and groups. Importantly however, positive contact also had positive direct effects in all samples, and apart from the Chilean samples, appeared to promote rather than undermine minority group members' support for social change overall. These findings are in line with findings by Hayward et al. (2018), who found that while positive contact had negative indirect effects on support for social change (via reduced group-based anger and perceived group discrimination), its total effects were either not significant, or were positive. We agree with the authors' interpretation that there may be alternative (unidentified) mechanisms at play by which positive contact promotes support for social change. Identifying such mechanisms would be valuable for policy makers and those conducting contact interventions, with these parties aiming to improve intergroup relations while ideally also enhancing support for social change among minority and majority group members alike.

Promising efforts have already been made in this direction. For example, using data from the ZIP (including the data in the current study), Hässler et al. (2022) found that 'empowering' positive contact (i.e., contact where minority group members feel that they are heard and are seen as competent) was either not related to or promoted more support for social change. Droogendyk et al. (2016) similarly found that 'supportive' positive contact, whereby majority group members communicate opposition to inequality, was positively associated with minority support for social change (via increased perceptions of injustice over intergroup inequality). Jointly, ours and prior findings thus suggest that perceived system fairness, group-based anger, and perceived injustice all play a role in explaining the effects of positive contact on minority support for social change (see also Hässler et al., 2021). A promising avenue for future research would be to simultaneously examine positive and negative contact and the above mediators, while also taking into account the supportive or empowering nature of positive contact. Such research would contribute to a comprehensive understanding of the link between minority group members' contact experiences and their support for social change.

The current analyses also have limitations. Firstly, the cross-sectional design limits any causal inferences, regarding, for example, the causal role of perceived system fairness as a mediator (see Fiedler et al., 2011). While experimental evidence exists supporting our contention that contact experiences can inform support for social change (Becker et al., 2013), very little research has simultaneously examined positive and negative contact and minority support for social change longitudinally (Reimer & Sengupta, 2023). This is a key avenue for future research, allowing researchers to examine to what extent the associations between intergroup contact and support for social change may be bi-directional, for instance. For example, engagement in collective action might involve both positive interactions with majority allies, as well as negative interactions with counter-protesters or security forces, with implications for future support for social change.

Secondly, we had rather 'general' measures of positive and negative contact. Prior research suggests that more specific forms of positive contact, such as friendship with majority group members, may (sometimes) be particularly likely to undermine minority support for social change. Yet, research also shows that friendship with majority group members need not necessarily undermine minority group members' support for social change (e.g., if majority friends communicate support for equality; Becker et al., 2013, see also Hässler et al., 2022). Moreover, friendship contact is also a powerful tool for enhancing *majority* group members' support for social change and, as such, may be indispensable to achieving actual social change (Hässler et al., 2020). Conversely, minority group members' negative contact experiences are likely to range from the unpleasant to the blatantly hostile or even violent (Albzour et al., 2023; Hayward et al., 2018). Blatantly hostile or violent contact is likely to signal intergroup inequality more strongly and may thus be more likely to undermine

the endorsement of system-justifying beliefs and to motivate support for change. Ideally, future research will be able to better capture the multifaceted nature of minority group members' intergroup experiences.

Despite these limitations, the current study represents a valuable addition to the research literature on intergroup contact and support for social change. By employing multigroup models across seven different intergroup samples in six countries and with indicators of both positive and negative contact, it significantly adds to the scarce knowledge regarding the joint effects of positive and negative contact on minority support for social change and the extent to which these effects generalize (or differ) across varied intergroup contexts. Through this approach, we illustrate that negative contact reliably predicts higher minority support for social change across intergroup contexts. As for positive contact, the findings suggest that prior work may have overstated the sedative effects of positive contact on minority group members' support for social change, while simultaneously indicating that positive contact may be more likely to sedate minority support for social change in some intergroup contexts than others. Research has already illustrated, for instance, that culture-level equality appears to boost and hierarchy values undermine the beneficial effects of positive contact on prejudice (Kende et al., 2018). We urge researchers to examine potential contextual determinants of the effects of intergroup contact on minority support for social change. Importantly, however, some mobilizing effects of positive contact on more support for social change were found in all samples in the current study. We thus conclude that positive contact does not reliably undermine and may even promote minority support for social change.

As for the policy implications of our findings, our findings suggest that negative contact experiences may drive ethnic minority group members' support for social change and thus potentially contribute to achieving greater equality. However, we do not take this to mean that negative contact should be promoted or encouraged to achieve social change. After all, negative contact has many undesirable effects, and in addition, our and others' findings show that positive intergroup interactions can also potentially promote (already often rather high) support for social change among minority group members. Furthermore, positive contact with members of disadvantaged groups can promote majority group members' support for social change towards equality (Hässler et al., 2020). Taken together, this suggests that policymakers, educators, and the like should strive to create opportunities for positive intergroup contact: opportunities where minority group members feel heard and empowered, majority group members feel accepted, and inequalities are discussed (Droogendyk et al., 2016; Hässler et al., 2021, 2022; Saguy et al., 2009; Shnabel et al., 2009). Such contact would sustain or even enhance minority group members' support for social change while also mobilizing majority allies to challenge the status quo and support social change towards equality.

AUTHOR CONTRIBUTIONS

Katrín Árnadóttir: Conceptualization; formal analysis; writing – original draft. **Gülseli Baysu:** Conceptualization; writing – review and editing; formal analysis. **Colette van Laar:** Conceptualization; supervision; writing – review and editing. **Karen Phalet:** Conceptualization; supervision; funding acquisition; writing – review and editing. **Linda R. Tropp:** Conceptualization; writing – review and editing. **Simone Sebben:** Writing – review and editing; conceptualization. **Johannes Ullrich:** Conceptualization; writing – review and editing; funding acquisition. **Tabea Hässler:** Conceptualization; writing – review and editing; funding acquisition.

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CONFLICT OF INTEREST STATEMENT

None.

DATA AVAILABILITY STATEMENT

The preregistration of this study, Supplementary Online Material (SOM) and model output are available on https://osf.io/9z6v3/. Data were not made available as participants did not consent to having the raw data published.

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REFERENCES

Abrams, D., & Grant, P. R. (2012). Testing the social identity relative deprivation (SIRD) model of social change: The political rise of Scottish nationalism. *British Journal of Social Psychology*, *51*(4), 674–689. https://doi.org/10.1111/j.2044-8309.2011.02032.x

Albzour, M., Bady, Z., Elcheroth, G., Penic, S., Reimer, N., & Green, E. G. T. (2023). Talking to a (segregation) wall: Intergroup contact and attitudes toward normalization among Palestinians from the occupied territories. *Political Psychology*, *44*, 43–59. https://doi.org/10.1111/pops.12816

Árnadóttir, K., Kende, J., Phalet, K., & Tropp, L. R. (2022). The interplay of positive and negative intergroup contact: Experiences of Latino/a youth in the US. *International Journal of Intercultural Relations*, *86*, 190–202. https://doi.org/10.1016/j.ijintrel.2021.12.004

Árnadóttir, K., Lolliot, S., Brown, R., & Hewstone, M. (2018). Positive and negative intergroup contact: Interaction not asymmetry. *European Journal of Social Psychology*, *48*(6), 784–800. https://doi.org/10.1002/ejsp.2365

Bagci, S. C., & Turnuklu, A. (2019). Intended, unintended, and unknown consequences of contact: The role of positive–negative contact on outgroup attitudes, collective action tendencies, and psychological well-being. *Social Psychology*, *50*(1), 7–23. https://doi.org/10.1027/1864-9335/a000355

Becker, J. C., Wright, S. C., Lubensky, M. E., & Zhou, S. (2013). Friend or ally: Whether cross-group contact undermines collective action depends on what advantaged group members say (or don't say). *Personality and Social Psychology Bulletin*, *39*(4), 442–455. https://doi.org/10.1177/0146167213477155

Byrne, B. M., Shavelson, R. J., & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin*, *105*(3), 456–466. https://doi.org/10.1037/0033-2909.105.3.456

Cakal, H., Hewstone, M., Schwär, G., & Heath, A. (2011). An investigation of the social identity model of collective action and the "sedative" effect of intergroup contact among black and white students in South Africa. *British Journal of Social Psychology*, *50*(4), 606–627. https://doi.org/10.1111/j.2044-8309.2011.02075.x

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling*, *14*(3), 464–504. https://doi.org/10.1080/10705510701301834

Cheung, G. W., & Rensvold, R. B. (1999). Testing factorial invariance across groups: A reconceptualization and proposed new method. *Journal of Management*, *25*(1), 1–27. https://doi.org/10.1177/014920639902500101

Cocco, V. M., Vezzali, L., Stathi, S., Di Bernardo, G. A., & Dovidio, J. F. (2023). Mobilizing or sedative effects? A narrative review of the association between intergroup contact and collective action among advantaged and disadvantaged groups. *Personality and Social Psychology Review*. Advance online publication. https://doi.org/10.1177/10888683231203141

Dixon, J., Tropp, L. R., Durrheim, K., & Tredoux, C. (2010). "Let them eat harmony": Prejudice-reduction strategies and attitudes of historically disadvantaged groups. *Current Directions in Psychological Science*, *19*(2), 76–80. https://doi.org/10.1177/0963721410363366

Droogendyk, L., Louis, W. R., & Wright, S. C. (2016). Renewed promise for positive cross-group contact: The role of supportive contact in empowering collective action. *Canadian Journal of Behavioural Science*, *48*(4), 317–327. https://doi.org/10.1037/cbs0000058

Fiedler, K., Schott, M., & Meiser, T. (2011). What mediation analysis can (not) do. *Journal of Experimental Social Psychology*, *47*(6), 1231–1236. https://doi.org/10.1016/j.jesp.2011.05.007

Fleischmann, F., Phalet, K., & Klein, O. (2011). Religious identification and politicization in the face of discrimination: Support for political Islam and political action among the Turkish and Moroccan second generation in Europe. *British Journal of Social Psychology*, *50*(4), 628–648. https://doi.org/10.1111/j.2044-8309.2011.02072.x

Foster, M. D., & Matheson, K. (1998). Perceiving and feeling personal discrimination: Motivation or inhibition for collective action? *Group Processes & Intergroup Relations*, *1*(2), 165–174. https://doi.org/10.1177/1368430298012004

González, R., Carvacho, H., & Jiménez-Moya, G. (2022). Psychology and indigenous people. *Annual Review of Psychology*, *73*, 431–459. https://doi.org/10.1146/annurev-psych-012921-045304

Graf, S., Paolini, S., & Rubin, M. (2014). Negative intergroup contact is more influential, but positive intergroup contact is more common: Assessing contact prominence and contact prevalence in five central European countries. *European Journal of Social Psychology*, *44*(6), 536–547. https://doi.org/10.1002/ejsp.2052

Green, E. G. T., Visintin, E. P., Sarrasin, O., & Hewstone, M. (2020). When integration policies shape the impact of intergroup contact on threat perceptions: A multilevel study across 20 European countries. *Journal of Ethnic and Migration Studies*, *46*(3), 631–648. https://doi.org/10.1080/1369183X.2018.1550159

Hässler, T., Shnabel, N., Ullrich, J., Arditti-Vogel, A., & SimanTov-Nachlieli, I. (2019). Individual differences in system justification predict power and morality-related needs in advantaged and disadvantaged groups in response to group disparity. *Group Processes & Intergroup Relations*, *22*(5), 746–766. https://doi.org/10.1177/1368430218773403

Hässler, T., Ullrich, J., Bernardino, M., Shnabel, N., Laar, C. V., Valdenegro, D., Sebben, S., Tropp, L. R., Visintin, E. P., González, R., Ditlmann, R. K., Abrams, D., Selvanathan, H. P., Branković, M., Wright, S., von Zimmermann, J., Pasek, M., Aydin, A., Zezelj, I., … Ugarte, L. M. (2020). A large-scale test of the link between intergroup contact and support for social change. *Nature Human Behaviour*, *4*(4), 380–386. https://doi.org/10.1038/s41562-019-0815-z

Hässler, T., Ullrich, J., Sebben, S., Shnabel, N., Bernardino, M., Valdenegro, D., Van Laar, C., González, R., Visintin, E. P., Tropp, L. R., Ditlmann, R. K., Abrams, D., Aydin, A. L., Pereira, A., Selvanathan, H. P., von Zimmermann, J., Lantos, N. A., Sainz, M., Glenz, A., … Pistella, J. (2022). Need satisfaction in intergroup contact: A multinational study of pathways toward social change. *Journal of Personality and Social Psychology*, *122*(4), 634–658. https://doi.org/10.1037/pspi0000365

Hässler, T., Uluğ, Ö. M., Kappmeier, M., & Travaglino, G. A. (2021). Intergroup contact and social change: An integrated contact-collective action model. *Journal of Social Issues*, *77*(1), 217–241. https://doi.org/10.1111/josi.12412

Hayward, L. E., Tropp, L. R., Hornsey, M. J., & Barlow, F. K. (2017). Toward a comprehensive understanding of intergroup contact: Descriptions and mediators of positive and negative contact among majority and minority groups. *Personality and Social Psychology Bulletin*, *43*(3), 347–364. https://doi.org/10.1177/0146167216685291

Hayward, L. E., Tropp, L. R., Hornsey, M. J., & Barlow, F. K. (2018). How negative contact and positive contact with whites predict collective action among racial and ethnic minorities. *British Journal of Social Psychology*, *57*(1), 1–20. https://doi.org/10.1111/bjso.12220

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology*, *33*(1), 1–27. https://doi.org/10.1111/j.2044-8309.1994.tb01008.x

Jost, J. T., Becker, J., Osborne, D., & Badaan, V. (2017). Missing in (collective) action: Ideology, system justification, and the motivational antecedents of two types of protest behavior. *Current Directions in Psychological Science*, *26*(2), 99–108. https://doi.org/10.1177/0963721417690633

Jost, J. T., Chaikalis-Petritsis, V., Abrams, D., Sidanius, J., van der Toorn, J., & Bratt, C. (2012). Why men (and women) do and don't rebel: Effects of system justification on willingness to protest. *Personality and Social Psychology Bulletin*, *38*(2), 197–208. https://doi.org/10.1177/0146167211422544

Jost, J. T., & Hunyady, O. (2005). Antecedents and consequences of system-justifying ideologies. *Current Directions in Psychological Science*, *14*(5), 260–265. https://doi.org/10.1111/j.0963-7214.2005.00377.x

Jost, J. T., & Kay, A. C. (2005). Exposure to benevolent sexism and complementary gender stereotypes: Consequences for specific and diffuse forms of system justification. *Journal of Personality and Social Psychology*, *88*(3), 498–509. https://doi.org/10.1037/0022-3514.88.3.498

Kauff, M., Green, E. G., Schmid, K., Hewstone, M., & Christ, O. (2016). Effects of majority members' positive intergroup contact on minority members' support for ingroup rights: Mobilizing or demobilizing effects? *European Journal of Social Psychology*, *46*(7), 833–839. https://doi.org/10.1002/ejsp.2194

Kende, J., Phalet, K., Van den Noortgate, W., Kara, A., & Fischer, R. (2018). Equality revisited: A cultural meta-analysis of intergroup contact and prejudice. *Social Psychological and Personality Science*, *9*(8), 887–895. https://doi.org/10.1177/1948550617728993

Lemmer, G., & Wagner, U. (2015). Can we really reduce ethnic prejudice outside the lab? A meta-analysis of direct and indirect contact interventions. *European Journal of Social Psychology*, *45*(2), 152–168. https://doi.org/10.1002/ejsp.2079

MacInnis, C. C., & Hodson, G. (2019). Extending the benefits of intergroup contact beyond attitudes: When does intergroup contact predict greater collective action support? *Journal of Theoretical Social Psychology*, *3*(1), 11–22. https://doi.org/10.1002/jts5.23

Muthén, L., & Muthén, B. (2017). *Mplus user's guide* (8th ed.). Muthén & Muthén.

Napier, J. L., Bettinsoli, M. L., & Suppes, A. (2020). The palliative function of system-justifying ideologies. *Current Opinion in Behavioral Sciences*, *34*, 129–134. https://doi.org/10.1016/j.cobeha.2020.03.002

O'Keefe, D. J. (2007). Brief report: Post hoc power, observed power, a priori power, retrospective power, prospective power, achieved power: Sorting out appropriate uses of statistical power analyses. *Communication Methods and Measures*, *1*(4), 291–299. https://doi.org/10.1080/19312450701641375

Osborne, D., Jost, J. T., Becker, J. C., Badaan, V., & Sibley, C. G. (2019). Protesting to challenge or defend the system? A system justification perspective on collective action. *European Journal of Social Psychology*, *49*(2), 244–269. https://doi.org/10.1002/ejsp.2522

Osborne, D., & Sibley, C. G. (2013). Through rose-colored glasses: System-justifying beliefs dampen the effects of relative deprivation on well-being and political mobilization. *Personality and Social Psychology Bulletin*, *39*(8), 991–1004. https://doi.org/10.1177/0146167213487997

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*(5), 751–783. https://doi.org/10.1037/0022-3514.90.5.751

Politi, E., Bennour, S., Lüders, A., Manatschal, A., & Green, E. G. (2022). Where and why immigrants intend to naturalize: The interplay between acculturation strategies and integration policies. *Political Psychology*, *43*(3), 437–455. https://doi.org/10.1111/pops.12771

Prati, F., Kenfack, C. S. K., Hewstone, M., & Rubini, M. (2023). Positive and negative contact between Africans and native Italians: Importance for migrants' collective action in support of their and other groups' rights. *Journal of Community & Applied Social Psychology*, *33*, 1362–1380.

Putnick, D. L., & Bornstein, M. H. (2016). Measurement invariance conventions and reporting: The state of the art and future directions for psychological research. *Developmental Review*, *41*, 71–90. https://doi.org/10.1016/j.dr.2016.06.004

Reimer, N. K., Becker, J. C., Benz, A., Christ, O., Dhont, K., Klocke, U., Neji, S., Rychlowska, M., Schmid, K., & Hewstone, M. (2017). Intergroup contact and social change: Implications of negative and positive contact for collective action in advantaged and disadvantaged groups. *Personality and Social Psychology Bulletin*, *43*(1), 121–136. https://doi.org/10.1177/0146167216676478

Reimer, N. K., & Sengupta, N. K. (2023). Meta-analysis of the "ironic" effects of intergroup contact. *Journal of Personality and Social Psychology*, *124*(2), 362–380. https://doi.org/10.1037/pspi0000404

Rucker, J. M., & Richeson, J. A. (2021). Beliefs about the interpersonal vs. structural nature of racism and responses to racial inequality. In *The Routledge international handbook of discrimination, prejudice and stereotyping* (pp. 13–25). Routledge.

Saguy, T., Tausch, N., Dovidio, J. F., & Pratto, F. (2009). The irony of harmony: Intergroup contact can produce false expectations for equality. *Psychological Science*, *20*(1), 114–122. https://doi.org/10.1111/j.1467-9280.2008.02261.x

Schäfer, S. J., Kauff, M., Prati, F., Kros, M., Lang, T., & Christ, O. (2021). Does negative contact undermine attempts to improve intergroup relations? Deepening the understanding of negative contact and its consequences for intergroup contact research and interventions. *Journal of Social Issues*, *77*(1), 197–216. https://doi.org/10.1111/josi.12422

Sengupta, N. K., & Sibley, C. G. (2013). Perpetuating one's own disadvantage: Intergroup contact enables the ideological legitimation of inequality. *Personality and Social Psychology Bulletin*, *39*(11), 1391–1403. https://doi.org/10.1177/0146167213497593

Shnabel, N., Nadler, A., Ullrich, J., Dovidio, J. F., & Carmi, D. (2009). Promoting reconciliation through the satisfaction of the emotional needs of victimized and perpetrating group members: The needs-based model of reconciliation. *Personality and Social Psychology Bulletin*, *35*(8), 1021–1030. https://doi.org/10.1177/0146167209336610

Simonsohn, U., Simmons, J. P., & Nelson, L. D. (2020). Specification curve analysis. *Nature Human Behaviour*, *4*(11), 1208–1214. https://doi.org/10.1038/s41562-020-0912-z

Smith, E. M., González, R., & Frigolett, C. (2021). Understanding change in social-movement participation: The roles of social norms and group efficacy. *Political Psychology*, *42*(6), 1037–1051. https://doi.org/10.1111/pops.12733

Stronge, S., Sengupta, N. K., Barlow, F. K., Osborne, D., Houkamau, C. A., & Sibley, C. G. (2016). Perceived discrimination predicts increased support for political rights and life satisfaction mediated by ethnic identity: A longitudinal analysis. *Cultural Diversity and Ethnic Minority Psychology*, *22*(3), 359–368. https://doi.org/10.1037/cdp0000074

Suppes, A., Napier, J. L., & van der Toorn, J. (2019). The palliative effects of system justification on the health and happiness of lesbian, gay, bisexual, and transgender individuals. *Personality and Social Psychology Bulletin*, *45*(3), 372–388. https://doi.org/10.1177/0146167218785156

Swim, J. K., Hyers, L. L., Cohen, L. L., Fitzgerald, D. C., & Bylsma, W. H. (2003). African American college students' experiences with everyday racism: Characteristics of and responses to these incidents. *Journal of Black Psychology*, *29*(1), 38–67. https://doi.org/10.1177/0095798402239228

Tausch, N., Saguy, T., & Bryson, J. (2015). How does intergroup contact affect social change? Its impact on collective action and individual mobility intentions among members of a disadvantaged group. *Journal of Social Issues*, *71*(3), 536–553. https://doi.org/10.1111/josi.12127

Thalmayer, A. G., Toscanelli, C., & Arnett, J. J. (2021). The neglected 95% revisited: Is American psychology becoming less American? *American Psychologist*, *76*(1), 116–129. https://doi.org/10.1037/amp0000622

Tropp, L. R. (2007). Perceived discrimination and interracial contact: Predicting interracial closeness among black and white Americans. *Social Psychology Quarterly*, *70*(1), 70–81. https://doi.org/10.1177/019027250707000108

Tropp, L. R., Hawi, D. R., Van Laar, C., & Levin, S. (2012). Cross-ethnic friendships, perceived discrimination, and their effects on ethnic activism over time: A longitudinal investigation of three ethnic minority groups. *British Journal of Social Psychology*, *51*(2), 257–272. https://doi.org/10.1111/j.2044-8309.2011.02050.x

van Zomeren, M., Postmes, T., & Spears, R. (2008). Toward an integrative social identity model of collective action: A quantitative research synthesis of three socio-psychological perspectives. *Psychological Bulletin*, *134*(4), 504–535. https://doi.org/10.1037/0033-2909.134.4.504

van Zomeren, M., Spears, R., Fischer, A. H., & Leach, C. W. (2004). Put your money where your mouth is! Explaining collective action tendencies through group-based anger and group efficacy. *Journal of Personality and Social Psychology*, *87*(5), 649–664. https://doi.org/10.1037/0022-3514.87.5.649

World Bank. (2023). *GINI index* (World Bank estimate). https://data.worldbank.org/indicator/SI.POV.GINI

Wright, S. C., & Lubensky, M. (2009). The struggle for social equality: Collective action vs. prejudice reduction. In S. Demoulin, J. P. Leyens, & J. Dovidio (Eds.), *Intergroup misunderstandings: Impact of divergence social identities* (pp. 291–310). Psychology Press.

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