

## EXTENDED CONTACT AT SCHOOL

**“And the Best Essay is...”:**

**Extended Contact and Cross-group Friendships at School**

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### Abstract

We conducted one experimental intervention based on extended contact principles aimed at fostering the formation of cross-group friendships within educational settings. Italian school children took part in a school competition for the best essay on personal experiences of cross-group friendships with immigrants, to be written in small groups. This manipulation was intended to favour the exchange of personal positive cross-group experiences, thus capitalising on the benefits of extended contact. In the control condition, participants wrote an essay on friendship, without reference to cross-group relations. Results revealed that children who took part in the intervention reported a higher number of outgroup friends three months later. This indirect effect was sequentially mediated by pro-contact ingroup and outgroup norms and by outgroup contact behavioural intentions. This study provides experimental evidence that interventions based on extended contact can foster cross-group friendship formation. Theoretical and practical implications of the findings are discussed.

*Keywords:* extended contact, cross-group friendship, intergroup behaviour, behavioural intentions, prejudice reduction intervention

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Notwithstanding the effectiveness of face-to-face intergroup contact for the improvement of intergroup relations (Allport, 1954; Hodson & Hewstone, 2013), implementing interventions based on direct contact between members of different groups is not always feasible. For instance, direct contact may sometimes arouse intergroup anxiety, which is one of the main factors disrupting intergroup relations (Stephan & Stephan 1985). Furthermore, prejudice-reduction strategies based on direct contact may sometimes be difficult to put into practice, due to practical and/or organisational constraints. Indirect forms of contact, such as extended intergroup contact (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997), can overcome these issues. However, despite the rapid increase in studies examining extended contact effects (Dovidio, Eller, & Hewstone, 2011), research within educational contexts is still scarce. Given the importance of schools in socialisation processes (Phinney, Ferguson & Tate, 1997), and to address this gap, we conducted an experimental intervention among school children based on extended contact. Moreover, we tested for the first time whether an extended contact intervention can change the pattern of personal friendships, leading participants to include a higher number of outgroup individuals within their inner circle of friends.

### **Extended contact**

Wright et al. (1997) suggested that direct contact is not necessary to reduce prejudice. Instead, merely observing or knowing of an ingroup member who has a close relationship with one or more outgroup members can improve intergroup relations. Dovidio et al. (2011; see also Vezzali, Hewstone, Capozza, Giovannini, & Wölfer, 2014) further elaborated Wright et al.'s hypothesis, by distinguishing extended contact, that is knowing that ingroup members have outgroup friends, from vicarious contact,

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that is observing intergroup interactions vicariously. Extended and vicarious contact thus represent conceptually distinct forms of indirect contact that should be considered separately. In the present article, we focus on extended contact, with a novel and dynamic operationalisation relevant to educational settings.

The extensive review by Vezzali et al. (2014) revealed widespread effects of extended contact on a wide range of cognitive, affective and behavioural outcomes, obtained by using correlational, longitudinal, and experimental methodologies. For instance, there is evidence that extended contact has positive effects on *outgroup attitudes* (Sharp, Voci, & Hewstone, 2011), *outgroup stereotypes* (Munniksma, Stark, Verkuyten, Flache, & Veenstra, 2013), *outgroup variability perceptions* (Paolini, Hewstone, Cairns, & Voci, 2004), *intergroup emotions* (Tausch, Hewstone, Schmid, Hughes, & Cairns, 2011), *behavioural intentions towards the outgroup* (Tam, Hewstone, Kenworthy, & Cairns, 2009, Study 2) and *intergroup behaviour* (Eller, Abrams, & Gomez, 2012). Notably, the effects of extended contact generalise to attitudes and behaviours expressed subtly or indirectly, such as *implicit outgroup attitudes* (Vezzali, Giovannini, & Capozza, 2012) and *outgroup inhumanisation* (Capozza, Falvo, Favara, & Trifiletti, 2013).

Turner, Hewstone, Voci, Paolini, and Christ (2007; see also Dovidio et al., 2011; Vezzali et al., 2014) proposed that extended contact may be especially useful as a preparatory strategy for real intergroup contact. In other words, extended contact experiences should increase the desire to have actual contact with the outgroup and ultimately encourage the formation of cross-group friendships. Although various studies have demonstrated that extended contact heightens intentions to approach outgroup members (e.g., Tam et al., 2009, Study 2), empirical evidence that it affects intergroup

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*behaviour* and specifically cross-group friendship formation is surprisingly scarce (see also Vezzali et al., 2014). In particular, we are aware of only one study testing effects of extended contact on cross-group friendship formation. Schofield, Hausmann, Ye, and Woods (2010) found that extended contact was a longitudinal predictor of the self-reported number of cross-group friends formed during college.

We are also aware of two additional studies relevant to our hypotheses. Both of them, however, were based on vicarious rather than extended contact. Mallett and Wilson (2010, Study 2) found among majority members that watching videos depicting interracial friendships and writing about similar experiences (compared to conditions where participants viewed videos depicting same-race friendships) increased the proportion of new friendships with minority (vs. majority) individuals. Although not focusing on friendships, in another vicarious contact experiment, West and Turner (2014) found that participants watching a video of an intergroup (vs. an intragroup) interaction displayed more positive nonverbal behaviour during a subsequent interaction with an outgroup member (a confederate), which mediated the effect of experimental condition on more positive quality of the interaction (as rated by the confederate).

These initial findings indicate that extended contact can facilitate future cross-group interactions and foster the development of actual intergroup friendships. However, the above studies were based on a self-reported assessment of extended contact relationships and did not manipulate extended contact (Schofield et al., 2010) or concerned vicarious contact manipulations in laboratory settings (Mallett & Wilson, 2010; West & Turner, 2014). Moreover, they considered university students as the sample group. In this study, we develop a theoretically driven experimental intervention based on extended contact principles and test its long-term effects (considering a time

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span of three months) on cross-group friendship formation within a naturalistic context, a school.

### **Effectiveness of extended and vicarious contact within educational contexts**

There are various studies demonstrating positive effects of extended contact on intergroup relations within educational settings (e.g., Turner, Tam Hewstone, Kenworthy, & Cairns, 2013; Vezzali, Giovannini, et al., 2012). There is also some evidence of effectiveness of experimental interventions based on extended contact principles on reduced prejudice within educational contexts. Most of these interventions are based on reading ad-hoc created stories of positive contact between ingroup and outgroup members (e.g., Cameron & Rutland, 2006; Liebkind & McAlister, 1999; Vezzali, Stathi, & Giovannini, 2012), and so they tap the vicarious form of the extended contact hypothesis (Dovidio et al., 2011; Vezzali et al., 2014).

Also, vicarious contact via exposure to positive cross-group relations in television programs has been found to improve outgroup attitudes. For instance, watching episodes of *Sesame Street* and *Different and the Same* (two children's programs characterised by a high degree of racial diversity and positive cross-group interactions among members of several ethnic groups) ameliorated racial attitudes and friendship choices among young children (e.g., Vittrup & Holden, 2011).

One important limitation of the studies reported above, which are mostly based on vicarious rather than on extended contact, is that they all rely on the communication or observation of invented, fictional and/or ad-hoc created stories. Moreover, participants of these interventions were passive listeners or observers, whereas research has shown that active engagement may favour the effectiveness of psychological interventions (Oskamp, 2000). Importantly, none of these studies examined potential

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effects of experimental interventions on actual behaviour (i.e., cross-group friendship formation). Additionally, all the studies reviewed above collected measures after a relatively short time span, leaving unresolved the question of longevity of effects.

In the present study, we implement an extended contact intervention, based on increasing knowledge of real cross-group experiences among peers, and testing effects on actual behaviour after a time interval of three months.

### **Obstacles to extended contact**

According to Wright et al. (1997), knowing (or observing) one or more ingroup members interacting with outgroup members can foster prejudice reduction. Research on extended contact has generally assumed that individuals are actually aware that ingroup members have outgroup acquaintances. However, there are various reasons to think that this may not always be true. First, group members may be reluctant to speak about their outgroup acquaintances (Castelli, De Amicis, & Sherman, 2007), possibly because ingroup members who interact with outgroup members may violate ingroup norms (Clack, Dixon, & Tredoux, 2005) and be perceived as ingroup deviants, thus suffering exclusion reserved for deviant group members (Marques & Yzerbyt, 1988). Moreover, people may sometimes prefer individuals who display ingroup favouritism (Castelli, Tomelleri, & Zogmaister, 2008), and thus may reason that, in order to be accepted by peers, they too should display ingroup favouritism and avoid sharing their positive cross-group experiences. Notably, the influence of social norms (and thus, perceptions of consequences for people who violate these norms) is generally high among children and adolescents (Abrams, Rutland, & Cameron, 2003), who represent the population considered in the present study. Second, simply, individuals may not have had the opportunity to disclose their acquaintances to other ingroup members. For

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instance, pupils of a classroom may not have close relationships with all ingroup classmates, so that they are less likely to discuss their circle of friendships with all of them. In sum, for various reasons, people may be unaware of other ingroup members' cross-group acquaintances.

Our intervention is the first to address this potential limitation, as it is precisely aimed at making individuals aware that other ingroup members actually know outgroup members.

### **The mediating role of social norms, outgroup attitudes and behavioural intentions**

Research on extended contact has identified several mediators of its effects (see Vezzali et al., 2014). Among these, pro-contact ingroup and outgroup norms as originally proposed by Wright et al. (1997) are directly relevant to our hypotheses. There are now various studies showing that these two variables are key factors allowing the positive effects of extended contact on intergroup relations (for empirical evidence, see e.g. Turner, Hewstone, Voci, & Vonofakou, 2008). In our study, we increased awareness that ingroup peers have outgroup friends by exposing participants to their ingroup peers' cross-group experiences. In line with previous research (see Vezzali et al., 2014), we reasoned that exposure to ingroup members' cross-group experiences would increase the perception that the ingroup has norms favourable to intergroup contact (i.e., pro-contact ingroup norms), in turn improving outgroup attitudes and behavioural intentions. Tangentially, reading about cross-group friendships might also affect perceptions of pro-contact outgroup norms, which could work as an additional mediating mechanism. Indeed, since group members often avoid contact because they believe that the outgroup is not interested in cross-group interactions (Shelton & Richeson, 2005), knowing of an interaction between ingroup and outgroup members



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should disconfirm this negative expectation, in turn improving outgroup attitudes and behavioural intentions.

Since we were interested in examining processes driving the effects of extended contact on behaviour (i.e., formation of cross-group friendships), and given the fact that attitudes (Glasman & Albarracin, 1996) and, especially, behavioural intentions (Godin & Kok, 1996) represent proximal predictors of actual behaviour, we also tested outgroup attitudes and behavioural intentions for contact as additional mediators.

### **The present research**

The aim of this study was to test whether an extended contact intervention was effective in promoting the formation of cross-group friendships. The intervention was conducted in mixed classes of schools located in Northern Italy, by examining the relationship between Italians and immigrants from the point of view of Italian children.

Children were asked to take part in a competition for the best essay on personal experiences of cross-group friendships. Their task was to write the essay in small groups, in order to make them disclose their (positive) cross-group experiences, thus increasing awareness that ingroup peers have positive relations with outgroup peers. They were also asked to evaluate the essays written by other ingroup peers: knowing that other (anonymous) ingroup peers have outgroup friends should favour the generalisation process, thus strengthening the effects of the intervention.

To assess these effects, participants were administered a questionnaire one week and another questionnaire three months after the last intervention session (in order to examine a substantial time lag).

Hypotheses are the following:

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*Hypothesis 1:* the intervention should improve outgroup attitudes and behavioural intentions via more positive pro-contact ingroup and outgroup norms.

*Hypothesis 2:* the effect of the intervention on increased number of outgroup friends reported by participants three months after the intervention should be sequentially mediated by improved pro-contact ingroup and outgroup norms, and by positive outgroup attitudes and contact behavioural intentions assessed one week after the intervention.

### **Method**

#### **Participants**

Taking part in the intervention and the first wave of data collection (one week after the end of the intervention) were 120 Italian children (51 males, 69 females) enrolled in multiethnic schools located in Northern Italy. Age ranged from 8 years 10 months to 14 years 6 months (Mean age = 10 years 11 months). Of these participants, 108 (47 males, 61 females; mean age = 10 years 10 months), constituting our final sample, took part in the second wave of data collection (three months after the end of the intervention).<sup>1</sup> Prior to conducting the study, we secured the consent of the children's parents, teachers, and heads of schools.

#### **Procedure**

Participants were randomly allocated to the experimental (intervention) or to the control condition.<sup>2</sup> Researchers conducting the intervention were students enrolled in educational academic courses at a Northern Italian university. All researchers were trained by the first author of the present article. In both conditions, participants were assigned by the experimenters to small same-sex groups of 2 to 3 children each (all groups composed of only Italian children, so that they were ethnically homogenous). In

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the *experimental condition*, participants were asked to take part in a competition for the best essay on the topic: personal experiences of cross-group friendships with immigrants (i.e., the essay best representing the values of friendship). Small groups met once a week for two consecutive weeks; in each session, they worked for two hours on the essay by exchanging and writing a narrative concerning their personal experiences. To reinforce the effectiveness of extended contact, in the third week, participants received an essay on the same topic written by anonymous ingroup peers (from another class) to evaluate for the competition. The essay to be evaluated was written by other children taking part in the competition and who were assigned to the same condition of participants evaluating this essay.<sup>3</sup> This task was performed within the original small groups: children had two hours to carefully read the essay and evaluate it, by indicating on a 11-point scale (range 0-10) to what extent it expressed the positive values of friendship, briefly justifying their response. The *control condition* was identical to the experimental condition. In this case, however, participants were asked to write about personal friendships, with no mention to cross-group experiences, and they evaluated essays written by other peers in the control condition.<sup>4</sup>

One week after the last session, participants were administered a questionnaire with the measures of pro-contact ingroup and outgroup norms, positive outgroup attitudes and contact behavioural intentions. Approximately three months after the end of the intervention, participants were asked to report the number of their outgroup friends.

### **Measures**

For all items, unless otherwise indicated, a 5-point scale was used, ranging from 1 (*not at all*) to 5 (*very much*).

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*Pro-contact ingroup and outgroup norms.* Both pro-contact ingroup and outgroup norms were measured with the following three items, adapted from Turner et al. (2008): “Imagine that an unknown immigrant [Italian] child arrives to your class,” “Do you think that Italian [immigrant] children would like this immigrant [Italian] child?”; “Do you think that Italian [immigrant] children would like to play with this immigrant [Italian] child?”; “Do you think that Italian [immigrant] children would like to be friends with this immigrant [Italian] child?”. Items were combined in reliable measures of pro-contact ingroup ( $\alpha = .80$ ) and outgroup ( $\alpha = .75$ ) norms, with higher scores denoting more favourable norms towards outgroup acceptance from ingroup and outgroup members, respectively.

*Positive outgroup attitudes.* Participants evaluated outgroup members on a feeling thermometer (Haddock, Zanna, & Esses, 1993). Specifically, they were asked to express their attitude by indicating how they felt towards immigrants on a scale ranging from 0 (attitude extremely unfavourable) to 10 (attitude extremely favourable); 5 was the mid-point.

*Contact behavioural intentions.* We used seven items, adapted from Cameron and colleagues (e.g., Cameron & Rutland, 2006). Sample items are: “Imagine that an immigrant child arrives to your class; would you like to play with him/her?”; “Would you like to hang out with immigrant children?”. A composite measure of contact behavioural intentions was computed ( $\alpha = .91$ ), with higher scores reflecting stronger willingness to meet outgroup members.

*Cross-group friendships.* To assess the ethnicity of participants’ inner circle of friends, three months after the last intervention session participants were asked to indicate their three best friends. Moreover, for each friend, they had to indicate whether

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s/he was Italian or immigrant. The measure thus consisted of the number of nominated outgroup friends, up to a maximum of three.

We conducted a confirmatory factor analysis to test convergent and discriminant validity of the measures. We tested a model with five latent variables. For each of the variables measured by multiple items (pro-contact ingroup norms, pro-contact outgroup norms, contact behavioural intentions), two parcels were created combining subsets of items (see Little, Cunningham, Shahar, & Widaman, 2002), while positive outgroup attitudes and number of outgroup friends were measured by single indicators. The model fitted the data well:  $\chi^2(12) = 14.45, p = .273; \chi^2/df = 1.20; SRMR = .021; CFI = .99$ . Some of the correlations between latent variables were rather high, the highest being between pro-contact ingroup norms and contact behavioural intentions,  $r = .71, SE = .066$ , between positive outgroup attitudes and contact behavioural intentions,  $r = .71, SE = .055$ , and between pro-contact ingroup norms and pro-contact outgroup norms,  $r = .59, SE = .096$ . To test whether correlations between constructs were different from the perfect correlation, for each correlation we computed the 95% confidence interval by considering two standard errors above and two standard errors below the estimated correlation. None of these intervals included the perfect correlation. This analysis allows us to conclude that our variables, in addition to be conceptually distinct, are also distinct from an empirical point of view.

### Results

Means and standard deviations in the two conditions are presented in Table 1; correlations can be found in Table 2.<sup>5</sup> To test Hypotheses 1 and 2, we conducted a path analysis with observed variables (MPlus 5.21, Muthén & Muthén, 1998-2009).<sup>6</sup> In the tested model, Intervention (1= experimental condition; 0 = control condition) served as

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the predictor; pro-contact ingroup and outgroup norms were the first-level mediators; positive outgroup attitudes and contact behavioural intentions were the second-level mediators; number of outgroup friends was the dependent variable. We estimated the correlations between pro-contact ingroup and outgroup norms, and between positive outgroup attitudes and contact behavioural intentions (Table 2). Since children's explicit intergroup evaluations are likely to change between middle and late childhood (Aboud, 1988; Raabe & Beelmann, 2011) and on the basis of gender (McGlothlin & Killen, 2010), we statistically controlled for the effects of both age and gender (1 = male; 2 = female), by regressing all endogenous variables on these two variables. Results are presented in Figure 1.

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### Tables 1 & 2

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The model provided a good fit to the data:  $\chi^2(5) = 7.62, p = .179; \chi^2/df = 1.52$ ; SRMR = .027; CFI = .99 (Hu & Bentler, 1999). As can be noted in Figure 1, the intervention increased perceptions that ingroup and outgroup members had favourable norms towards intergroup contact. In turn, pro-contact ingroup norms were associated with more positive outgroup attitudes and stronger willingness to meet outgroup members. Pro-contact outgroup norms were also associated with more positive contact behavioural intentions; however, the association between pro-contact outgroup norms and positive outgroup attitudes was nonsignificant,  $\beta = .13, p = .146$ . Finally, contact behavioural intentions were positively associated with number of outgroup friends; the association between positive outgroup attitudes and number of outgroup friends was nonsignificant,  $\beta = -.04, p = .718$ .

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Figure 1

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Results for indirect effects (bootstrapping procedures were used to estimate the significance of these effects) are reported in Table 3. As can be seen, in line with Hypothesis 1, the effects of the intervention on positive outgroup attitudes and contact behavioural intentions were explained by an improvement in pro-contact ingroup and outgroup norms (with one exception: pro-contact outgroup norms did not mediate the relationship between intervention and positive outgroup attitudes). Furthermore, consistent with Hypothesis 2, the intervention indirectly increased the number of participants' outgroup friends via pro-contact ingroup/outgroup norms and intentions to have contact with outgroup members. In contrast, mediation via ingroup/outgroup norms and positive outgroup attitudes was nonsignificant.

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Table 3

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**Alternative path models**

Although our hypothesised model was based on theoretical assumptions and fitted the data well, we tested two alternative models in order to increase confidence in it. Alternative models, together with our proposed model (Model 1), are summarised in Table 4. The first alternative model (Model 2) tested if the four mediators operated at the same level. The second alternative model (Model 3) tested whether no mediational effect occurred. Specifically, pro-contact ingroup norms, pro-contact outgroup norms, contact behavioural intentions, positive outgroup attitudes, and number of outgroup

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friends were entered as outcome variables at the same level. In the two alternative models the correlations between pro-contact ingroup norms and pro-contact outgroup norms, and between contact behavioural intentions and positive outgroup attitudes, were estimated as in Model 1. Moreover, we included controls for age and gender as in Model 1.

As it appears from Table 4, the two alternative models did not fit the data as well as our hypothesised model. We therefore conclude that the proposed model is a good explanation of the data presented.

### **Discussion**

We conducted an experimental intervention within schools based on extended contact principles with the aim of showing that extended contact can indeed be effective in fostering the formation of cross-group friendships. Results revealed that extended contact increased the number of cross-group friendships via pro-contact ingroup and outgroup norms and via contact behavioural intentions. Notably, effects on intergroup behaviour (i.e., cross-group friendships) were assessed three months after the intervention, thus suggesting that the experimental manipulation had long-lasting effects that span (at least) some months. Cross-group friendships, which typically entail high quality, positive and frequent communication, is a rather powerful form of intergroup contact. Having cross-group friends is associated with reduced intergroup anxiety, increased intergroup empathy and generally improved outgroup attitudes (Hodson & Hewstone, 2013). Thus, we highlight the importance of this intervention as it led to a significant increase in the number of cross-group friendships.

On a theoretical level, our results are in line with studies showing positive effects of experimental interventions based on vicarious contact within educational



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settings (e.g., Cameron & Rutland, 2006; Vezzali, Stathi, et al., 2012) and effects of extended (Schofield et al., 2010) and vicarious contact (Mallett & Wilson, 2010; West & Turner, 2014) on future cross-group interactions and cross-group friendship formation. However, this is the first time, to our knowledge, that an extended contact experimental intervention in a naturalistic setting is found to act as an effective preparatory measure for face-to-face intergroup contact, as theorised by Turner, Voci, Hewstone, et al. (2007). Replicating previous research, pro-contact ingroup and outgroup norms acted as mediators between extended contact and outgroup attitudes and behavioural intentions (Turner et al., 2008). Moreover, in line with TPB (Fishbein & Ajzen, 1974), the most proximal predictor of actual behaviour was the intention to have contact with the outgroup.

It is worth noting that pro-contact outgroup norms were not associated with outgroup attitudes. Possibly, knowing that outgroup members have favourable norms towards contact provides the motivation to approach them (Shelton & Richeson, 2005), without necessarily affecting their evaluation. Relevant to this, in the sample examined, outgroup attitudes were already moderately positive. The fact that the intention to know outgroup members, but not positive outgroup attitudes, was the factor driving the formation of cross-group friendships is consistent with TPB, which states that intentions, more than attitudes, are predictive of behaviour (Fishbein & Ajzen, 1974).

Previous interventions conducted within educational settings are largely based on vicarious contact because participants observed relations between ingroup and outgroup through the lens of independent observers (generally, story writers or TV producers). The present study can be considered as a *true* extended contact intervention, reflecting the initial premise of Wright and colleagues, as participants themselves were

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induced to share their personal cross-group experiences, increasing knowledge that ingroup peers of their class and school have outgroup friends. This creates a more realistic, dynamic, and self-relevant operationalisation of extended contact. Thus, it represents the first evidence of an extended contact intervention within educational settings, when the distinction between actual extended contact and vicarious contact is taken into account (see Dovidio et al., 2011; Vezzali et al., 2014).

As we have argued in the introductory part, individuals may be unaware that ingroup members have outgroup acquaintances, consequently diluting or cancelling the positive effects of knowing about cross-group relations. In other words, although people may have outgroup friends, they may not share their experiences with peers. This behaviour can counter the beneficial consequences of living within multicultural environments, where the probability of cross-group interactions is high. This lack of knowledge of others' cross-group experiences may even be more detrimental in segregated environments, where people may be especially unwilling to reveal their outgroup friendships (because of fear of violating ingroup norms and being rejected by ingroup members). Our intervention shows that asking individuals to share their experiences (thus, permitting information sharing) may allow to capitalise on the benefits of extended contact, which may then realise its full potential.

It is worth noting that the experimental manipulation entrusted participants with an active rather than with a passive role, like the one they generally have in vicarious contact interventions, where they merely listen to or read stories of cross-group relations. To the extent that prejudice-reduction interventions may have stronger effects when participants actively engage in intervention activities (Oskamp, 2000),

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experimental manipulations such as the one we used in this study are more likely to strengthen the effectiveness of extended contact.

We believe our study has noteworthy practical implications. Practitioners should identify ways to make individuals aware that their ingroup friends have positive intergroup experiences. Sharing this information also represents an engaging experience, so that participants become active agents of attitude improvement. Notably, the effects of the intervention may spread beyond outgroup attitudes, influencing the desire to meet outgroup members and, ultimately, favouring cross-group friendship formation. Importantly, caution should be placed on disclosing *positive* rather than negative cross-group experiences. In this study, we specifically asked participants to report their positive cross-group friendship experiences. However, if participants elaborate on negative experiences, it is possible that negative stereotypes are reinforced, contributing to cross-group conflict and segregation (see Vezzali et al., 2014).

We are aware that results involve some potential confounds. First, one could argue that the effects may be due, at least in part, to the disclosure of own cross-group experiences with peers, rather than to the information disclosed by ingroup members about their cross-group experiences. Specifically, disclosing information on personal outgroup friends might have increased the salience of personal cross-group contacts, which might have then produced (or at least favoured) the observed effects. Second, on a similar line, separating effects caused by own writing or by peers' disclosures from those caused by the evaluation of peers' essays is not possible in this research. Third, allocation to conditions is not independent from class membership, since it was done at the class-level rather than at the individual-level. Fourth, although analyses excluded dependency from participants' small group (see Footnote 6), the sample size is too

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limited to allow definite conclusions about independency of observations within each group.

We also acknowledge additional limitations. The measure of behaviour was self-reported rather than actually observed. Moreover, all participants were Italian, so it is not possible to generalise results to the immigrant group. However, given that extended contact has similar effects for majority and minority groups (see Vezzali et al., 2014), we could speculate that our intervention would also be effective among immigrants. This, however, needs to be tested. An additional point is that the present intervention requires some amount of cultural diversity within the social networks considered. Within highly segregated contexts, if participants have no cross-group experiences to disclose, the effects of the intervention may be null or even backfire. Thus, we caution on the generalisability of our results to highly segregated environments.

In conclusion, our study shows that interventions within educational contexts based on extended contact can have long-term behavioural effects, such as an increase in the number of cross-group friendships. Individuals' social networks within multicultural environments often already have the potential for improving intergroup relations, based on extended contact principles. Theorists and practitioners should work together on identifying new and engaging ways to induce individuals to share their positive cross-group experiences, maximising in this way the full potential of extended contact.

**Footnotes**

1. We also had small same-sex groups formed only by immigrant children who were administered the experimental manipulation. However, the sample size was too limited to allow statistical analyses.
2. In two of the three schools where data were collected, we were able to randomly allocate classes to the experimental or to the control condition; in the remaining school, the only class which took part in the intervention was randomly allocated to the control condition.
3. Allocation of essays to children between classes, for both the experimental and the control condition, was completely random. For example, not all children's groups from class 1 received the essays to evaluate from class 2 and vice versa. Rather, one small group of children from class 1 may have received any essay to evaluate from any small group of children assigned to the same condition from another class (e.g., they may have received an essay from a small group of children from class 2), and their own essay may have been evaluated by participants from still a different class (e.g., by a small group from class 3).
4. Inspection of essays revealed that, whereas all essays in the experimental condition concerned cross-group friendship experiences, none of the essays in the control condition reported cross-group experiences (sic), indirectly suggesting, in line with assumptions of this article, that children may not spontaneously discuss their cross-group friendships with ingroup peers.
5. Concerning the measure of number of cross-group friends, distribution of responses was the following: in the experimental condition, 22 participants reported 0 outgroup friends, 17 participants declared 1 outgroup friend, 5

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participants indicated 2 outgroup friends, and 1 participant nominated 3 outgroup friends; in the control condition, 45 participants reported 0 outgroup friends, 15 participants declared 1 outgroup friend, 3 participants indicated 2 outgroup friends.

6. Because of the nested structure of data (children – Level 1 unit of analysis – nested in small groups – Level 2 unit of analysis), we conducted preliminary analyses testing whether a significant portion of variance of the outcome variable (number of outgroup friends) would depend on the specific small group (Level 2) in which participants worked. However, preliminary multilevel analyses taking into account the nested structure of data revealed that intraclass correlation of the dependent variable was small,  $ICC = .02$ , and that the Level 2 variance of number of outgroup friends was not statistically significant,  $\sigma^2 = .01$ ,  $SE = .05$ ,  $p = .845$ . Since multilevel modeling analyses is only required when Level 2 variance is significant, single-level analyses were conducted (Jak, Oort, & Dolan, 2014).

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### References

- About, F. E. (1988). *Children and prejudice*. Cambridge, MA: Addison-Wesley.
- Abrams, D., Rutland, A., & Cameron, L. (2003). The development of subjective group dynamics: Children's judgments of normative and deviant in-group and out-group individuals. *Child Development, 74*, 1840-1856. doi: 10.1046/j.1467-8624.2003.00641.x
- Allport, G. W. (1954). *The nature of prejudice*. New York, NY: Addison-Wesley.
- Cameron, L., & Rutland, A. (2006). Extended contact through story reading in school: Reducing children's prejudice toward the disabled. *Journal of Social Issues, 62*, 469-488. doi: 10.1111/j.1540-4560.2006.00469.x
- Capozza, D., Falvo, R., Favara, I., & Trifiletti, E. (2013). The relationship between direct and indirect cross-group friendships and outgroup humanization: Emotional and cognitive mediators. *Testing, Psychometrics, Methodology in Applied Psychology, 20*, 383-398. doi: 10.4473/TPM20.4.6
- Castelli, L., De Amicis, L., & Sherman, S. J. (2007). The loyal member effect: On the preference for ingroup members who engage in exclusive relations with the ingroup. *Developmental Psychology, 43*, 1347-1359. doi: 10.1037/0012-1649.43.6.1347
- Castelli, L., Tomelleri, S., & Zogmaister, C. (2008). Implicit ingroup metafavoritism: Subtle preference for ingroup members displaying ingroup bias. *Personality and Social Psychology Bulletin, 34*, 807-818. doi: 10.1177/0146167208315210
- Clack, B., Dixon, J., & Tredoux, C. (2005). Eating together apart: Patterns of segregation in a multi-ethnic cafeteria. *Journal of Community and Applied Social Psychology, 15*, 1-16. doi: 10.1002/casp.787

## EXTENDED CONTACT AT SCHOOL

- Dovidio, J. F., Eller, A., & Hewstone, M. (2011). Improving intergroup relations through direct, extended and other forms of in direct contact. *Group Processes and Intergroup Relations*, *14*, 147-160. doi: 10.1177/1368430210390555
- Eller, A., Abrams, D., & Gomez, A. (2012). When the direct route is blocked: The extended contact pathway to improving intergroup relations. *International Journal of Intercultural Relations*, *36*, 637-646. doi: 10.1016/j.ijintrel.2012.03.005
- Fishbein, M., & Ajzen, I. (1974). Attitudes towards objects as predictors of single and multiple behavioural criteria. *Psychological Review*, *8*, 59-74. doi: 10.1037/h0020074
- Glasman, L. R., & Albarracin, D. (2006). Forming attitudes that predict future behavior: A meta-analysis of the attitude-behavior relation. *Psychological Bulletin*, *132*, 778-822.d: 10.1037/0033-2909.132.5.778
- Godin, G., & Kok, G. (1996). The theory of planned behaviour: A review of its applications to health related behaviors. *American Journal of Health Promotion*, *11*, 87-98. doi: 10.4278/0890-1171-11.2.87
- Haddock, G., Zanna, M. P., & Esses, V. M. (1993). Assessing the structure of prejudicial attitudes: The case of attitudes toward homosexuals. *Journal of Personality and Social Psychology*, *65*, 1105-1118. doi: 10.1037/0022-3514.65.6.1105
- Hodson, G., & Hewstone, M. (Eds.) (2013). *Advances in intergroup contact*. New York, NY: Psychology press.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1-55. doi: 10.1080/10705519909540118



## EXTENDED CONTACT AT SCHOOL

- Jak, S., Oort, F. J., & Dolan, C. V. (2014). Measurement bias in multilevel data. *Structural Equation Modeling, 21*, 31-39. doi: 10.1080/10705511.2014.856694
- Liebkind, K., & McAlister, A. L. (1999). Extended contact through peer modelling to promote tolerance in Finland. *European Journal of Social Psychology, 29*, 765-780. doi: 10.1002/(SICI)1099-0992(199908/09)29:5/6<765::AID-EJSP958>3.0.CO;2-J
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling, 9*, 151–173. doi: 10.1207/S15328007SEM0902\_1
- Mallett, R. K., & Wilson, T. D. (2010). Increasing positive intergroup contact. *Journal of Experimental Social Psychology, 46*, 382-387. doi: 10.1016/j.jesp.2009.11.006
- Marques, J. M., & Yzerbyt, V. Y. (1988). The black sheep effect: Judgemental extremity towards ingroup members in inter- and intra-group situations. *European Journal of Social Psychology, 18*, 287-292. doi: 10.1002/ejsp.2420180308
- McGlothlin, H., & Killen, M. (2010). How social experience is related to children's intergroup attitudes. *European Journal of Social Psychology, 40*, 625-634. doi: 10.1002/ejsp.733
- Munniksma, A., Stark, T. H., Verkuyten, M., Flache, A., & Veenstra, R. (2013). Extended intergroup friendships within social settings: The moderating role of initial outgroup attitudes. *Group Processes and Intergroup Relations, 16*, 752-770. doi: 10.1177/1368430213486207
- Muthén, L. K., & Muthén, B. O. (1998-2009). *Mplus user's guide. Fifth edition*. Los Angeles: Muthén & Muthén.
- Oskamp, S. (2000). *Reducing prejudice and discrimination*. Mahawah, NJ: Erlbaum.

## EXTENDED CONTACT AT SCHOOL

- Paolini, S., Hewstone, M., Cairns, E., & Voci, A. (2004). Effects of direct and indirect cross-group friendships on judgements of Catholics and Protestants in Northern Ireland: The mediating role of an anxiety-reduction mechanism. *Personality and Social Psychology Bulletin, 30*, 770-786. doi: 10.1177/0146167203262848
- Phinney, J. S., Ferguson, D. L., & Tate, J. D. (1997). Intergroup attitudes among ethnic minority adolescents: A causal model. *Child Development, 68*, 955-969 doi: 10.2307/1132044
- Raabe, T., & Beelmann, A. (2011). Development of ethnic, racial, and national prejudice in childhood and adolescence: A multi-national meta-analysis of age differences. *Child Development, 82*, 1715-1737. doi: 10.1037/t03782-000
- Schofield, J. W., Hausmann, L. R. M., Ye, F., & Woods, R. L. (2010). Intergroup friendships on campus: Predicting close and casual friendships between White and African American first-year college students. *Group Processes and Intergroup Relations, 13*, 585-602. doi: 10.1177/1368430210362437
- Sharp, M., Voci, A., & Hewstone, M. (2011). Individual difference variables as moderators of the effect of extended cross-group friendship on prejudice: Testing the effects of public self-consciousness and social comparison. *Group Processes and Intergroup Relations, 14*, 207-221. doi: 10.1177/1368430210362437
- Shelton, J. N., & Richeson, J. A. (2005). Intergroup contact and pluralistic ignorance. *Journal of Personality and Social Psychology, 88*, 91-107. doi: 10.1037/0022-3514.88.1.91
- Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues, 41*, 157-175. doi: 10.1111/j.1540-4560.1985.tb01134.x

## EXTENDED CONTACT AT SCHOOL

- Tam, T., Hewstone, M., Kenworthy, J. B., & Cairns, E. (2009). Intergroup trust in Northern Ireland. *Personality and Social Psychology Bulletin*, *35*, 45-59. doi: 10.1177/0146167208325004
- Tausch, N., Hewstone, M., Schmid, K., Hughes, J., & Cairns, E. (2011). Extended contact as a function of closeness of relationship with ingroup contacts. *Group Processes and Intergroup Relations*, *14*, 239-254. doi: 10.1177/1368430210390534
- Turner, R. N., Hewstone, M., Voci, A., Paolini, S., & Christ, O. (2007). Reducing prejudice via direct and extended cross-group friendship. *European Review of Social Psychology*, *18*, 212-255. doi: 10.1080/10463280701680297
- Turner, R. N., Hewstone, M., Voci, A., & Vonofakou, C. (2008). A test of the extended contact hypothesis: The mediating role of intergroup anxiety, perceived ingroup and outgroup norms, and inclusion of the outgroup in the self. *Journal of Personality and Social Psychology*, *95*, 843-860. doi: 10.1037/a0011434
- Turner, R. N., Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2013). Contact between Catholic and Protestant schoolchildren in Northern Ireland. *Journal of Applied Social Psychology*, *43* (Suppl. 2), E216-E228. doi: 10.1111/jasp.12018
- Vezzali, L., Giovannini, D., & Capozza, D. (2012). Social antecedents of children's implicit prejudice: Direct contact, extended contact, explicit and implicit teachers' prejudice. *European Journal of Developmental Psychology*, *9*, 569-581. doi: 10.1080/17405629.2011.631298
- Vezzali, L., Hewstone, M., Capozza, D., Giovannini, D., & Wölfer, R. (2014). Improving intergroup relations with extended and vicarious forms of indirect contact. *European Review of Social Psychology*, *25*, 314-389. doi: 10.1080/10463283.2014.982948

## EXTENDED CONTACT AT SCHOOL

Vezzali, L., Stathi, S., & Giovannini, D. (2012). Indirect contact through book reading: Improving adolescents' attitudes and behavioral intentions toward immigrants.

*Psychology in the Schools*, 49, 148-162. doi: 10.1002/pits.20621

Vittrup, B., & Holden, G. W. (2011). Exploring the impact of educational television and parent-child discussions on children's racial attitudes. *Analyses of Social Issues and Public Policy (ASAP)*, 11, 82-104. doi: 10.1111/j.1530-2415.2010.01223.x

*Public Policy (ASAP)*, 11, 82-104. doi: 10.1111/j.1530-2415.2010.01223.x

West, K., & Turner, R. N. (2014). Using extended contact to improve physiological responses and behaviour toward people with schizophrenia. *Journal of Experimental Social Psychology*, 50, 57-64. doi: 10.1016/j.jesp.2013.06.009

*Journal of Experimental Social Psychology*, 50, 57-64. doi: 10.1016/j.jesp.2013.06.009

Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, 73, 73-90. doi: 10.1037/0022-3514.73.1.73

*Journal of Personality and Social Psychology*, 73, 73-90. doi: 10.1037/0022-3514.73.1.73

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*Table 1.* Means and standard deviations for participants in the experimental and control conditions.

Measure	Condition				<i>t</i> -test	<i>p</i> -value	Cohen's <i>d</i>
	Experimental		Control				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Pro-contact ingroup norms	3.75	0.81	3.41	0.98	1.89	0.062	0.38
Pro-contact outgroup norms	3.85	0.83	3.51	0.82	2.09	0.039	0.41
Positive outgroup attitudes	7.62	2.30	6.44	2.60	2.43	0.017	0.48
Contact behavioural intentions	3.57	0.94	3.16	1.04	2.12	0.037	0.41
Number of outgroup friends	0.67	0.77	0.33	0.57	2.47	0.016	0.50

*Note.* The response scale for all measures ranged from 1 to 5, with the exception of the measure of outgroup attitudes, ranging from 0 to 10, and number of outgroup friends, ranging from 0 to 3.

EXTENDED CONTACT AT SCHOOL

Table 2. Correlations among variables.

	1	2	3	4	5	6
1. Intervention (1 = experimental, 0 = control)	-					
2. Pro-contact ingroup norms	.18 <sup>†</sup>	-				
3. Pro-contact outgroup norms	.20*	.50***	-			
4. Positive outgroup attitudes	.23*	.52***	.37***	-		
5. Contact behavioural intentions	.20*	.61***	.48***	.69***	-	
6. Number of outgroup friends	.24*	.29**	.11	.18 <sup>†</sup>	.24*	-

<sup>†</sup> $p < .07$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## EXTENDED CONTACT AT SCHOOL

*Table 3.* Indirect effects of intervention (independent variable) on number of outgroup friends (dependent variable) via hypothesised mediators.

Predictor	Indirect process	Criterion variable	95% Bootstrap Confidence Interval
Intervention	Pro-contact ingroup norms	Positive outgroup attitudes	0.071 – 1.296
Intervention	Pro-contact ingroup norms	Contact behavioural intentions	0.028 – 0.551
Intervention	Pro-contact outgroup norms	Positive outgroup attitudes	-0.039 – 0.669
Intervention	Pro-contact outgroup norms	Contact behavioural intentions	0.017 – 0.372
Intervention	Pro-contact ingroup norms- Positive outgroup attitudes	Number of outgroup friends	-0.054 – 0.023
Intervention	Pro-contact ingroup norms- Contact behavioural intentions	Number of outgroup friends	0.005 – 0.154
Intervention	Pro-contact outgroup norms- Positive outgroup attitudes	Number of outgroup friends	-0.032 – 0.009
Intervention	Pro-contact outgroup norms- Contact behavioural intentions	Number of outgroup friends	0.003 – 0.093

*Note.* 95% CI are based on 5,000 bootstrap samples.

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Table 4. Fit indices of the proposed model and of alternative models.

Model	Predictor	Mediator(s) – Level 1	Mediator(s) – Level 2	Outcome(s)	df	$\chi^2$	<i>p</i>	$\chi^2/df$	SRMR	CFI
1	Intervention	Pro-contact ingroup norms, pro-contact outgroup norms	Contact behavioural intentions, positive outgroup attitudes	Number of outgroup friends	5	7.62	.179	1.52	.027	.99
2	Intervention	Pro-contact ingroup norms, pro-contact outgroup norms, contact behavioural intentions, positive outgroup attitudes	-	Number of outgroup friends	5	54.20	.000	10.84	.131	.74
3	Intervention	-	-	Pro-contact ingroup norms, pro-contact outgroup norms, contact behavioural intentions, positive outgroup attitudes, number of outgroup friends	8	67.60	.000	8.45	.143	.68



## EXTENDED CONTACT AT SCHOOL

### Figure caption

*Figure 1.* Tested path model (standardized regression coefficients are reported).

Nonsignificant paths are omitted.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Figure 1

