A large-scale test of the link between intergroup contact and support for social change

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Abstract

Guided by the early findings of social scientists, practitioners have long advocated for greater contact between groups to reduce prejudice and increase social cohesion. Recent work, however, suggests that intergroup contact can undermine support for social change toward greater equality, especially among disadvantaged group members. Using a large and heterogeneous dataset (N=12,997 individuals from 69 countries), we demonstrate that intergroup contact and support for social change toward greater equality are positively associated among members of advantaged groups (ethnic majorities and cis-heterosexuals), but negatively associated among disadvantaged groups (ethnic minorities and sexual and gender minorities). Specification curve analysis revealed important variation in the size—and at times, direction—of correlations, depending on how contact and support for social change were measured. This allowed us to identify one type of support for change, willingness to work in solidarity, that is positively associated with intergroup contact among both advantaged and disadvantaged group members.

Since initial efforts toward racial desegregation in the United States, social scientists[1] policymakers and civic leaders supporting racial desegregation[2] have advocated for bringing advantaged and disadvantaged group members together for contact with each other in an effort to foster improved relations and greater intergroup equality. Evidence gathered over several decades shows that intergroup contact can reduce prejudice and increase social cohesion across group divides[3,4]. A new line of thinking, however, suggests that contact can have an unintended effect: greater perceptions of intergroup harmony may undermine people's willingness to demand and advocate for greater equality and social justice, especially among members of disadvantaged groups[5-8]. Given the importance of these divergent trends for public policy, comprehensive and rigorous tests are needed to elucidate when contact may be associated with more or less support for social change. This research provides such a test using a large and heterogeneous dataset.

The relation between intergroup contact and support for social change is more nuanced than is typically recognized. Among members of advantaged groups, such as ethnic majorities and cis-heterosexuals (i.e., heterosexuals whose gender identity corresponds to their assigned sex), contact with members of disadvantaged groups, such as ethnic minorities and LGBTIQ+ individuals (i.e., individuals identifying as lesbian, gay, bisexual, transgender, intersexual, queer, and other sexual or gender minorities) is generally—but not invariably— associated with greater support for intergroup equality and social change[9-11]. Yet, in some cases, contact may improve advantaged group members' feelings toward disadvantaged groups while having little impact on their support for policies or actions designed to redress group-based inequalities[12].

Among disadvantaged group members, support for social change is generally thought to be motivated by perceived injustice and anger[13,14]. Yet, it is possible that these feelings can be undercut to the extent that contact fosters perceptions of harmonious intergroup relations.

As a result, intergroup contact may curb disadvantaged group members' motivation to fight for greater equality[6,8,9]. The potential for contact to both promote and undermine support for social change highlights the need for research elucidating when, for whom, and in what contexts intergroup contact predicts people's willingness to advocate and take action for social equality.

In trying to answer this question, it is important to recognize further that the forms, content, and nature that contact can take are as varied as are efforts to achieve social change. To illustrate, members of advantaged and disadvantaged groups may be friends with each other; alternatively, they may only be acquainted with each other, or they simply may know of people from their own group who have contact with people in the other group. Contact might also differ in its valence, ranging from positive to negative in experience. Similarly, action for social change can include a range of activities, such as attending demonstrations, signing petitions, raising peers' awareness of inequality, supporting policies that empower disadvantaged groups, or working in solidarity with other groups. To establish both whether and when contact predicts social change, it is necessary to systematically assess the relationship between these different forms of contact and actions for social change.

However, as is typically the case in social science research, the existing studies have used a wide range of conceptualizations and measures of contact and support for change to assess these constructs. Research also makes use of a wide range of methodologies, analytic approaches, and samples[5,9,15]. While these diverse methods may help to triangulate the overall effects of contact, such variation makes it difficult to provide reliable answers to questions that carry critical implications for public policy. To assess the reliability of a particular finding, and the characteristics of studies that are associated with stronger, weaker, or reversed effects, a study must be repeated across many contexts using comparable measures and analytic procedures. The present research tests for both the reliability of the

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association between contact and support for social change and its potential variability across the many measures and analytic decisions commonly used.

In this multi-national collaboration, all researchers included the same extensive array of commonly used measures of contact and support for social change in assessment (see Table 1). This enabled us to estimate an overall correlation between contact and social change, as well as conditional correlations that arise from different combinations of varied measures assessing contact and social change[16-18].

<Table 1 about here>

Heeding calls for more collaborative, high-powered, transparent, and reproducible research processes[19], we test the association between contact and support for social change using a large and heterogeneous dataset, sampling 12,997 participants from 69 countries and four populations (ethnic majorities, cis-heterosexuals, ethnic minorities, and LGBTIQ+ individuals; see Supplementary Tables 1-3 for more details). Note that the term 'ethnic minorities' is used as an umbrella term, denoting groups within a country who are structurally disadvantaged due to their racial, ethnic, national, tribal, religious, or cultural backgrounds; the specific backgrounds of ethnic minority groups are likely to vary across countries, depending on historical patterns of migration and colonization[20]. While a large body of intergroup contact research has focused on racial and ethnic relations, contact between members of LGBTIQ+ communities and cis-heterosexuals has been largely neglected[7]. Including samples of cis-heterosexuals and LGBTIQ+ individuals–who often face direct discrimination by cis-heterosexuals[21] as well as structural disadvantages[22]–allowed examination of the association between contact and support for social change among disadvantaged and advantaged groups that are consistent across all countries.

The study followed a preregistered analysis plan stored along with the questionnaires, data, and code at: https://osf.io/m5pb6/ (see also Supplementary Table 13). To estimate the

relation between contact and support for social change, we calculated bivariate correlations after removing the sample means from the data via residualization (which is comparable to a multilevel analysis with random intercepts). Although we expected that contact and support for social change would generally be positively related among advantaged groups (ethnic majorities and cis-heterosexuals) and negatively related among disadvantaged groups (ethnic minorities and LGBTIQ+ individuals), variations in these overall associations are of particular interest. We used specification curve analysis[23] to probe the variation in the direction and magnitude of the association between contact and social change using every combination of available measures (see Supplementary Figure 3). In addition, we tested the impact of two analytic decisions typically faced by survey researchers: whether to exclude or include statistical outliers and/or participants who failed the attention check. Combining these four model specification factors in a full factorial design (Supplementary Table 7) —5 (support for social change measures) $\times$ 8 (contact measures) [6 for LGBTIQ+ individuals for whom we did not assess quantity of contact, see Table 1] $\times$ 2 (attention check failures included/excluded) x 2 (outliers included/excluded) — results in 160 model specifications [120 for LGBTIQ+ individuals]. Thus, summing across the four populations, there were 600 opportunities to estimate the correlation between contact and support for social change.

First, we conducted an individual significance test of the Pearson correlation for each single model specification. We performed one-tailed tests using an alpha of .05 in line with our preregistered directional hypotheses.

Next, to test the overall hypothesis that contact predicts social change positively for advantaged groups and negatively for disadvantaged groups, we conducted a joint significance test[23] (Supplementary Figure 3) for each of the four populations. Considering results of all 160 [120] model specifications for a given population at once, this joint significance test indicates whether the null hypothesis should be rejected (i.e., correlations are

not different from zero). Using permutation, we determined the likelihood of obtaining the observed number of significant correlations by chance (if the null hypothesis was true) by shuffling the data set 1,000 times. We rejected the null hypothesis when this likelihood was less than .05. Table 2 shows the key results of the tests of the preregistered hypotheses. According to the joint significance test, the number of significant correlations in the predicted direction clearly exceeded the number expected by chance for all four populations. After adjusting the *p*-values to cap the probability of false discoveries at 5%[24], the number of significant correlations was only slightly smaller (cf. numbers in parentheses in Table 2; see also Supplementary Tables 9-10). Thus, we obtained consistent support for the preregistered hypotheses that the correlation between contact and support for social change is positive among ethnic majority group members and cis-heterosexuals and negative among ethnic minority group members and LGBTIQ+ individuals.

< Table 2 about here >

To examine in more detail how results varied depending on model specification, we visually inspected the specification curves. Figure 1A shows all results for ethnic majorities. The top of the figure shows the sorted correlations between contact and support for social change, along with confidence intervals for the population value. The bottom of Figure 1A indicates the model specification underlying each correlation. For example, the model specification that produced the largest positive correlation between contact and social change among ethnic majorities (highlighted on the far right of Figure 1A) uses 'working in solidarity' as a measure of support for social change in combination with the measure 'positive contact', excluding participants who failed the attention check and statistical outliers. Figure 1B shows all results for cis-heterosexuals. Visual examination of Figures 1A and 1B reveals that almost all correlations between contact and support for social change were positive among advantaged groups. Moreover, correlations varied considerably

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depending on model specification, ranging from $r = .01$ to $r = .46$ (mean $r = .20$) among ethnic majorities and from $r = -.11$ to $r = .43$ (mean $r = .23$) among cis-heterosexuals.

Meta-regression (Supplementary Table 8) revealed which measures and analytic decisions produced larger or smaller correlations. The coefficients shown in parentheses in Figures 1A and 1B represent the predicted change in correlations (relative to the grand mean of correlations) resulting from using one particular measure or analytic decision (see Supplementary Table 8 for individual significance tests).

The effects of using any particular measure of support for social change were similar across both advantaged groups (see cross-validation analyses in Supplementary Table 11). Many of the largest positive correlations between intergroup contact and support for social change include the 'working in solidarity' measure. This means that the predicted positive correlation between contact and support for social change was particularly clear with regard to advantaged group members' willingness to work in solidarity with members of disadvantaged groups. In contrast, model specifications including 'raising ingroup awareness' consistently produced smaller positive correlations. Among measures of contact, 'positive contact' produced larger positive correlations among both ethnic majorities and cis-heterosexuals, while patterns of effects for other contact measures were more varied across ethnic majorities and cis-heterosexuals. Finally, both analytic decisions—to include or exclude attention check failures or statistical outliers—had negligible effects on the size of the correlations.

In contrast to the consistent positive correlations observed among advantaged groups, visual examination of Figures 2A and 2B reveals that correlation coefficients ranged from $r = -.28$ to $r = .21$ (mean $r = -.04$) among ethnic minorities and from $r = -.37$ to $r = .15$ (mean $r = -.09$) among LGBTIQ+ individuals.

Despite overall support for the predicted negative relation, the specific measure of support for social change used in model specification determined the size and direction of the correlation for both ethnic minorities and LGBTIQ+ individuals. Larger negative correlations between contact and support for social change resulted from model specifications including 'raising ingroup awareness' or 'high cost collective action'. By contrast, positive correlations were almost exclusively produced by model specifications including 'working in solidarity' as the measure of support for social change.

With regard to the contact measures, the most striking results were the strong negative correlations revealed by measures of 'absence of negative contact'. That is, members of disadvantaged groups who reported fewer negative contact experiences (e.g., direct or indirect experiences of derogation and discrimination) reported less support for social change. Also, model specifications including 'number of outgroup friends' as the contact measure produced fairly consistent and significant negative correlations with measures of support for social change. Interestingly, 'positive contact' was positively related to 'working in solidarity' but negatively related to other measures of support for social change. Again, the exclusion of attention check failures and statistical outliers (i.e., analytic decisions) had negligible effects on the size of the correlations. Cross-validation analyses (Supplementary Table 11) confirmed that there were highly similar patterns of results among ethnic minorities and LGBTIQ+ individuals, indicating robustness and generalizability.

In summary, the confirmatory analyses support the preregistered hypotheses that intergroup contact and support for social change toward greater equality are positively associated among members of advantaged groups (ethnic majorities and cis-heterosexuals), but negatively associated among disadvantaged groups (ethnic minorities and LGBTIQ+ individuals). However, the multifaceted analyses presented here, involving 600 tests of the

association between contact and support for social change, put into perspective potential concerns associated with intergroup contact.

Overall, the more ethnic minorities and LGBTIQ+ individuals experience positive and intimate intergroup contact (e.g., friendships), or lack negative intergroup contact experiences, the less inclined they are to support efforts for social change. These findings are consistent with research showing that contact between members of different groups—which is experienced as positive in valence yet does not address structural inequalities—can decrease anger[25], distract attention away from group-based inequality[6,7], and decrease identification with the disadvantaged ingroup[8,25]. All these factors can reduce support for social change among members of disadvantaged groups[7,8,14,26,27].

However, among both advantaged and disadvantaged groups, contact was positively associated with one particular form of support for social change: working in solidarity toward social change. The more contact that occurs between advantaged and disadvantaged group members, and the more positively this contact is experienced, the more willing members of both groups are to collaborate in efforts to achieve greater social equality. This finding is unique, and the 'working in solidarity' measure captures a pathway to social change that is increasingly observed (e.g., LGBTIQ+/straight alliances)[28] but has been largely overlooked in prior research on the relation between contact and social change. Moreover, the 'working in solidarity' measure taps both support for social change and positive orientations toward collaborating with outgroup members to enact such change. Given other findings we report in this paper, it is possible that these two elements may be seen or valued differently by members of advantaged and disadvantaged groups. Among advantaged groups, willingness to work in solidarity might reflect a recognition that social change is the responsibility of many in the larger society as a whole, rather than a burden to be carried solely by members of disadvantaged groups[29,30]. At the same time, it is not entirely clear the extent to which

members of disadvantaged groups who endorse this measure actually desire social change on top of achieving the positive intergroup relations implied by the solidarity concept. Such questions offer intriguing directions for future research.

Nonetheless, the present results suggest some inherent difficulties in leveraging solidarity for social change among advantaged and disadvantaged groups. The positive association between contact and working in solidarity coexists with the negative association between contact and engagement in high cost collective action and raising ingroup awareness among members of disadvantaged groups. If, through contact with the advantaged, disadvantaged group members become less inclined to raise awareness about inequalities or engage in public protest and/or other more direct efforts to produce social change, solidarity of advantaged group members would lack meaningful routes for deployment.

Thus, our results pose two major questions for future research. How can positive and intimate contact between groups occur without reducing disadvantaged group members' support for social change? And how can support for social change be bolstered among disadvantaged group members without requiring negative contact experiences? Possible answers to both questions involve having advantaged group members openly acknowledge structural inequalities and express support for efforts to reduce these inequalities during contact with disadvantaged groups[31,32]. For efforts to promote and support social change to succeed, it seems essential that contact between advantaged and disadvantaged groups is not simply experienced as pleasant, but that it prepares members of both groups to address structural inequalities.

Although this research advances our understanding of the relation between intergroup contact and social change, a limitation is that our design cannot support causal conclusions. Future research would benefit from longitudinal designs to this end[10]. Also, in the interest of a succinct presentation, we set aside potentially interesting variance across contexts (e.g., due

to institutional policies[33]). Nevertheless, a clear strength of the present research is the robust evidence it provides that members of advantaged groups with more frequent, positive, and intimate forms of intergroup contact reported greater support for social change, while such forms of contact were associated with less support for social change among members of disadvantaged groups. There is, however, an important exception: Among both advantaged and disadvantaged groups, contact predicted greater willingness to work in solidarity to achieve greater social equality. This finding offers a new, understudied route to reach social cohesion and social change, such that social harmony would not come at the expense of social justice.

Methods

We planned to collect 64 samples with at least 100 participants each (see preregistration). Due to widespread dissemination of the link to the survey, individuals from additional countries participated in the survey (see also Supplementary Table 13). Therefore, this project sampled a total of 12,997 participants from four populations (ethnic majorities, cis-heterosexuals, ethnic minorities, and LGBTIQ+ individuals). We administered surveys in 69 countries (including several non-Western, educated, industrialized, rich, or democratic countries)[34]. Our total sample includes 3,216 ethnic majority group members (1,040 male, 2,162 female, 14 other, $M_{age} = 28.08$, $SD_{age} = 11.28$), 4,898 cis-heterosexuals (1,575 male, 3,323 female, $M_{age} = 29.47$, $SD_{age} = 12.84$), 1,000 ethnic minority group members (412 male, 585 female, 1 other, 2 NA, $M_{age} = 29.15$, $SD_{age} = 11.13$), and 3,883 LGBTIQ+ individuals (1,445 male, 2,061 female, 377 other, $M_{age} = 30.42$, $SD_{age} = 12.53$) (see Supplementary Figure 1 for inclusion criteria; Supplementary Tables 1-3 for more details).

Ethical Review

According to the checklist of the Ethics Committee of the Faculty of Arts and Social Sciences at the University of Zurich, this research fulfils the guidelines of the American Psychological Association and the Swiss Psychological Society, meaning that no formal approval was necessary. Additionally, several researchers or research teams have obtained approval from their local ethics committee if their institutions required them to do so (Eötvös Loránd University, Budapest, 236/2016; University of Massachusetts Amherst, 2015-2460; University of Leuven, G-2016 02 488; Pontificia Universidad Católica de Chile, 160323010; University of Kent, 20163785; Tel Aviv University; Simon Fraser University, 2016s0473).

Analytic Procedure

First, we regressed the original items on the subsample identifier variable to obtain residualized item scores. This was done to ensure that we would test the association of

contact and support for social change at the level of individuals rather than at the level of

subsamples or countries. Next, we conducted confirmatory factor analyses (CFA) to select

the final set of items and scales (all steps of the CFAs can be reproduced with the file

Scale_Construction_CFA.R). CFA justified using the same eight contact scales and five

support for social change scales for all four populations except for contact reported by

LGBTIQ+ individuals where we used only six contact scales (Table 1, see Supplementary

Table 4 for a detailed overview and Supplementary Tables 5 and 6 for descriptive statistics).

Finally, to estimate the bivariate correlations between intergroup contact and support for

social change conditional on methodological choices, we conducted specification curve

analyses following Simonsohn and colleagues' procedure (2015). Supplementary Figure 2

gives an overview of the procedure. Please note that we also ran additional specification

curve analysis controlling for age, gender, and socioeconomic status; the conclusions remain

unchanged when these controls are included (see Supplementary Table 12 and

Supplementary Figures 4 and 5). Please note also that our conclusions do not depend on

using Pearson correlations. Alternative analyses using Spearman correlations, which do not

rely on the assumption of normality, produced highly similar results.

   All steps of the specification curve analysis can be reproduced with the

Master_Script.R and the underlying Functions.R script.

Data Availability

Data underlying the analyses reported in the paper have been deposited on the Open Science

Framework under the following link https://osf.io/wgdhb/.

Code Availability

R code and scripts to reproduce the analyses presented in the manuscript. This code can be found on the Open Science Framework at: https://osf.io/8rcz9/

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Competing interests

The authors declare no competing interests.

Figure Legends

Figure 1. Results of the specification-curve analysis among advantaged groups.

(A) Results of the specification-curve analysis showing the correlation between intergroup contact and support for social change among ethnic majorities (n = 3,216).

(B) Results of the specification-curve analysis showing the correlation between intergroup contact and support for social change among cis-heterosexuals (n= 4,898).

Note: The top part of Figures 1A and 1B shows sorted correlations and 90% (95%) confidence intervals in light (dark) red. The bottom part shows the combinations of measures and analytic decisions underlying each correlation. The numbers in parentheses on the left-hand side indicate the change in size of the correlations (relative to the grand mean of correlations) resulting from using this particular measure or analytic decision.

Figure 2. Results of the specification-curve analysis among disadvantaged groups.

(A) Results of the specification-curve analysis showing the correlation between intergroup contact and support for social change among ethnic minorities (n= 1,000).

(B) Results of the specification-curve analysis showing the correlation between intergroup contact and support for social change among LGBTIQ+ individuals (n= 3,883).

Note: The top part of Figures 1A and 1B shows sorted correlations and 90% (95%) confidence intervals in light (dark) red. The bottom part shows the combinations of measures and analytic decisions underlying each correlation. The numbers in parentheses on the left-hand side indicate the change in size of the correlations (relative to the grand mean of correlations) resulting from using this particular measure or analytic decision.

Tables

Table 1
Overview of Constructs, Measures, and Example Items

Construct:	**INTERGROUP CONTACT**	
Measures:		***Example Items:***
1) Quantity of contact†		How many [outgroup] people do you know, at least as acquaintances?
2) Positive contact		When you interact with [outgroup], to what extent do you experience the following: The contact is friendly?
3) Absence of negative contact		When you interact with [outgroup], to what extent do you experience the following: The contact is unfriendly? (recoded)
4) Number of outgroup friends		How many of your friends are [outgroup]?
5) Frequency of meeting outgroup friends		How often do you meet your [outgroup] friends?
6) Quantity of indirect outgroup friends†		As far as you are aware, how many of your [ingroup[3]] friends or close relatives have [outgroup] friends?
7) Positive indirect contact		As far as you are aware, how many of your [ingroup] friends or close relatives have had good experiences with [outgroup] members?
8) Absence of negative indirect contact		As far as you are aware, how many of your [ingroup] friends or close relatives have had bad experiences with [outgroup] members, like tensions or conflict? (recoded)

Construct:	**SUPPORT FOR SOCIAL CHANGE**	
Measures:		***Example Items:***
1) Low cost collective action		Signing an online/regular petition to support action against the unequal treatment of [disadvantaged group].
2) High cost collective action		Attending demonstrations, protests or rallies against the unequal treatment of [disadvantaged group].
3) Support for empowering policies		[Disadvantaged group] should obtain much more power in the decision-centers of our society.
4) Raising ingroup awareness		When I come into contact with ingroup members, we talk about injustices in society regarding [disadvantaged group].
5) Working in solidarity		How willing are you to unite with [outgroup] to work for justice for [disadvantaged group]?

Note: Appropriate names for *ingroup*, *outgroup*, and *disadvantaged* group were inserted in each context. †Quantity of contact and quantity of indirect outgroup friends were not included among LGBTIQ+ individuals because almost every LGBTIQ+ individual has more cis-heterosexual friends than 10 (i.e., the highest scale value) or LGBTIQ+ friends who have more than 10 cis-heterosexual friends.

Table 2

Tests of Preregistered Hypotheses

Population	Sample size	Number of tests	Number of significant results in predicted direction[1]	p-value[2]
Ethnic Majorities	3,216	160	158 (154)	<.001
Cis-Heterosexuals	4,898	160	149 (145)	<.001
Ethnic Minorities	1,000	160	64 (52)	<.001
LGBTIQ+ Individuals	3,883	120	86 (84)	<.001

Note:[1] The number in parentheses indicates the number of significant results after adjusting the p-values using the Benjamini-Yekutieli procedure so that the false discovery rate is at most 5%; [2] p-values correspond to the number of shuffled datasets with as many or more significant correlations than in the original data set divided by the total number of shuffled datasets (i.e., 1,000). The smallest possible p-value with 1,000 reshuffled samples is $p < 1/1,000$.

Supplementary Information

Supplementary Materials:

Supplementary Materials and Methods, Supplementary Figures 1-5, Supplementary Tables 1-13, Supplementary References.