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The Role of Optimal Conditions and Intergroup Contact in Promoting Positive Intergroup Relations in and out of the Workplace: A Study with Ethnic Majority and Minority workers

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The Role of Optimal Conditions and Intergroup Contact in Promoting Positive Intergroup Relations in and out of the Workplace, and in Fostering the Support of Social Policies Benefitting the Minority Group: A Study with Ethnic Majority and Minority Workers

Abstract

A field study was conducted with majority and minority group members to test whether the effects of optimal contact conditions and of intergroup contact generalize across situations, and extend to the support of intergroup equality in terms of agreement with social policies benefitting the minority group. Participants were 163 Italian and 129 immigrant workers in three corporate organizations. Results from structural equation modelling analyses revealed that, for the majority group, positive contact stemming from optimal contact conditions was indirectly associated, via reduction in negative stereotypes, with more positive behavior that generalized across situations. For both majority and minority groups, positive contact stemming from optimal contact conditions was associated with less negative stereotypes, and in turn with greater support for social policies favoring the minority. Theoretical and practical implications are discussed, also in relation of the significance of the present results for research investigating the relation between intergroup contact and social change.

Keywords: optimal contact conditions, intergroup contact, stereotypes, generalization, social policy support, collective action and social change

There is large evidence that positive intergroup contact can reduce prejudice (Allport, 1954; Hodson & Hewstone, 2013; Pettigrew & Tropp, 2011; Vezzali & Stathi, 2017, 2021), especially when optimal contact conditions are present within the contact situation (Brown & Hewstone, 2005; Pettigrew & Tropp, 2006). Yet there remain numerous issues that need to be studied further. This paper addresses four of them.

First, intergroup contact is especially prevalent in industrial and organizational settings, yet only about a tenth of the published papers have been conducted in this important context (Pettigrew & Tropp, 2006). With the globalization of the employment market and increased diversity in societies, the workplace is an environment where interactions between majority and minority group members of different ethnic, religious, and cultural backgrounds are increasingly frequent. This paper studies contact between native-Italian and immigrant-Italian workers in three corporate organizations.

Second, most of the relevant literature focuses upon the contact effects for the majority; some of it focuses on the effects upon the minority. But fewer studies focus on both groups involved in the same contact as the present research does (Pettigrew & Tropp, 2006).

Third, the four optimal scope conditions advanced by intergroup contact theory are routinely cited, but they have been surprisingly seldom tested directly, and in this case they were often considered as replacement rather than antecedents/facilitators of intergroup contact. This paper offers a direct test of all four – intergroup cooperation, equal status in the situation, common goals, and authority sanction.

Fourth, a central concern of intergroup contact theory is the generalization of attitudinal and behavioral changes that occur in the contact situation. Specifically, as stated by Pettigrew (1998), the effect of contact can extend (a) to positive relationships with outgroup members

outside the specific contact situation (generalization across situations), and (b) to outgroup members who have not been directly involved in the contact situation (generalization to the larger outgroup category). Few studies have simultaneously tested these two types of generalizations. With respect to the second type of generalization (to the larger outgroup), researchers mainly focused on outgroup attitudes, while a smaller set of studies investigated whether generalization also occurs when considering support for policies favoring the minority group or collective action on its behalf.

The present research aimed to address the issues raised above by considering a sample of ethnic majority (Italian) and minority (immigrant) workers of multicultural corporate organizations in Italy. Importantly, rather than focusing on general attitudes, we assessed relevant (self-reported) behaviors, that is altruism at work and contact behavior outside the work environment. We also investigated support for social policies favoring the minority group among both groups, which intersects with the growing (and mixed) literature on the effects of contact on collective action and social change. Given the growing interest of scholars for the relation between contact and support for intergroup equality, we provide a rare test from a naturalistic setting by considering both majority and minority members which can help shed some light on whether contact can favor societal change.

Intergroup Contact

Allport (1954; see also Pettigrew, 1998; Pettigrew & Tropp, 2011) argued that contact will reduce prejudice when optimal conditions are present, that is if group members (1) perceive themselves as having equal status in the intergroup situation, (2) actively work toward achieving common goals on a (3) cooperative basis, and (4) are supported by authorities, for example formal or informal social norms that promote equality. Ample research has clearly demonstrated

the effectiveness of intergroup contact in reducing prejudice and promoting positive intergroup relations (Davies, Tropp, Aron, Pettigrew, & Wright, 2011; Pettigrew & Tropp, 2006). There is now impressive evidence, culminated in the meta-analysis by Pettigrew and Tropp (2006), showing that intergroup contact reduces prejudice across different target groups, age groups, contact settings, geographical areas.

Although much less frequent, there is considerable evidence that contact can also reduce prejudice in organizational contexts, both when contact is between ingroup and outgroup workers (e.g., Koschate, Oethinger, Kuchenbrandt, & van Dick, 2012; Vezzali & Capozza, 2011; Voci & Hewstone, 2003, Study 2), and when it is between ingroup workers and outgroup members who are not work colleagues, such as customers (Liebkind, Haaramo, & Jasinskaja-Lahti, 2000; Pagotto, Voci, & Maculan, 2010). Moreover, positive contact effects in the workplace are not limited to explicit attitudes, but extend to more subtle attitudes, such as those captured at an implicit level (Vezzali & Capozza, 2011; Vezzali & Giovannini, 2011). These can also have substantial effects in working environments (Deitch, Barsky, Butz, Chan, & Bradley, 2003). Consistent with the studies reported above, the meta-analysis by Pettigrew and Tropp (2006) shows that contact reduces prejudice in organizational contexts. Our study will integrate this literature, examining antecedents (optimal contact conditions), underlying processes, differential consequences (in terms of generalization), and by considering both majority and minority groups.

The role of Allport's optimal contact conditions

The meta-analysis by Pettigrew and Tropp (2006) sheds light on the role of Allport's (1954) optimal contact conditions, namely equal status, cooperation, common goals, and institutional support (for reviews, see Koschate & Van Dick, 2011; Pettigrew, 1998; Pettigrew &

Tropp, 2011). In contrast with Allport's theorization, Pettigrew and Tropp (2006) demonstrated that these optimal conditions qualify as facilitating rather than essential factors for prejudice reduction. Specifically, the authors identified 134 samples where the contact situation was structured taking into account optimal conditions, and found that the mean effect of contact on reduced prejudice was stronger when the contact situation embraced optimal conditions (mean r = -.287) compared with the remaining 562 samples, in which optimal conditions were not considered (mean r = -.204). Pettigrew and Tropp (2006) also tested the optimal contact conditions separately, by using available information to code the 134 samples identified (see above) for the presence or not of each of the four conditions. Results did not highlight a prevalence of one condition over the others, and also revealed high correlations between ratings of the various optimal conditions.

Two studies concerned with the effects of optimal conditions on prejudice reduction are especially relevant for the present article. Molina and Wittig (2006; see also Marcus-Newhall & Heindl, 1998; Wittig & Grant-Thompson, 1998) examined four student samples composed of White, Asian, Hispanic, African-American and multi-racial 7th and 9th graders attending public schools. They adapted the school interracial climate scale (Green, Adams, & Turner, 1988) to assess the four optimal conditions (merging however cooperation and common goals into an 'interdependence' condition, and introducing acquaintance potential; Amir, 1969) as an indicator of school interracial climate. With few exceptions, in all samples optimal conditions were moderately to strongly correlated with each other. Results revealed that all conditions had independent effects on outcome variables (affective prejudice, outgroup orientation, common ingroup identity), with stronger evidence for the role of interdependence and acquaintance potential. Koschate and Van Dyck (2011) tested the predictive role of optimal conditions, by

considering the relationship between work groups in organizational contexts. Institutional support was assessed by asking managers to indicate their level of support for contact between work groups, whereas the other three conditions were assessed among workers themselves. Cooperation was tested as a mediator of the other conditions. Correlations between optimal conditions were in this case mostly nonsignificant. Results revealed that whereas institutional support did not affect prejudice, cooperation mediated the effects of common goals and equal status (marginal effect) on bias reduction.

Three considerations are especially relevant for our purposes. First, in line with Allport's (1954) assumptions, although optimal contact conditions have generally been considered as moderators of contact effects (e.g., Kende, Tropp, & Lantos, 2017), some studies that tested them directly considered them as predictors rather than as moderators. However, these studies did not include a contact measure and merely considered the conditions as direct antecedents of prejudice and/or as a replacement for contact (Koschate & Van Dyck, 2011; Lipponen & Leskinen, 2006; Molina & Wittig, 2006). For instance, Molina and Wittig (2006) used the four optimal conditions as the measure of school interracial climate, therefore as a measure incorporating both contact and optimal conditions, without distinguishing the two concepts. Second, the optimal conditions have often been assessed by means of external coders or actors other than participants themselves (see the meta-analysis by Pettigrew & Tropp, 2006), or with a combination of participants' and external actors' ratings (Koschate & Van Dyck, 2011). We instead aim to provide a direct test of them. Third, studies often did not incorporate all four contact conditions, or considered them as distinct factors rather than focusing on whether they function together.

We aim to test contact as a separate construct from optimal contact conditions, and examine whether optimal contact conditions act as an antecedent of more positive workplace contact. Importantly, we consider participants' perceptions, rather than externally-provided assessment. This is critical and is in line with Pettigrew and Tropp's (2011) suggestion that "what may be crucial for improved intergroup relations is the extent to which people *perceive* those conditions to be valued and internalized by the outgroup members with whom they interact" (p. 72). Moreover, since we are interested in whether these conditions work *together*, we consider the four of them simultaneously. As stated by Pettigrew and Tropp (2011), "consistent with Allport's original contentions, we believe that optimal conditions for contact are still best conceptualized as functioning together to facilitate positive intergroup outcomes, rather than being regarded as entirely separate factors" (p. 70).

Generalization of contact effects across situations and to the larger outgroup category to support the minority's rights

Only few studies have tested the generalization of specific contact encounters across situations (e.g., Cook, 1984; Minard, 1952). In the meta-analysis by Pettigrew and Tropp (2006), whereas attitudes toward the general outgroup were assessed in 1,164 tests, only 152 tests assessed prejudice toward known outgroup members. Among these, only 17 tests examined generalization across situations; since the mean effect size is comparable to the mean effect size obtained when considering attitudes toward the general outgroup, the authors concluded that contact effects generalize across situations.

Most studies have focused instead on the generalization to the larger outgroup category, generally by assessing attitudes toward the outgroup as a whole. Only few studies have simultaneously examined attitudes toward known outgroup members. For example, with respect

to studies conducted in organizational contexts, Voci and Hewstone (2003, Study 2) found that contact between Italian and immigrant workers in a hospital reduced Italian participants' prejudice toward immigrant co-workers, which generalized to more positive attitudes toward immigrants as a whole. Similar results were found by Vezzali and Capozza (2011), who tested the relationship between non-disabled and disabled workers of firms and corporate organizations from the perspective of non-disabled workers. Amir, Bizman, Benari, and Rivner (1980, Study 2) assessed Israeli Jews' attitudes toward Israeli Arabs, and found that superficial workplace contact was associated with an improvement of some aspects of work-related contact, but did not extend to an improvement in general attitudes. Consistent with the evidence reported above, in Pettigrew and Tropp's (2006) meta-analysis, the mean effect for attitudes toward the larger outgroup is of similar magnitude to that obtained for tests examining attitudes toward known outgroup members, therefore providing evidence for the generalization of contact effects to the larger outgroup category (see also Brown & Hewstone, 2005; Hodson & Hewstone, 2013).

Taken together, only few studies considered generalization considering both known and unknown outgroup members, therefore 'generalization' is usually only inferred. Moreover, there is a lack of studies simultaneously examining generalization across situations and to the larger outgroup category. In addition, most of the studies only took into account the perspective of the majority group. In the present study, we assessed self-reported behavior toward outgroup colleagues both within and outside the contact situation. To test generalization to the larger outgroup category, we used a measure of support for social policies benefitting the minority group. This choice allowed us to reduce shared method variance (which is a concern if similar measures are used to assess attitudes toward the different targets, Podsakoff, MacKenzie, & Podsakoff, 2012), and to examine a key variable that encompasses not only attitudes but also

egalitarian socio-political tendencies. It should be noted that, when considering the perspective of the minority group, the measure of support for pro-minority social policies does not assess generalization since it is concerned with the ingroup rather than with the outgroup. Instead, the measure represents a test of support for actions/policies favoring the minority ingroup. To the extent that positive contact can in some cases increase expectations of fairness from the majority group and ultimately inhibit collective action tendencies and support for own rights among minority members (for reviews, see McKeown & Dixon, 2017; Saguy et al., 2017; but see Kauff, Green, Schmid, Hewstone, & Christ, 2016), an examination of the phenomenon in a novel context is particularly relevant. Therefore, our study intersects with growing work on contact and social change, that we present in the next paragraph.

Intergroup Contact and Social Change

There is a growing literature investigating whether contact, in addition to reducing prejudice, can also foster the promotion of greater intergroup equality (McKeown & Dixon, 2017; Saguy, Shchory-Eyal, Hasan-Aslih, Sobol, & Dovidio, 2017; Tropp & Barlow, 2018; Vezzali & Stathi, 2021, Chapter 7). Wright and Lubensky (2009) argued that contact and collective action/social change on the behalf of the minority group are largely incompatible: while (positive) contact is meant to produce intergroup harmony, collective action (at least, from minority group members) is instigated by conflict. In particular, contact may have a demobilizing effect for the minorities. Consistently, various studies found that among minority members contact was negatively associated with collective action, or effects were of smaller sizes compared with effects on outgroup attitudes (Dixon, Durrheim, & Tredoux, 2007; Dixon et al., 2010; Hayward, Tropp, Hornsey, & Barlow, 2018). There is also evidence that among majority group members contact can have null or weak effects on collective action or support for policies

benefitting the minority group (Çakal, Hewstone, Schwär, & Heath, 2011; Dixon, Durrheim, & Tredoux, 2005).

However, other studies revealed that positive contact can also promote collective action on the behalf of the minority group, both among majority (Reimer et al., 2017; Selvanathan, Techakesari, Tropp, & Barlow, 2018) and minority group members (Bagci, Stathi, & Piyale, 2019; Di Bernardo et al., 2019; Hayward et al., 2018). Therefore, contact is not necessarily incompatible with the promotion of intergroup equality (see MacInnis & Hodson, 2019; Vezzali & Stathi, 2021, Chapter 7). Previous studies on collective action/social change did not examine work settings (for an exception, see Vezzali & Giovannini, 2011, who however only focused on the majority group). This study provides a novel examination of the association between workplace contact and a variable related to the support of intergroup equality. In addition, departing from the existing literature, it does so by considering simultaneously the perspective of both majority and minority group members.

Outgroup Stereotypes as Mediators

Literature has identified a wide range of mediators of contact effects, focusing mostly on affective variables, like intergroup anxiety and empathy (Brown & Hewstone, 2005). However, there also is ample evidence that cognitive factors play a relevant role in explaining the effects of contact (Gaertner & Dovidio, 2000; Pettigrew & Tropp, 2008). In the present study, we decided to focus on negative outgroup stereotypes: the working setting provides a context of prolonged and continuous interactions that may be ideal to acquire information on outgroup members which can disconfirm negative beliefs about them. To the extent that negative stereotypes imply negative expectations about outgroup members, they represent a potential threat to intergroup

interactions (being associated with fear and feelings of threat, Verkuyten, 1997), while their reduction may favor the development of positive intergroup relations (Stephan & Stephan, 2000).

Previous research has shown that outgroup stereotypes are reliable mediators of contact effects (Gaunt, 2011; Gonzalez, Verkuyten, Weesie, & Poppe, 2008; Kamberi, Martinovic, & Verkuyten, 2017; Ridge & Montoya, 2013; Stephan, Diaz-Loving, & Duran, 2000; Vedder et al., 2016). Notably, mediation effects have also been found in working contexts (Gordijn, Vacher, & Kuppens, 2017; Vezzali & Giovannini, 2011). For instance, Vezzali and Giovannini (2011) investigated the relation between Italian businessmen owning small and medium enterprises with their immigrant employees. Results revealed that cooperative contact at work was associated with increased support for social policies benefitting immigrants as a whole, via reduction in negative stereotypes about immigrants. It is worth noting that the authors did not examine individual contact, which was likely to be very frequent since participants worked in close contact with outgroup members. In contrast, they examined perceptions of the extent to which contact at work between Italians and immigrants was positive. Our study aims to build on these findings in two ways. First, we will test how perceptions of positive contact at work are associated with intergroup outcomes, mediated by outgroup stereotypes, both among majority and minority group members. In so doing, we will also test optimal contact conditions as an antecedent of perceptions of positive contact. Second, we will test a broader range of outcome variables, including intergroup behavior at work and outside work.

The Present Study

The present field study aimed at testing the facilitation and generalization effects of contact in the workplace in a single model. We were also interested in whether contact might facilitate social change, by supporting social policies favoring the minority group. We took into

account both majority (Italians) and minority (immigrants) group members, workers in three corporate organizations in Italy. In addition to considering optimal contact conditions as an antecedent of contact, we examined negative stereotypes as potential mediator.

Within the organizations under investigation the number of ethnic majority and minority workers was high, suggesting that contact frequency, often involuntarily in this environment, was high (in other words, we examined a no-choice contact setting; cf. Pettigrew & Tropp, 2006). Therefore, we focused on contact climate, which reflects quality of contact in the organization. Specifically, we assessed perceptions of positive contact within the organization, rather than the individual level of contact. Although this measure partly departs from the wider contact literature, it is in line with our aims of testing whether perceptions of the presence of optimal contact conditions is reflected in perceptions that contact and more generally intergroup relations within the organization are positive. It also allows to test whether general perceptions of positive contact in the working context relate to negative stereotypes and outcome variables associated with a range of outcome variables assessing the relation with the outgroup at various levels. This is also in line with measures used in past work testing mediation by stereotypes in the work context (Vezzali & Giovannini, 2011). Further, also considering that the context examined are no-choice contact setting where contact is unavoidable, the choice to focus on contact quality is consistent with the literature that shows that contact quality is more relevant for prejudice reduction than contact quantity (Pettigrew, 1998).

In order to effectively test *generalization across situations*, we assessed (self-reported) behavior both within and outside the contact situation. In particular, we focused on altruism at work by relying on a measure of citizenship behavior used in research conducted in organizational contexts. For behavior outside the contact setting, we asked participants to report

the extent to which they spent time with their outgroup colleagues outside the workplace. We also included support for social policies favoring the minority group. In addition to allow us to assess among majority members *generalization to the outgroup as a whole*, this measure provides us with the opportunity to investigate support for social policies benefitting the ingroup among both majority and minority groups, tapping into research on social (Saguy et al., 2017).

As anticipated, we test negative outgroup stereotypes as potential mediators. We believe that such test is especially relevant in the present context: improvement of stereotypes following contact can reduce negative expectations about outgroup behavior, favoring the development of positive and cooperative relations at work (where contact is unavoidable), and likelihood of encounters with outgroup members outside the work environment. To assess stereotypes, we decided to use the same measure to evaluate the stereotypes of both Italians and immigrants used in previous studies in the same context (Vezzali & Giovannini, 2011; Vezzali, Giovannini, & Capozza, 2010). The choice to not use a more specific measure lies in the absence of studies defining the traits characterizing Italians and immigrants, as well as in the possibility to have a measure more comparable between groups and with previous literature.

We tested the following hypotheses:

- H1: optimal contact conditions and contact should be associated with more positive behavior at work, via reducing negative outgroup stereotypes.
- H2: The indirect effects of optimal contact conditions and contact via a reduction in negative outgroup stereotypes should generalize across situations (more positive behavior outside work).
- H3: Optimal contact conditions and contact should be indirectly associated with greater support for policies benefitting the ingroup among both groups. However,

we acknowledge that, for the minority, contact might have a demobilizing effect, being associated with lower support for social policies benefitting the ingroup.

For all predictions, based on literature showing that contact effects are stronger among majority than among minority members (Tropp & Pettigrew, 2005), we anticipate stronger effects among majority members.

Method

Participants and Procedure

Participants were 314 workers of three corporate organizations located in Northern Italy. We excluded 22 participants for excessive missing data (> 20%), leaving a final sample of 163 Italians (54 males, 109 females; M_{age} = 43.08 years, SD_{age} = 8.89) and 129 immigrants (38 males, 91 females; M_{age} = 40.22 years, SD_{age} = 7.53). The largest number of immigrants had Africa as country of origin (56.6%), followed by Eastern Europe (32.6%), Asia (7.8%) and South America (3.1%).

Participants were administered a questionnaire at work during breaks by a researcher, and were asked to select the questionnaire based on their respective outgroup. Workers did not provide their name or personal data, so it was impossible for companies to know whether a worker had or had not taken part in the study. The two questionnaires were identical, with the difference that Italians were asked about their relations with immigrants and vice versa. Participants were taken to a quiet room where they could complete the questionnaire and ask the researcher for clarifications. The completion of the questionnaire took up to 1 hour. At the end, participants were thanked and fully debriefed.

Measures[1]

Unless otherwise indicated, items were rated on 5-point Likert-scales ranging from 1 (*not at all*) to 5 (*very much*).

Optimal contact conditions. Adapting a measure by Vezzali and Capozza (2011), participants were presented with four items, each tapping on one of the optimal conditions proposed by Allport (1954; see also Pettigrew, 1998): "In your opinion, does this corporate organization favor relationships between Italians and immigrants?" (institutional support); "Is there cooperation between Italians and immigrants within this corporate organization?" (cooperation); "Do Italian and immigrants have common goals within this corporate organization?" (common goals); "Are Italians and immigrants considered as equal within this corporate organization?" (equal status). A single index of optimal contact conditions was created by calculating the mean of the items for both majority (Cronbach's $\alpha = .73$) and minority members ($\alpha = .74$), with higher scores reflecting higher presence of optimal contact conditions.

Contact. As an indicator of a positive intergroup contact climate at work, with which we operationalized our quality of contact measure, we used five items adapted from a measure of psychological climate by Koys and DeCotiis (1991): "Italian and immigrant workers of this corporate organization discuss about personal as well as private things"; "Italian and immigrant workers of this corporate organization help each other"; "In this corporate organization Italian and immigrant workers get along well"; "In this corporate organization there is team spirit between Italian and immigrant workers"; "I feel to have a lot in common with immigrants [Italians] who work in this corporate organization." A single index of contact was created by calculating the mean of the items for both majority ($\alpha = .79$) and minority participants ($\alpha = .67$), with higher scores reflecting more positive contact at work.

Negative stereotypes. Participants were asked to evaluate the outgroup on eight items (e.g., friendly, reverse-scored; lazy), used in previous research conducted in the Italian context (Vezzali & Giovannini, 2011; Vezzali et al., 2010). The 5-point Likert-scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*); 3 was the neutral point (*neither agree nor disagree*). Items were averaged in a composite score of negative outgroup stereotypes (α's = .62 and .64 for majority and minority members, respectively), with higher scores indicating more negative stereotypes.

Behavior at work. As a measure of self-reported altruistic behavior at work, we adapted three items from the organizational citizenship behavior scale by Pond, Nacoste, Mohr, and Rodriguez (1997): "I help immigrants [Italians] who have been absent"; "I help immigrants [Italians] who have lot of work"; "I help newly hired immigrants [Italians], even if nobody asks me to do that." A singled index was created for majority (α = .79) and minority participants (α = .65) by averaging the items, with higher scores indicating more positive behavior at work.

Behavior outside work. We asked participants to respond to the following three items: "Do you go out with your immigrant [Italians] colleagues in the evening or at weekends?"; "How often do you go out alone with your immigrant [Italians] colleagues outside working hours?"; "How often do you go out with your family with immigrant [Italians] colleagues and their families outside working hours?". The 5-point Likert-scale ranged from 1 (*never*) to 5 (*always*). Items were collapsed (α's = .83 and .87 for majority and minority workers, respectively) in a reliable index of positive contact behavior with outgroup colleagues beyond the working environment, with higher scores indicating more positive behavior.

Social policies support. To assess the extent to which participants supported pro-immigration social policies, we used 18 items adapted from Vezzali and Giovannini (2011)

tapping on support for national policies aimed at sustaining immigrants (e.g., "Both Italians and immigrants should make use of housing projects"). The 5-point Likert-scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*); 3 was the neutral point (*neither agree nor disagree*). Items were combined in a single index (α's = .80 and .62 for majority and minority members, respectively) by calculating the mean of the items, with higher scores indicating stronger support for the policies.

Results

Descriptive statistics and correlations among variables are presented in Tables 1 and 2, respectively. To test our hypotheses, we ran a structural equation model with latent variables using multiple group analysis (Jöreskog & Sörbom, 2007). This analytical strategy allows on the one hand to test our hypotheses and, on the other hand, to investigate potential differences between majority and minority.

Optimal contact conditions were the exogenous variable; contact served as first-level mediator; negative stereotypes were entered as second-level mediator; social policies support, altruism at work and behavior outside work were the dependent variables. We used latent factors by relying on parcels instead of employing the single items since the former hold higher reliability, greater communality, higher ratio of common-to-unique factor variance, lower likelihood of distributional violations, tighter and more equal intervals; further, parcels allow fewer parameter estimates, lower indicator-to-sample size ratio, lower likelihood of correlated residuals, and fewer sources of sampling error (Little, Rhemtulla, Gibson, & Schoemann, 2013). For both models, we created two parcels for each latent factor; for social policies support we employed three parcels. Parcels were created following the suggestions by Little, Cunningham, Shahar, and Widaman, (2002). Parcel loadings, for both models and for the overall model (see

Footnote 2), ranged from .54 to .92, *p*s < .001. A good fit to the data is suggested by a non-significant χ^2, a CFI and a TLI greater than .95, a SRMR equal or smaller than .08, and a RMSEA equal or smaller than .06 (Hu & Bentler, 1999). The significance of the indirect effects was tested using bootstrapping procedures with 5,000 resamples (Preacher & Hayes, 2008).

Preliminary results showed that the latent factor for behavior at work did not significantly load on the relative indicators for the minority sample, meaning that the latent dimension did not reliably express the observed construct. Therefore, behavior at work was treated as an observed variable (since its reliability is acceptable), fixing the relative error to zero (see Figure 1). In order to make the two samples comparable for the multiple group analysis, we treated behavior at work as an observed variable for the majority group as well. The model in which parameters were not constrained showed an acceptable adaptation to the data, $\chi^2(94) = 152.06$, $p < .001$; RMSEA = .06; CFI = .97; TLI = .96: SRMR = .08. Before proceeding with difference testing, we evaluated the invariance of the measurement model. Specifically, when constraining factor loadings, the two models emerged as equivalent, $\chi^2(100) = 160.10$, $\Delta\chi^2(6) = 8.04$, *ns*. Thus, in the next step, we constrained the single coefficients. The only differences emerged in the associations between negative stereotypes and behavior at work ($\chi^2(101) = 167.69$, $\Delta\chi^2(1) = 7.59$, $p < .01$), and between negative stereotypes and behavior outside work ($\chi^2(101) = 174.95$, $\Delta\chi^2(1) = 14.85$, $p < .001$); no other significant differences emerged, $\chi^2(101) \leq 162.05$, $\Delta\chi^2(1) = 1.95$, *ns*.

As can be seen in Figure 1, optimal contact conditions were positively associated with contact, that in turn was negatively related with negative stereotypes. Moreover, for the majority group, stereotypes were negatively associated with the three dependent variables; for the minority group, they were only negatively associated with social policies support. The

significance of the indirect effects is reported in Table 3. As can be seen, for the majority hypotheses were supported: optimal contact conditions and contact were indirectly associated, via reduced negative stereotypes, with more positive behavior at work (H1) and these effects generalized outside the contact situation (H2) and to the larger minority category, favoring the support of social policies benefitting the minority group (H3). For the minority group, optimal contact condition and contact were only indirectly associated (via reduction in negative stereotypes) with social policies support, therefore providing support only for H3.[2]

Discussion

We conducted a study in three corporate organizations with majority and minority groups, testing the role of optimal contact conditions and generalization of contact effects. In so doing, we also tested the association of optimal contact conditions and contact with the support of social policies favoring intergroup equality, tapping into growing research on contact and social change. In addition, we tested negative outgroup stereotypes as the mediator of contact.

First of all, results fully supported the role of optimal conditions. Among both majority and minority members, optimal conditions and positive contact were strongly associated (albeit being distinct, as revealed by additional CFA analyses we conducted). It is worth noting that we merged optimal contact conditions in a single factor, instead of considering them as separate constructs (e.g., Molina & Wittig, 2006), since we were interested in their global role as predictor of a positive contact setting. In light of the present results, we argue that the consideration of optimal contact conditions as essential or facilitating factors may depend on their conceptualization as moderators of antecedents of contact (also depending on the characteristics of the study). When testing them as moderators (and therefore as factors independent from contact), then they may be conceptualized as facilitators (i.e. contact can be effective also when

they are not present; Pettigrew & Tropp, 2006). This test may be especially appropriate when considering different settings and information on participants' perceptions is not available; in this case, considering their moderator role may help differentiating the two contexts and understand when contact is more effective. However, when participants' appraisal of optimal conditions is available, their predictive role on contact can be assessed, in order to understand the extent to which they allow the effects of positive (or negative) contact to occur. In this sense, they complement Pettigrew and Tropp's (2006) finding that they are not necessary: contact may exert its effect independently of optimal conditions, nonetheless optimal conditions are key to promote positive contact (and to the extent that predictor and moderator should ideally be independent, the high correlation between optimal conditions that has been found, and that we replicated, suggests that they influence each other, rather than justifying the use of optimal conditions as a moderator).

Second, workplace contact was associated with more positive altruistic behavior within the working environment. This result provides considerable support for intergroup contact theory since it was obtained in a naturalistic setting with a measure of a behavior (albeit self-reported) relevant to the contact situation (i.e., altruism). In addition, replicating past contact literature (Pettigrew & Tropp, 2008), we showed that reduction in negative outgroup stereotypes mediates contact effects. Although Vezzali and Giovannini (2011) found mediation by outgroup stereotypes in organizational environments from the perspective of employers belonging to the majority (Italian) group, in this study we extended the literature and demonstrated that stereotypes also mediate contact effects among co-workers. Notably, this effect was only found among majority members, in line with research showing that contact effects are weaker or null among minority group members (Tropp & Pettigrew, 2005)

With respect to generalization across situations, although the meta-analysis by Pettigrew and Tropp (2006) provided supportive evidence, results were based on available scarce evidence. By considering behavior toward outgroup members met in the workplace both within and outside the contact situation (and using distinct measures to avoid shared method variance issues), we were able to provide a direct test of generalization across situations. Results revealed that positive workplace contact stemming from optimal contact conditions generalized, via reduction in negative stereotypes, to greater time spent with outgroup colleagues beyond working hours. Notably, this effect only emerged among majority members. This was partly expected, in light of evidence suggesting that contact effects are often smaller or nonsignificant among minority members (Tropp & Pettigrew, 2005). It should be noted that ratings for behavior outside work, although generally low, were higher for minority than majority members, therefore leaving less room for variation among the former than among the latter.

In line with the literature, we found that workplace contact allowed generalization to the larger outgroup category among majority members. Importantly, instead of using more 'classic' attitude measures, we employed a measure of support for social policies benefitting the minority group. This result is in line with the growing literature showing that contact can foster social change, by leading majority members to support minority's rights. Although some studies found mixed support for the role of contact in fostering support for minority policies on the behalf of the majority group (Cakal, Hewstone, Schwär, & Heath, 2011; Dixon, Durrheim, & Tredoux, 2007; Dixon et al., 2010; Du Toit & Quayle, 2011; Jackman & Crane 1986), recent evidence consistently points toward the beneficial effects of contact in strengthening the support for minority rights at the level of social policies and movements (Kamberi et al., 2017; Kauff et al., 2016; Selvanathan, Techakesari, Tropp, & Barlow, 2017; Visintin, Green, Pereira, & Miteva,

2017). Our study adds to this literature showing the importance of optimal contact conditions in addition to contact, and by providing an evidence from a rarely investigated naturalistic setting. In addition, it shows that reduction in negative stereotypes may underline attitudes toward the support of the minority group.

Concerning the minority group, results revealed that optimal contact conditions and contact were associated, via reduction in negative stereotypes, with stronger support for ingroup rights. This finding, in line with recent evidence (Di Bernardo et al., 2019; Kauff et al., 2016), stands in contrast with studies showing that positive contact might inhibit ingroup support among minority members (Dixon et al., 2007, 2010; Hayward, Tropp, Hornsey, & Barlow, 2018; Reimer et al., 2017, Study 1; Sengupta & Sibley, 2013 for reviews see e.g. McKeown & Dixon, 2017; Saguy et al., 2017; Wright & Lubensky 2009). Therefore, among the minority group, positive contact can not only benefit intergroup relations, but also empower minority members in promoting their own rights. Future research should therefore focus not on whether positive contact can or cannot promote support for ingroup rights among minority members, but *when* (in addition to why) this will happen (cf. Di Bernardo et al., 2019).

It should be noted that, as we have anticipated, our contact measure slightly departs from contact measure generally used in contact studies, as it assessed general perceptions of contact and positive intergroup relations rather than contact at the individual level. However, we believe this represents a strength of our work and allows to extend previous literature. On one side, we believe this measure allows to assess whether perceptions of optimal contact conditions within the organization is reflected in perceptions that groups have positive contact within it. On the other side, the fact that predictable relationships emerged both among the majority and the minority group allows comparisons with the larger literature, and suggests that what matters is

not only contact at the individual level, but perceptions that such positive contact is spread within the contact setting, tangentially tapping into the role of social norms; future studies may provide a direct test of whether optimal contact conditions and contact shape social norms, and how they are in turn associated with outcome variables. Finally, the fact that similar contact measures have been used in other contact studies conducted in working contexts and using negative stereotypes as mediators (Vezzali & Giovannini, 2011) allows comparability with these studies.

The present study shows evidence for mediation by negative outgroup stereotypes (mostly among majority group members). In line with previous research, this finding demonstrates the relevance of stereotype disconfirmation in working contexts (Gordjin et al., 2017; Vezzali & Giovannini, 2011). It also extends previous findings, revealing mediating effects on self-reported behavioral measures. However, it should be noted that minority group members did not benefit from stereotype change. A first explanation refers to the general smaller effect of contact among the minority group (Tropp & Pettigrew, 2005). Also, research has shown that contact effects are often mediated by affective variables, like intergroup anxiety and empathy (Brown & Hewstone, 2005; Pettigrew & Tropp, 2008). Future research may examine these and other related variables in working environments, which may help examine whether they underline prejudice reduction among minority group members.

It is worth noting that our outcome measures have several strengths. They extend beyond general attitudes to (self-reported) behavior relevant to the workplace. They also draw upon measures from the literature on collective action (i.e., support for pro-minority social policies), which complement more “classic” attitudinal measures and provide considerable knowledge toward understanding how to promote social change. It is consequently important to understand whether the effects of contact translate into actual support for minorities.

It should be noted that the consequences of a positive working climate are not limited to improved intergroup relations, but also have relevant organizational outcomes such as employee engagement (Downey, van der Werff, Thomas, & Plaut, 2015; Plaut, Thomas, & Goren, 2009). There is evidence that positive contact and diversity at work can have beneficial effects on well-being (Gordijn et al., 2017) and also on outcomes relevant for organizations such as motivation to learn from colleagues (Hahn, Nunes, Park, & Judd, 2014) and work performance (Godart, Maddux, Shiplov, & Galinsky, 2015; van Knippenberg, De Dreu, & Homan, 2004).

An area of development concerns how indirect forms of contact can also be used in the workplace in order to promote positive intergroup relations, as well as positive workplace outcomes. For example, there is evidence that indirect contact can affect outgroup attitudes in the workplace (De Carvalho-Freitas & Stathi, 2017). De Carvalho-Freitas & Stathi (2017) showed that mentally simulating contact with disabled people in the workplace not only improved work-related perceptions of disabled people but also promoted support of disabled people's employment rights. Therefore, when designing training sessions to address increased diversity in organizational contexts, it is important to maximize on various relevant forms of contact.

We also acknowledge some limitations that relate to this research. First, data are correlational. We also acknowledge that the sample sizes are relatively small. Additionally, although we measured intergroup contact with work colleagues, contact may also occur with outgroup members uninvolved in the work environment. We did not account for this in this study so future research should carefully consider the various settings where intergroup contact may take place (e.g., neighborhood, further education, etc.) and examine their respective influence on outgroup attitudes. Finally, considering the immigrant sample, our measure of behavior at work turned out being not optimal, since it created issue in the minority model.

In conclusion, this study demonstrated that optimal conditions for contact act as a precursor for positive contact at work for both ethnic minority and majority workers; this in turn relates to positive intergroup behaviors within and outside the contact situation and for the outgroup as a whole (at least in case of the majority group). In a globalized world, cultural mobility and diversity are often reflected on the demographics of the workplace so it is of paramount importance to understand how intergroup relations manifest in such settings where contact is often unavoidable. We suggest that promoting positive intergroup contact strategies in the workplace can have beneficial consequences at personal, intergroup, and organizational levels, and we encourage theorists and practitioners to examine their potential.

Footnotes

1. The original questionnaire included more measures (mostly concerning organizational aspects), some of which (distinct from the measures used in the present article) have been used in Vezzali and Giovannini (2014) to test different hypotheses.

2. A further model has been tested considering the full sample ($N = 292$), and employing parcels for behavior at work. Data acceptably fitted the model, $\chi^2(57) = 111.17$, $p < .001$; RMSEA = .06; CFI = .98; TLI = .98: SRMR = .06, with all standardized coefficients significant, βs ≥ | .37|, *p*s < .001, as well as the indirect effects: optimal contact conditions → social policies support, mean bootstrap estimate = 0.4655, 95% CI [0.3314, 0.6697]; optimal contact conditions → behavior at work, mean bootstrap estimate = 0.4568, 95% CI [0.3016, 0.6933]; optimal contact conditions → behavior outside work, mean bootstrap estimate = 0.3644, 95% CI [0.2190, 0.5831]. Similar results have been obtained when considering behavior at work as an observed variable.

Data availability statement

Data available upon reasonable request to the first author.

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Table 1

Descriptive statistics of the constructs

Measures	Majority (N = 163)	Minority (N = 129)	t(290)	Cohen's d
Optimal contact conditions	2.96 (0.79)	3.46 (0.89)	5.05***	0.59
Contact	2.75 (0.75)	3.30 (0.77)	6.18***	0.72
Negative stereotypes	2.95 (0.58)	2.39 (0.62)	7.97***	0.94
Social policies support	3.05 (0.68)	3.98 (0.79)	13.66***	1.60
Behavior at work	3.14 (0.89)	3.93 (0.79)	7.90***	0.93
Behavior outside work	1.30 (0.56)	2.06 (1.14)	6.88***	0.81

***$p < .001$.

Table 2

Zero-order correlations between the constructs

	1	*2*	*3*	*4*	*5*	*6*
1. Optimal contact conditions	-	.65***	-.37***	-.15†	.27**	.16†
2. Contact	.62***	-	-.32***	.01	.19*	.18*
3. Negative stereotypes	-.43***	-.54***	-	-.24**	-.13	-.11
4. Social policies support	.32***	.45***	-.47***	-	.03	-.14
5. Behavior at work	.38***	.55***	-.35***	.35***	-	.14
6. Behavior outside work	.18*	.31***	-.21**	.21**	.18*	-

Note. Correlations for majority members ($N = 163$) are below the diagonal; correlations for minority members ($N = 129$) are above the diagonal.

***$p < .001$. **$p < .01$. *$p < .05$. †$p < .10$.

Table 3

Indirect effects in the hypothesized model

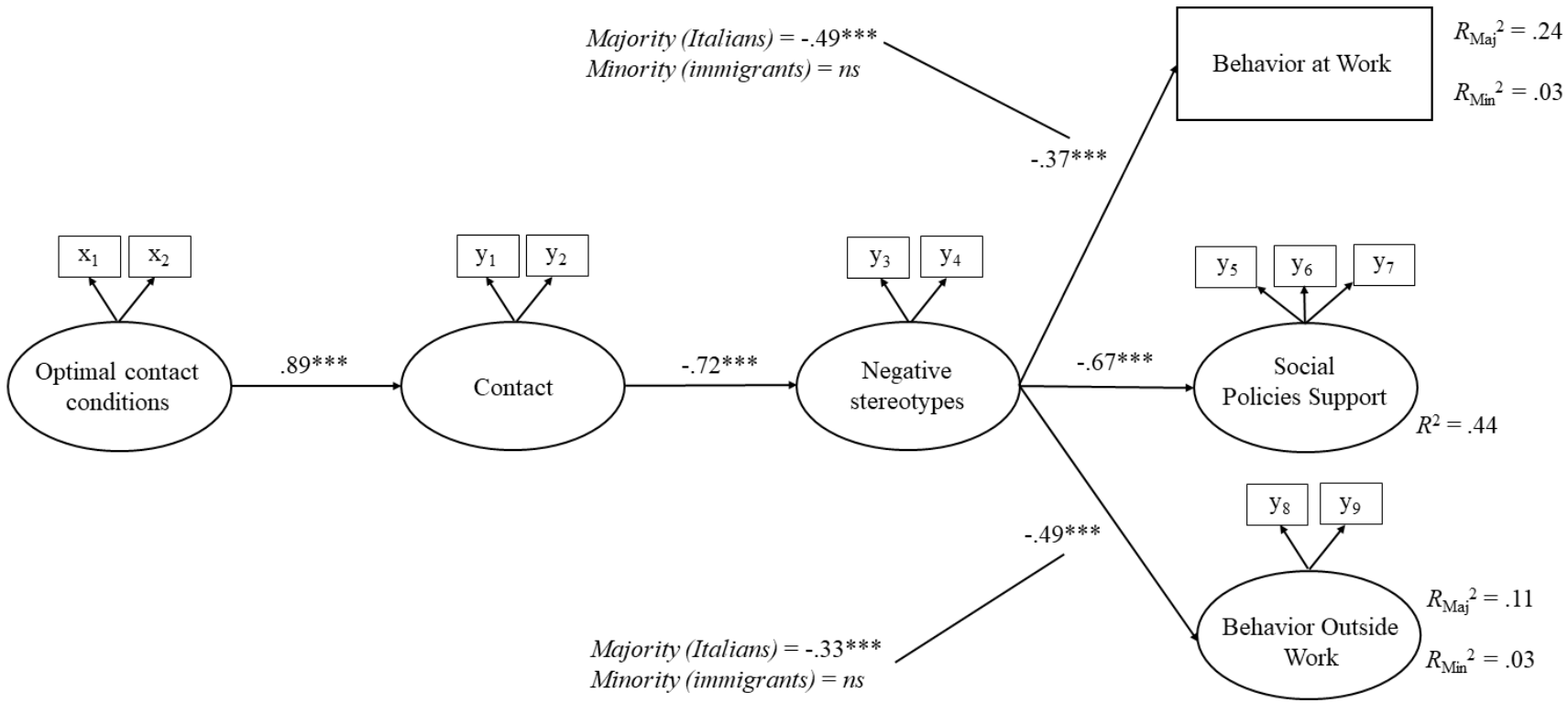
Predictor	First level Mediator	Second Level Mediator	Dependent Variable	Majority (N = 163)		Minority (N = 129)	
				Mean Bootstrap Estimate	Percentile Confidence Interval (95%)	Mean Bootstrap Estimate	Percentile Confidence Interval (95%)
Optimal contact conditions	Contact	Negative stereotypes	Behavior at work	0.5962	[0.3134, 1.1909]	0.1002	[-0.0098, 0.3115]
Optimal contact conditions	Contact	Negative stereotypes	Behavior outside work	0.2223	[0.0573, 0.5757]	0.1312	[-0.0507, 0.4229]
Optimal contact conditions	Contact	Negative stereotypes	Social policies support	0.6039	[0.3475, 1.0884]	0.0725	[0.0074, 0.1930]
Contact	Negative stereotypes	/	Behavior at work	0.6032	[0.3195, 0.9669]	0.1159	[-0.0118, 0.3531]
Contact	Negative stereotypes	/	Behavior outside work	0.2263	[0.8127, 0.8457]	0.1496	[-0.0625, 0.4595]
Contact	Negative stereotypes	/	Social policies support	0.6119	[0.3718, 0.9119]	0.0832	[0.0079, 0.2137]

Note: Mean bootstrap estimates are based on 5,000 bootstrap samples. Non standardized estimates are reported.

Figure Captions

Figure 1. Structural equation model of the effects of optimal conditions and contact on the outcome variables via negative stereotypes, moderated by group (majority sample, $N = 163$; minority sample, $N = 129$). Significant standardized coefficients are reported. ***$p < .001$.

Figure 1


Majority (Italians) = -.49***
Minority (immigrants) = ns
Behavior at Work
R_{Maj}^2 = .24
R_{Min}^2 = .03
-.37***
x_1
x_2
y_1
y_2
y_3
y_4
y_5
y_6
y_7
Optimal contact conditions
.89***
Contact
-.72***
Negative stereotypes
-.67***
Social Policies Support
R^2 = .44
y_8
y_9
-.49***
Behavior Outside Work
R_{Maj}^2 = .11
R_{Min}^2 = .03
Majority (Italians) = -.33***
Minority (immigrants) = ns