

**Using intercultural videos of direct contact to implement vicarious contact: A school-based
intervention that improves intergroup attitudes**

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Abstract

We aimed to create an engaging and dynamic intervention for schools that uses videos of direct school peer contact to implement a vicarious contact intervention. Participants were ethnic majority (Italian) and minority (immigrant) high-school students ($N = 485$, age ranging from 14 to 22 years old, mean age = 17.24 years), who were asked to watch and evaluate videos created by peers from their school for a competition for the best video on intercultural friendships. Results revealed that vicarious contact, relative to a control condition where participants were not shown any videos, improved outgroup attitudes, reduced negative outgroup stereotypes, and increased willingness to engage in contact with the outgroup. These effects only emerged when intercultural friendships in the videos were salient. Inclusion of the other in the self, but neither intergroup anxiety nor fear of rejection by the outgroup, significantly mediated the effect of the videos on outcomes. We discuss theoretical and practical implications of the findings.

Keywords: vicarious contact, indirect contact, behavioral intentions, prejudice reduction, intervention, intergroup relations.

Research over the past 60 years has provided impressive evidence for the benefits of direct, face-to-face intergroup contact on intergroup relations (Allport, 1954; Hodson & Hewstone, 2013; Pettigrew & Tropp, 2006). However, interventions that use direct contact to improve attitudes may sometimes be difficult to implement. For instance, direct contact cannot be applied in segregated contexts or when opportunity for contact is scarce. In addition, when there are large numbers of people belonging to different groups that should be brought into contact, direct contact interventions can be costly, impractical and difficult to put in place. Indirect support for this contention is provided by Paluck and Green (2009), who found in their review that interventions based on intergroup contact represented only a minority of the prejudice-reduction interventions conducted in the field. Recent research has, however, identified indirect ways to implement intergroup contact. For instance, simply observing ingroup members engaging in positive contact with outgroup members (vicarious contact) has been shown to be an effective way to improve outgroup attitudes (Mazziotta, Mummendey, & Wright, 2011; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997, Study 4).

We conducted a field study with adolescent students in high-schools to test whether vicarious contact is a useful strategy to reduce prejudice in schools. As vicarious contact material, we used videos of intercultural friendships created by peers from the participants' school. We tested the novel hypothesis that prejudice reduction does not "simply" occur when participants are shown a video on intercultural friendships, but only when the element of intercultural friendship is salient in the video. Our study was also designed to identify processes that guide vicarious contact effects. In particular, we tested as potential mediators the following variables: inclusion of the other in the self (IOS; Aron, Aron, & Smollan, 1992), intergroup anxiety and, for the first time in the vicarious contact literature, fear of rejection by the outgroup.

Vicarious contact

According to Wright et al. (1997), knowing about ingroup members having close relationships with outgroup members, or observing these relationships, is sufficient to improve outgroup attitudes. One important recent advancement in indirect contact research is the distinction between extended contact, i.e. *knowing about* a cross-group relationship, and vicarious contact, i.e. *observing* ingroup and outgroup members interacting (Vezzali & Stathi, 2017; see also Brown & Paterson, 2016; Dovidio, Eller, & Hewstone, 2011; Vezzali, Hewstone, Capozza, Giovannini, & Wölfer, 2014).

In a typical vicarious contact study, Mazziotta et al. (2011) asked German participants to watch short video clips depicting a positive interaction between a German and a Chinese individual. The videos were methodically prepared by experimenters and the gender of the actors matched the gender of participants, in order to foster feelings of similarity with the persons in the videos. In the control conditions, participants watched videos depicting an interaction between two German people, or showing a single Chinese person. Results revealed that participants in the experimental (vicarious intergroup contact) condition displayed more positive outgroup attitudes and greater willingness to have contact with outgroup members.

Vicarious contact has also been tested with child samples. For instance, Castelli, De Dea, and Nesdale (2008, Study 2) found that White preschool children aged between 40 and 70 months revealed more positive attitudes toward Blacks when a White adult actor displayed positive (vs. negative) nonverbal behavior toward a Black adult actor; in contrast, attitudes toward Whites were unaffected by the vicarious contact manipulation.

The extensive review by Vezzali et al. (2014) revealed that vicarious contact is indeed an effective way to improve intergroup relations. Specifically, it has been shown that vicarious

contact can improve outgroup attitudes (Liebkind & McAlister, 1999), outgroup stereotypes (Vezzali, Stathi, & Giovannini, 2012), behavioral intentions (Mazziotta et al., 2011) and actual intergroup behavior (Paluck, 2009), and its effects extend to more positive physiological responses (i.e., less stress) when expecting to meet an outgroup member (West & Turner, 2014).

There are also studies showing the effectiveness of vicarious contact within educational settings. Many of these studies take advantage of a special form of vicarious contact, based on the observation of positive intergroup relations via the media (e.g., Mares & Pan, 2013; Mutz & Goldman, 2010; Ortiz & Harwood, 2007). Several of these studies operationalized vicarious contact by means of ad hoc created stories where ingroup and outgroup characters have positive interactions (e.g., Aronson et al., 2016; Cameron & Rutland, 2006; Cameron, Rutland, & Brown, 2007; Cameron, Rutland, Brown, & Douch, 2006; Cameron, Rutland, Hossain, & Petley, 2011; Greenwood et al., 2016; Liebkind & McAlister, 1999; Liebkind, Mahonen, Solares, Solheim, & Jasinskaja-Lahti, 2014). Reading these stories and then discussing them with the researchers was shown to improve outgroup attitudes and behavioral intentions of children and adolescents. Notably, stories of intergroup contact were also effective when taken from carefully selected published children's books and even when not discussed collectively with the researchers (Vezzali et al., 2012; see also Vezzali, Stathi, Giovannini, Capozza, & Trifiletti, 2015, Study 1).

These educational field interventions based on story readings have, however, important theoretical as well as practical limitations. First, they generally focus on the attitudes of majority group members. We therefore need empirical evidence that vicarious contact is effective in improving also minority group members' attitudes in naturalistic intervention studies. Second, previous studies focused on a looser conceptualization of vicarious contact since, in the case of stories, contact is "experienced" through the lens of the author rather than being actually

watched. But the experience of *reading* about a cross-group relationship can be clearly different from *observing* it. In addition, these stories were prepared or selected by researchers in order to exemplify vicarious contact principles. Practitioners and educators may not, however, have the expertise, the time, or the motivation to identify such stories and would need to collaborate with researchers who have experience in indirect contact strategies (cf. Husnu, Mertan, & Cicek, 2017, Study 2; McKeown, Williams, & Pauker, 2017). Even when using videos of television programs (Mares & Pan, 2013; Ortiz & Harwood, 2007), individuals are shown fictional stories prepared by experts. From a practical perspective, this process can be lengthy and costly.

In the reported research we sought to capitalize on one of the benefits of vicarious contact, by asking participants to watch videos on intercultural friendships. Note that videos were prepared by participants' peers (i.e., school students) and not by experts, with the possibility that they may not fully engage with principles that research has identified as important for vicarious contact to work, and specifically a noticeable and positive *intergroup* context. In particular, although we provided clear instructions, there was a possibility that not all the videos would be sufficiently focused on intercultural interactions (note, for example, that actors in the videos did not wear any school uniform or labels identifying them as belonging to a single or to distinct groups), which is key for vicarious contact to be effective (Mazziotta et al., 2011). According to Hewstone and Brown's (1986; Brown & Hewstone, 2005) model of intergroup contact and subsequent research on cross-group friendships (Davies, Tropp, Aron, Pettigrew, & Wright, 2011; Turner, Hewstone, Voci, Paolini, & Christ, 2007), contact (in this case, vicarious contact) can reduce prejudice when group membership is salient, an effect that is even stronger when the intergroup relation is characterized by friendship. Otherwise, individuals will categorize themselves (or, in the case of the present article, individuals shown in the videos)

as individuals and not as group members, thus making it difficult to associate them to their general categories and ultimately to reduce prejudice via generalization (from individual outgroup member to outgroup in general; Pettigrew, 1998).

In addition, even if the intergroup nature of friendship is salient, it is possible that it is not *sufficiently* visible to improve outgroup attitudes. As we stated above, vicarious contact studies have generally utilized materials prepared by intergroup relations experts, who have likely strongly highlighted the intergroup nature of positive interactions between characters. We argue that, in order to produce vicarious contact effects and overcome the barriers created by prejudice, the element of intergroup friendships should be salient. Since non-experts – in the case of this study, school students – may have difficulties in creating material clearly stressing intergroup friendships, we test for the first time whether the salience of intergroup friendships in the videos moderates vicarious contact effects.

These considerations led to our first hypothesis: vicarious contact will be most effective when the presence of intergroup friendships in the videos is salient.

Processes underlying vicarious contact

Research has identified several mediators of extended and vicarious contact. In this study we focused on IOS and intergroup anxiety, which are two established mediators of extended vicarious contact (Wright et al., 1997), and on a novel potential mediator, fear of rejection by the outgroup.

The rationale underlying the use of IOS as mediator of extended/vicarious contact is that, since individuals belonging to one's ingroup are spontaneously included in the self (Smith & Henry, 1996), and that persons who are engaged in a close relationship are perceived as belonging to a single cognitive unit (Sedikides, Olsen, & Reis, 1993), then observing ingroup

and outgroup members engaging in friendly relations should bring outgroup members closer to the self.

The second mechanism we consider is intergroup anxiety, which represents one of the main obstacles to intergroup contact and positive intergroup relations generally (Stephan, 2014). Observing positive contact should reduce the unease felt when expecting to interact with outgroup members, since these observed interactions, being positive, should indicate that the intergroup interactions can be pleasant (Wright et al., 1997).

There is now consistent evidence that these mechanisms mediate the effects of extended contact (e.g., Gomez, Tropp, & Fernandez, 2011; Turner, Hewstone, Voci, & Vonofakou, 2008). There is also evidence for these mechanisms (Cameron et al., 2006, 2011; Mazziotta et al., 2011; Vezzali et al., 2012) as mediators of vicarious contact, although in the latter case evidence is quite scarce, and mostly based on studies operationalizing vicarious contact as story reading (see Vezzali et al., 2014).

With respect to our research, observing videos on intercultural friendships should increase perceptions that ingroup and outgroup form a single cognitive unit, thus bringing the outgroup psychologically closer to the self. Moreover, observing positive intergroup contact should make evident that the outgroup is not to be feared and that intergroup relations can be relaxed and pleasant. In turn, increased IOS and reduced anxiety should be associated with more positive outgroup attitudes.

We also focused on a potential new mediator of vicarious contact: fear of rejection by the outgroup. Shelton and Richeson (2005) demonstrated in a series of studies that both majority and minority members attributed their contact avoidance mainly to fear of being rejected, whereas they attributed the fact that outgroup members avoided contact more to lack of interest. In other

words, participants in these studies declared that the reason why they do not engage in contact is because they are afraid that the outgroup will not accept them. A number of other contact studies have confirmed the importance of rejection sensitivity (e.g., Al Ramiah, Schmid, Hewstone, & Floe, 2015; Barlow, Louis, & Hewstone, 2009). We reasoned that observing ingroup and outgroup members engaging in friendly relations should eliminate the concerns that the outgroup wants to avoid the ingroup, in turn favoring an improvement in outgroup attitudes and desire to meet outgroup members.

Preliminary evidence for this hypothesis was provided by Shapiro, Baldwin, Williams, and Trawalter (2011). In three studies, they showed that White participants exposed to a picture featuring a Black man paired with a White man presented as his friend (vicarious contact) displayed lower concerns of being rejected by this Black man, compared to a condition where the Black man was paired with another Black man. Reduced rejection concerns, in turn, mediated the effect of condition on intentions to accept the Black man.

It is further noted that intergroup interactions can be associated with fear of rejection not only by outgroup members but also by fellow ingroup members. Indeed, as suggested by the series of studies by Eller, Gomez, Vázquez, and Fernández (2017), ingroup members who have contact with a disliked outgroup are likely to be evaluated negatively by their fellow ingroup members, and might consequently fear rejection by their ingroup. While rejection by the ingroup as a consequence of intergroup contact forms a noteworthy line of research, its outcomes are likely to be related to intragroup (e.g., distancing from the ingroup) or interpersonal/intrapersonal (e.g., reduced self-esteem) dynamics. Fear of rejection by the outgroup is instead a more relevant process when analyzing intergroup outcomes (e.g., prejudice), which are the focus of the current research.

The present research

The aim of this study was to develop a dynamic vicarious contact strategy and test when and how intercultural videos can reduce prejudice in schools. The study was carried out in schools located in northern Italy, considering the relationship between Italians (majority group) and immigrants (minority group). Participants in the experimental condition were shown videos on intercultural friendships produced by peers from their school. In the control condition, participants were simply asked to fill in the questionnaire without having watched the videos. 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 addition to assessing outgroup attitudes and stereotypes, the questionnaire also included a measure of willingness to engage in contact with the outgroup. We added this measure because indirect contact is often intended as a preparatory strategy for direct contact (Crisp & Turner, 2012; Turner & Cameron, 2016; Turner et al., 2007), and behavioral intentions are the most proximal predictor of behavior (see Ajzen, 1991; Godin & Kok, 1996). Therefore, intentions to engage in intergroup interactions should be important predictors of future contact. Moreover, previous studies have shown that greater intentions to engage in contact after an indirect (extended) contact intervention predict friendship formation over time (Vezzali, Stathi, Giovannini, Capozza, & Visintin, 2015). The tested mediators, as explained above, were IOS, intergroup anxiety, and fear of rejection by the outgroup. We tested the following main hypotheses:

Hypothesis 1. Vicarious contact should improve outgroup attitudes, stereotypes and behavioral intentions to a greater extent when the presence of intercultural friendships (obtained

from external raters) is especially noticeable in the videos. Specifically, we expect a moderation effect, such that vicarious contact effects are moderated by the extent to which intercultural friendships in the videos are clearly noticeable.

Hypothesis 2. The moderated effect of vicarious contact should be mediated by increased IOS, lower intergroup anxiety, and reduced fear of rejection by the outgroup. In other words, we expect a pattern of mediated moderation, where: vicarious contact is the predictor; presence of intercultural friendships in the videos is the moderator; and IOS, intergroup anxiety, and fear of rejection are the mediators.

Method

Participants

Participants were 485 high-school students (260 males, 225 females, age ranging from 14 to 22 years) from four high-schools located in northern Italy. Mean age was 17.24 years ($SD = 1.66$). Participants self-defined as Italians or immigrants, by choosing the corresponding questionnaire. Specifically, participants were seated in front of computers in the computer room of the school, and were asked to either select the link for the questionnaire addressed to Italians, or the link addressed to individuals with immigrant origins. We excluded one participant, because although both of his parents were immigrants (information provided by the participant in the questionnaire), he selected the questionnaire for Italians. Of the participants included in the final sample, 358 (198 males, 160 females; mean age = 17.14 years, $SD = 1.60$, age ranging from 14 to 21 years) completed the questionnaire addressed to Italians, and 127 the questionnaire addressed to immigrants (62 males, 65 females; mean age = 17.52 years, $SD = 1.78$, age ranging from 14 to 22 years). Most immigrants were from Africa (50.4%), followed by immigrants from Eastern Europe (30.7%), Asia (16.5%), and South America (2.4%)¹.

Procedure

Preparation of vicarious contact material

One hundred and twenty-eight high-school students (91 Italians and 37 of immigrant origin) from seven classes of the four high-schools from which participants were recruited were asked to work in small mixed groups composed of both Italian and immigrant students for a competition for the best video on intercultural friendships. The task was to create a three-minute video, based on either a real or a fictional story and performed by both Italian and immigrant students included in the small group, depicting the importance of intercultural friendships. In the instructions provided to all participants, we specified that videos should not just depict Italian and immigrant characters; rather, they should make evident that Italian and immigrant characters belong to distinct groups and are friends. In each video, two minutes had to be devoted to the story created by participants, and the remaining minute to the details of making the video (a sort of backstage, by which we intended to display friendly relations among the actors and the producers of the videos). The videos that were produced were used to manipulate vicarious contact (in the four schools used, six, three, five and eight videos were produced in each school, respectively).

Vicarious contact intervention

Both in the experimental and in the control condition participants were informed that students from some classes of their school took part in a competition together with three other schools for the best video on intercultural friendships. Since only two videos per school could be selected to compete against the videos from the other schools, the participants' task was to watch the videos produced by students from their school and individually vote for what they thought was the best video.

Participants in the *experimental condition* were asked to watch all the videos produced by peers from their own schools. Videos were shown collectively in the computer rooms of each school; participants were then invited to indicate their preferred video on a sheet of paper and insert it in a ballot box. Once everybody had voted, while still in the computer room, students were asked to take part in a study on social attitudes. They were then individually administered an online questionnaire.

In the *control condition*, the order of task was reversed: participants first took part in the research on social attitudes, and only after everybody had completed the questionnaire were they shown the videos produced by students from their school.

The questionnaire was presented to participants (both in the experimental and in the control condition) as part of a study on social attitudes unrelated to the video competition.

Finally, participants were thanked and fully debriefed.

Measures

The questionnaire for Italians and immigrants was identical, with one key difference: Italians were asked to use immigrants as the target outgroup and vice versa. For all items, unless otherwise indicated, a 5-point scale was used, ranging from 1 (*not at all*) to 5 (*very much*).

Inclusion of the other in the self (IOS). IOS was measured with one item (see Aron et al., 1992), consisting of five pairs of overlapping circles varying in their degree of overlap between the self as one circle and the outgroup target (immigrant or Italian) as the other circle.

Participants were asked to imagine meeting an immigrant [Italian] from their school they did not know in the park, and to indicate the pair of circles that best described their closeness to this person, with higher scores denoting greater closeness (for a similar measure, see, e.g., Cameron et al., 2006; Vezzali et al., 2012).

Intergroup anxiety. Participants were asked to imagine being at the park and meeting an immigrant [Italian] from their school they did not know, and to indicate how they felt toward this person by using four items (see Capozza, Trifiletti, Vezzali, & Favara, 2013; Stephan & Stephan, 1985): anxious, nervous, relaxed (reverse-scored), quiet (reverse-scored). Items were combined into a single index of intergroup anxiety ($\alpha = .86$), with higher scores reflecting more anxiety.

Fear of rejection by the outgroup. We used two items adapted from Jasinskaja-Lahti, Mahonen and Liebkind (2012), Shelton and Richeson (2005), Vorauer and Sakamoto (2008): “Imagine that an immigrant [Italian] arrives in your class,” “do you think s/he will like you?”; “do you think s/he will want to be friends with you?”. After reverse-scoring the two items, they were collapsed in a single index ($r = .58, p < .001$), with higher scores denoting more fear of being rejected by the outgroup.

Outgroup attitudes. Outgroup attitudes were measured by asking participants to indicate how they felt toward immigrants [Italians] on a scale anchored by 0 (*I don't like them at all*) and 10 (*I like them very much*) (see Converse, Dotson, Hoag, & McGee, 1980).

Negative outgroup stereotypes. Participants indicated how many immigrants [Italians] possess each of seven traits (e.g., dirty, friendly (reverse-scored), bad-mannered), adapted from Vezzali et al. (2012). The response scale ranged from 1 (*none*) to 5 (*all*). Items were averaged to form a single index of negative outgroup stereotypes ($\alpha = .80$).²

Contact behavioral intentions. Contact behavioral intentions were assessed with seven items, adapted from Cameron and Rutland (2006) and from Vezzali, Stathi, Giovannini, Capozza, and Visintin (2015). Sample items are: “Imagine that an immigrant [Italian] arrives in your class; would you like to play with him/her?”; “Would you like to be friends with

immigrants [Italians]?”. The seven items were combined in a single index ($\alpha = .94$), with higher scores indicating greater willingness to engage in contact with outgroup members.

Evaluation of the videos

Given that the videos were created in different schools by different students, it was likely that there would be variability in the extent to which they depicted the intercultural component of friendships (of central importance for the research). Despite the topic of the video being intercultural friendships, students producing the videos might have varied in the degree to which they attended to the assigned task and there might have been differences in the videos from one school to the other. We therefore asked two independent coders, who were unaware of experimental hypotheses, to evaluate each video by using the following two items: “Does the video depict friendships between Italians and immigrants?”; “Does the video show a situation where Italians and immigrants have contact?”. Ratings were made on a 7-step scale anchored by 1 (*totally disagree*) and 7 (*totally agree*); 4 was the neutral point (*neither-nor*). Inter-rater reliability, calculated by using Krippendorff’s alpha, was .67. Ratings of the two coders for the two items were combined in a single index of *presence of intercultural friendships in the videos* for each of the videos, and ratings of videos were averaged for each school. We expected vicarious contact to produce stronger positive effects only when intercultural friendships were clearly noticeable in the videos.

In all schools the videos focused on intergroup interactions, consistent with the task assigned. In fact, on average, the mean of presence of intercultural friendships in the videos was 5.36, well above the mid-point of the scale (i.e., 4). However, the mean of presence of intercultural friendships in the videos differed among the four schools: 5.88, 5.42, 4.90, and 5.22,

respectively. Therefore, the newly created index of presence of intercultural friendships was used as a moderator of the effects of the vicarious contact manipulation.

Results

Effects on outcome variables

Means and standard deviations for the tested variables in the experimental and control conditions are presented in Table 1. First, we tested the hypothesis that vicarious contact would have stronger positive effects on outgroup attitudes, stereotypes and behavioral intentions when the presence of intercultural friendships in the videos was especially noticeable.

In order to test our first hypothesis, we ran a hierarchical regression for each of the dependent variables. Predictors were Condition (1 = experimental, -1 = control) and Presence of intercultural friendships (centered) in the first step, and the two-way product between the two predictors in the second step. As can be seen in Table 2, the two-way interaction was significant for all dependent variables. Decomposition of the interaction revealed that, as expected, when presence of intercultural friendships in the videos was high (+1 *SD*), vicarious contact (vs. control) improved outgroup attitudes, $b = .47, t = 3.34, p < .001$, reduced negative outgroup stereotypes, $b = -.10, t = 2.46, p < .05$, and fostered greater intentions to have contact with the outgroup, $b = .15, t = 2.24, p < .05$. In contrast, the effects of vicarious contact were nonsignificant when presence of intercultural friendships in the videos was low (-1 *SD*): $b = -.16, t = 1.09, p = .274$, for outgroup attitudes; $b = .04, t = 0.96, p = .336$, for negative outgroup stereotypes; $b = -.07, t = 1.05, p = .293$, for contact behavioral intentions.³

Underlying processes

To test whether IOS, intergroup anxiety and fear of rejection by the outgroup mediated the effects of vicarious contact on outcome variables to a greater extent when presence of

intercultural friendships in the videos was high (Hypothesis 2), we first tested whether vicarious contact affected the hypothesized mediators. We ran three hierarchical regressions, one for each mediating variable, identical to those conducted to test effects on dependent variables (section above). Results are presented in Table 2.

As can be seen in Table 2, a marginally significant interaction ($p = .076$) emerged when IOS was the dependent variable. Decomposition of the interaction revealed that, in line with expectations, when presence of intercultural friendships in the videos was high (+1 *SD*), vicarious contact (vs. control) improved IOS, $b = .21$, $t = 2.51$, $p < .05$; effects of vicarious contact were nonsignificant when presence of intercultural friendships in the videos was low (-1 *SD*), $b = -.00$, $t = -.00$, $p = .995$. The two-way interaction between condition and presence of intercultural friendships in the videos was also marginally significant for fear of being rejected ($p = .065$). However, decomposition of the interaction revealed that the experimental condition had no significant effect on fear of rejection when presence of intercultural friendships in the videos was high (+1 *SD*), $b = -.05$, $t = 0.88$, $p = .378$. When presence of intercultural friendships in the videos was low (-1 *SD*), experimental condition tended instead to increase fear of rejection, $b = .10$, $t = 1.73$, $p = .084$. This latter effect was, however, only marginally significant. Finally, presence of intercultural friendships in the videos did not moderate the effect of experimental condition on intergroup anxiety (Table 2).

Based on these preliminary analyses, we included only IOS as potential mediating variable. To test our mediated moderation hypothesis, we used the PROCESS macro by Hayes (2016, Model 8). In the model, condition is the independent variable, IOS is the mediator, and presence of intercultural friendships in the videos is the moderator. Dependent variables are outgroup attitudes, negative outgroup stereotypes, contact behavioral intentions. Results are

presented in Table 3. As can be seen, IOS was associated in the expected direction with the three dependent variables over and above the other predictors. We tested indirect effects with bootstrapping procedures, which revealed that the indirect effect of the experimental condition via IOS when presence of intercultural conditions was high was significant for all dependent variables (Table 4). The indirect effects of the experimental condition on dependent variables via IOS when presence of intercultural conditions was low were, however, never significant.⁴

Moderation by group status

Previous research suggested that extended and vicarious contact effects are not moderated by group status (see Vezzali et al., 2014). However, since there is evidence that the effect of direct contact on prejudice is greater for majority than minority group members (Tropp & Pettigrew, 2005), we repeated the analyses presented above by testing whether group status (Italian vs. immigrant) moderated some of the effects.

In particular, for each dependent (outgroup attitudes, negative outgroup stereotypes, contact behavioral intentions) and mediating (IOS, intergroup anxiety, fear of rejection by the outgroup) variable, group (Italian = 1, immigrant = -1) was added to the list of predictors (experimental condition, presence of intercultural friendships in the videos); in the second step we added the two-way interactions; in the third step we included the three-way interaction.

Results revealed that neither the two-way interactions involving group, $ps > .221$, nor the three-way interaction Condition \times Presence of intercultural friendships in the videos \times Group were significant, $ps > .198$.

These results support the contention that effects of vicarious contact do not differ between majority and minority respondents (Vezzali et al., 2014), thus providing further support for the usefulness of strategies based on extended/vicarious contact.

Discussion

We conducted a study to test the positive effects of a vicarious contact intervention. Participants were Italian (majority) and immigrant (minority) high-school students. Results provided support for the effectiveness of our vicarious contact intervention. In particular, watching videos focusing on intercultural friendships, produced by school peers, improved outgroup attitudes and reduced negative outgroup stereotypes. Moreover, the intervention also increased willingness to engage in contact behaviors with outgroup members. This latter result supports the role of vicarious contact as a preparatory strategy for face-to-face contact (Turner et al., 2007) and suggests that vicarious contact may lead to friendship formation over time (see Vezzali, Stathi, Giovannini, Capozza, & Visintin, 2015).

Importantly, the effects of vicarious contact were moderated, such that vicarious contact only influenced outcome variables when intercultural contact and friendships were clearly noticeable in the videos. This is consistent with the basic principles of vicarious (and extended) contact, implying that outgroup attitudes will improve when individuals are exposed to positive cross-group relationships (Wright et al., 1997). This finding does not allow overly optimistic conclusions regarding the use of intercultural videos realized by non-experts and suggests caution on this strategy. In fact, although the videos from all four schools made intercultural contact salient, only very high levels of salience produced the vicarious contact effect. Evidently, intercultural friendships should be highly salient in the videos, much above the mid-point of the scale, to produce an effect on outgroup attitudes. This suggests that caution is required in the creation of media and education campaigns that aim to improve outgroup attitudes via exposure to positive cross-group interactions, pointing to a necessary collaboration between practitioners and social psychology scholars (Cameron & Rutland, 2016; Turner & Cameron, 2016).

Notably, effects were not moderated by participants' group, replicating prior research showing that extended/vicarious contact is equally effective for both majority and minority members (see Vezzali et al., 2014), and increasing confidence in its use as a prejudice-reduction strategy. This is particularly important given that other indirect contact strategies, as well as direct contact, have sometimes been less successful in improving the attitudes of minority group members (Stathi & Crisp, 2008; Tropp & Pettigrew, 2005).

Replicating prior research (Cameron et al., 2006), IOS emerged as the mediator of the effects of vicarious contact. This is the first time, however, that this result has been obtained with individuals belonging to both the majority and the minority group, and by using videos as the means to implement vicarious contact. Tausch, Hewstone, Schmid, Hughes, and Cairns (2011) found that effects of indirect (i.e., extended) contact were especially powerful when the person through whom indirect contact was realized was close to the self. In our study, producers of and, especially, actors in the videos were peers from the same school as the participants, therefore they should be close to the participants' self. It is the case then that observing ingroup members who are close to the self and who act positively toward outgroup members has fostered psychological connection with these outgroup others, increasing IOS and, in turn, ameliorating outgroup attitudes and stereotypes and increasing the desire to meet outgroup members.

Our results did not provide evidence either for intergroup anxiety or for fear of rejection by the outgroup as mediators of the vicarious contact effect. Concerning intergroup anxiety, it is possible that participants speculated that the interactions reproduced in the videos were staged and did not reflect "real" intergroup relations. However, be this the case, it is hard to see why such apparently 'staged' videos would have the impact that they clearly did. Possibly, this result

was also due to a ceiling effect: anxiety levels were very low (see Table 1), thus leaving little space for improvement.

Fear of rejection by the outgroup may be a concern in some, but not all, contexts (Shelton & Richeson, 2005). For instance, Al Ramiah et al. (2015) found in a sample of high-school students that both majority (British students) and minority (Asian students) individuals attributed their contact avoidance more to lack of interest than to fear of rejection. Therefore, fear of rejection may not be an especially salient concern in some situations, explaining at least in part why this variable was not affected by our prejudice-reduction intervention. However, since observing intergroup contact can provide information on outgroup *as well as* ingroup norms (Wright et al., 1997), it follows that it may provide indications as to whether one would be rejected by ingroup members when engaging in intergroup contact (a concept closely linked to ingroup norms). In the case of our study, it might be that when observing videos of positive contact, and especially when intercultural friendships were highly visible, fear of being rejected by ingroup peers for having contact with the outgroup was reduced (Eller et al., 2017). This could in turn have promoted more positive outgroup attitudes and behavioral intentions. Although we only included fear of rejection by the outgroup as a factor more directly pertinent to intergroup relations, future studies should also test the potential mediating role of fear of rejection *from the ingroup*.

It should be noted that participants did not actually watch exactly what happened during the direct contact preparatory phase. Rather, participants in the intervention phase watched a staged video produced by their peers in the direct contact phase. Future studies should find ways to spread the actual experience of a direct contact phase, although we acknowledge that this will

not be an easy task (starting from the selection of situations to disclose, to the means by which to disclose them).

One of the ideas motivating this study was that knowing that the watched videos were prepared by individuals sharing one relevant social identity (students of the same school) would add to their effectiveness. This is in line with findings showing that increased closeness to ingroup exemplars who have contact with outgroup members produces stronger extended and vicarious contact effects (Tausch et al., 2011). This also implies that some of the participants may have known the actors in the videos, and possibly effects would have been stronger among these individuals. Unfortunately, although we had included an item assessing whether participants knew one or more actors in the videos, about half of the participants (236 out of 485) did not answer this item precluding the possibility to control for this (168 reported they knew at least one actor, and 68 that they did not know any of the actors).

We believe that our study makes considerable contributions to the field. First, we tested for the first time the effectiveness of videos produced by non-experts as illustrations of vicarious contact. In so doing, we uncovered a new moderator of vicarious contact, namely the salience of intercultural friendships in the videos. Second, we included both majority and minority members in a vicarious contact intervention, and provided evidence that in the case of vicarious contact (unlike direct contact; Pettigrew & Tropp, 2006) the intervention was equally effective for both groups.

Our findings have noteworthy practical implications. They suggest that whenever large-scale interventions based on direct contact cannot be conducted, practitioners can rely on vicarious contact strategies. Our study also highlights the potential of a two-step procedure: in a first phase, it is sufficient that some people, ideally those close to the self, engage in direct

contact. In a second phase, the effects of direct contact between a smaller number of individuals can spread with vicarious contact techniques to a large number of individuals. These two-phase interventions also have the potential to foster formation of intercultural friendships over time, making face-to-face contact more appealing to individuals (see also Vezzali & Stathi, 2017). It should be noted that videos in all schools were focused on intercultural friendships, as the means provided by coders for the videos indicate. Nonetheless, only those where intercultural friendships were highly visible yielded an effect. This result suggests caution on the simplistic conclusion that merely showing positive intergroup contact is sufficient for improving outgroup attitudes. If vicarious contact is operationalized with videos produced by non-experts, practitioners or researchers with experience of indirect contact techniques should carefully monitor the videos and only use those which are more likely to produce beneficial effects on intergroup relations.

Notwithstanding the reported effects in a realistic intervention with adequate sample size, we also acknowledge some limitations of this research. First, not all participants were exposed to the same experimental stimuli. That is, participants from different schools watched different videos. However, because of how the competition had been framed, it would have been impractical to organize video watching and the data collection differently. Otherwise, in fact, participants would have been exposed to 22 videos, with obvious problems related to this, for instance reduced attention and focus and potential order and rebound effects. Asking participants to watch videos by themselves would have increased the number of uncontrolled variables, such as differential conditions of exposure and no certainty that videos had effectively been watched.

Second, videos were evaluated by external coders, rather than by participants themselves. However, since watching videos was presented with the cover story of selecting the two best

videos for a competition, it would have been odd to ask participants to rate each video based on the extent to which it represented intercultural friendships. Moreover, doing so would have likely increased demand concerns. In any case, the fact that our moderation analysis was based on scores from external coders is a limitation that future studies should address.

Third, it is possible that videos differed on other dimensions in addition to presence of intercultural friendships, and these eventual differences may at least partly account for results observed.

Fourth, the fact that participants were asked to self-select the questionnaire addressed to Italians or immigrants might have increased the salience of group distinctions, somehow influencing participants' responses. However, it should be noted that this procedure was similar both in the experimental and control condition. In addition, in contrast with procedures where the group is assigned by the experimenter, it allowed individuals with mixed origins (one Italian and one immigrant parent) to self-determine psychological belonging, in line with the idea that feeling member of a group is sufficient to activate intergroup processes (Tajfel & Turner, 1979).

A further point to note is that outgroup attitudes and IOS were assessed by single items. However, since 1-item thermometer measures for attitudes (Lolliot et al., 2015) and 1-item pictorial measures for IOS (Cameron et al., 2006; Vezzali et al., 2012) are often used in contact research, we are confident that these tools captured the measurement of the variables efficiently.

In terms of generalization of effects, the larger category of immigrants was used as the target-group for majority participants. However, further research should test similar hypotheses by considering different target-groups (e.g., disabled or homosexual people) or specific immigrant categories (e.g., individuals with African or Asian origins), in order to provide external validity to present results.

Finally, we acknowledge that our control condition was not ideal. Indeed, participants in the vicarious contact condition may have been put in a good mood by watching the videos - with actors acting friendly with one another - before completing the questionnaires, while videos were shown only after filling the questionnaire to participants in the control condition. However, we believe that, since we did not find a direct effect of the intervention, but an affect moderated by presence of intercultural friendships in the video, it is unlikely that our results are due to a positive mood induction for participants in the vicarious contact condition. In addition, having a more appropriate control condition, where participants watched videos of friendships between members of the same group before answering to the questionnaires, was not practically realizable, since all school students had been informed about the competition on intercultural friendships in order to increase the realism of the video activity.

To conclude, direct contact can inform the development of highly engaging and successful vicarious contact interventions in educational settings. This can be an effective and practical way to use smaller-scale strategies in order to create larger-scale interventions to improve intergroup relations. Theorists and practitioners should work together on how to combine direct and indirect contact methods, in order to conduct large-scale interventions that positively affect the largest number of individuals possible and make prejudice-reduction programs maximally effective.

Footnotes

1. We retained 41 participants of mixed origin (Italian-immigrant) who self-identified as either Italian (33) or immigrant (8). The general pattern of results does not change when excluding these 41 participants. Additional analyses are available from the first author.
2. Originally, eight stereotypical traits were included in the questionnaire. Unfortunately, due to technical issues, the trait “bad” was not recorded.
3. The 485 students came from four different schools, and students from the same school watched the same videos. Thus, students were nested within schools, and the moderator variable (presence of intercultural friendships in the videos) varied between schools. However, we could not conduct multilevel analysis, due to the low number of schools. To control for independence of data, we conducted preliminary analysis calculating intraclass correlations (ICCs) and school-level variance of dependent variables. ICCs were very low ($< .02$), showing that less than 2% of variance is due to the nested structure of data. School-level variance was not significant for negative outgroup stereotypes and contact behavioral intentions ($ps \geq .333$), and was significant for outgroup attitudes, but in this case the effect was very small ($ICC = .004, \sigma^2 = 0.021, SE = 0.006, p = .001$).
4. Additional analyses revealed that the pattern of results did not change when including age, sex and number of videos presented in each school as covariates.

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

Measure	Condition				<i>t</i> (483)	Cohen's <i>d</i>	Correlations among variables					
	Experimental (<i>N</i> = 236)		Control (<i>N</i> = 249)				1	2	3	4	5	6
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>								
1. Outgroup attitudes	6.27	2.30	5.95	2.18	1.57	0.14	-	-.69***	.70***	.42***	-.20***	-.43***
2. Negative outgroup stereotypes	2.97	0.65	3.04	0.68	1.05	0.10	-.52***	-	-.65***	-.41***	.12 [†]	.28***
3. Contact behavioral intentions	3.32	1.03	3.24	1.04	0.83	0.08	.63***	-.65***	-	.53***	-.18**	-.56***
4. IOS	3.21	1.29	3.00	1.29	1.77 [†]	0.16	.44***	-.36***	.48***	-	-.16*	-.41***
5. Intergroup anxiety	1.63	0.79	1.69	0.75	0.76	0.08	-.19**	.21***	-.21***	-.22***	-	.33***
6. Fear of rejection by the outgroup	2.66	0.98	2.61	0.92	0.58	0.05	-.31***	.32***	-.51***	-.32***	.34***	-

Note. The response scale for all measures ranged from 1 to 5, with the exception of the measure of outgroup attitudes, which ranged from 0 to 10. Correlations for the control condition are above the diagonal; correlations for the experimental condition are below the diagonal.

[†] $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 2. Hierarchical regressions testing the impact of Condition depending on Presence of intercultural friendships on dependent variables.

<i>First step</i>	Outgroup attitudes	Negative outgroup stereotypes	Contact behavioral intentions	IOS	Intergroup anxiety	Fear of rejection by the outgroup
Condition (1 = experimental, - 1 = control)	0.16 (0.10)	-0.03 (.03)	0.04 (0.05)	0.10 [†] (0.06)	-0.03 (0.04)	0.03 (0.04)
Presence of intercultural friendships	-0.66* (0.31)	0.25** (.09)	-0.36* (0.14)	0.09 (0.18)	-0.12 (0.11)	0.61*** (0.13)
<i>F</i>	3.47*	4.32*	3.41*	1.68	0.90	11.20***
<i>F</i> change	-					
<i>Second step</i>						
Condition (1 = experimental, - 1 = control)	0.16 (0.10)	-0.03 (0.03)	0.04 (0.05)	0.10 [†] (0.06)	-0.03 (.04)	0.02 (0.04)
Presence of intercultural friendships	-0.60 [†] (0.31)	0.24** (0.09)	-0.34* (0.14)	0.10 (0.18)	-0.13 (0.11)	0.60*** (.013)
Condition × Presence of intercultural friendships	0.97** (0.31)	-0.22* (0.09)	0.33* (0.14)	0.32 [†] (0.18)	-0.14 (0.11)	-0.24 [†] (0.13)
<i>F</i>	5.62***	4.86**	4.09**	2.18 [†]	1.18	8.64***
<i>F</i> change	9.81**	5.86*	5.40*	3.17 [†]	1.73	3.41 [†]

Note. Non-standardized regression coefficients are reported; standard errors are shown in parentheses. [†] $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$

Table 3. Hierarchical regressions testing the impact of Condition and IOS depending on Presence of intercultural friendships on dependent variables.

	Outgroup attitudes	Negative outgroup stereotypes	Contact behavioral intentions
Condition (1 = experimental, - 1 = control)	.08 (.09)	-.01 (.03)	-.00 (.04)
Presence of intercultural friendships	-.68* (.28)	.26** (.08)	-.38** (.12)
Condition × Presence of intercultural friendships	.73** (.28)	-.16 [†] (.08)	.20 (.12)
IOS	.74*** (.07)	-.20*** (.02)	.40*** (.03)
<i>F</i>	32.31***	25.71***	45.68***

Note. Non-standardized regression coefficients are reported; standard errors are shown in parentheses. [†] $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 4. Conditional indirect effects of vicarious contact on dependent variables via IOS (mediator) for different levels of Presence of intercultural friendships in the videos (moderator) (2,000 bootstrap resamples).

Level of Presence of intercultural friendships in the videos	Dependent variables					
	Outgroup attitudes		Negative outgroup stereotypes		Contact behavioral intentions	
	95% Confidence interval	Effect (SE)	95% Confidence interval	Effect (SE)	95% Confidence interval	Effect (SE)
Low (-1 SD)	-.124 / .116	-.00 (.06)	-.033 / .033	.00 (.02)	-.072 / .069	-.00 (.04)
High (+1 SD)	.029 / .289	.15 (.07)	-.077 / -.010	-.04 (.02)	.014 / .156	.08 (.03)