

CROSS-GROUP FRIENDSHIPS, SOCIAL DOMINANCE ORIENTATION AND SECONDARY TRANSFER EFFECT

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Despite the impressive supportive evidence, the contact hypothesis (Allport, 1954) does not specify whether the positive effects following contact with a primary outgroup generalize to attitudes toward a secondary outgroup uninvolved in the contact situation. This type of generalization has been referred to as “secondary transfer effect” (Pettigrew, 2009). Participants were Italian high-school students ($N = 140$). We tested whether friendship with immigrants was associated with more positive attitudes toward both immigrants and disabled people, over and above the effects of Social Dominance Orientation (SDO; Sidanius & Pratto, 1999). Results revealed that cross-group friendships and SDO were related (positively and negatively, respectively) with the willingness to engage in contact behaviors with immigrants. In addition, the effects of friendship with immigrants and SDO generalized to attitudes toward the disabled, assessed with an evaluation thermometer, via perspective-taking and desired closeness to immigrants. We discuss the theoretical and practical implications of the findings.

Key words: Cross-group friendship; Social dominance orientation (SDO); Perspective-taking; Intergroup contact; Intergroup relations.

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INTRODUCTION

The study of prejudice and of its antecedents is one of the most popular themes among social psychologists. Since prejudice is a widespread phenomenon concerning several different social groups, there is extensive literature investigating the possible ways of reducing it. A strategy for improving relations between groups that has received consistent attention by scholars is represented by intergroup contact. According to the contact hypothesis (Allport, 1954), friendly encounters between members of different groups, especially when they happen under optimal conditions (equal status, cooperation for shared goals, institutional support), can diminish prejudice. However, although there is evidence that contact effects generalize across situations and from known outgroup members to the general outgroup category (e.g., Capozza, Vezzali, Trifiletti, Falvo, & Favara, 2010; Vezzali, Capozza, Mari, & Hichy, 2007; Vezzali, Capozza, & Pasin, 2009; Voci & Hewstone, 2003), only a few studies investigated whether generalization also occurs for outgroups uninvolved in the contact setting. This type of generalization has been referred to by Pettigrew (2009) as “secondary transfer effect.” The primary aim of this study is to examine whether the positive effects of a special form of contact, that is, friendships with stigmatized group members, generalize to a different devalued category. In particular, we investigated

whether Italian students' positive attitudes toward immigrants, following contact with immigrant friends, extend to attitudes toward the disabled. In addition, we examined perspective-taking and intergroup attitudes as possible underlying processes.

An additional aim is to evaluate the effects of one of the most disruptive individual difference variables for intergroup relations identified by social psychologists, namely, Social Dominance Orientation (SDO; Sidanius & Pratto, 1999). Specifically, we will examine contact effects by statistically controlling for the effects of SDO on attitudes toward immigrants and toward the disabled. We will also test perspective-taking as a variable underlying the effects of SDO.

It is the first time, to our knowledge, that the secondary transfer effect is examined by testing the simultaneous effects of cross-group friendships and SDO. Moreover, no study to date has yet tested perspective-taking following cross-group friendships and SDO as a variable allowing the emergence of the secondary transfer effect.

CROSS-GROUP FRIENDSHIP AND SECONDARY TRANSFER EFFECT

There is now consistent evidence demonstrating that intergroup contact is a strong predictor of reduced prejudice (see Pettigrew & Tropp, 2006). However, an important practical limitation to the benefits of intergroup contact concerns the fact that it cannot be applied simultaneously to different stigmatized categories. In other words, if contact with a specific outgroup improves attitudes only toward the members of this outgroup, then practitioners would need as many contact groups as is the number of outgroup categories toward whom prejudice should be diminished. Pettigrew (1997) suggested that positive contact effects may generalize from one outgroup to outgroup categories uninvolved in the encounter situation, and referred to this type of generalization as "secondary transfer effect."

Despite the impressive amount of empirical evidence showing the benefits of intergroup contact, only a small portion of studies investigated the secondary transfer effect. In Pettigrew and Tropp's (2006) meta-analysis, only 12 out of 515 studies tested the emergence of the secondary transfer effect, thus demonstrating that research has largely neglected the examination of generalization to uninvolved outgroups. Notwithstanding the little available evidence, there is reason to believe that positive attitudes stemming from intergroup contact generalize to attitudes toward outgroups not present within the contact setting (e.g., Eller & Abrams, 2004; Pettigrew, 2009; Van Laar, Levin, Sinclair, & Sidanius, 2005; Weigert, 1976). Tausch and colleagues (2010) conducted four studies, considering the relationships between Greek Cypriots and Turkish Cypriots in Cyprus, between Catholics and Protestants in Northern Ireland, between Whites/Blacks and Hispanics in the United States. The results provided strong support for the existence of the secondary transfer effect, by showing that improved intergroup attitudes following contact with a primary outgroup generalized to attitudes toward a secondary outgroup. By adopting a longitudinal design, the authors demonstrated a causal relation between contact with the primary outgroup and reduced prejudice toward the secondary outgroup (for other studies investigating the secondary transfer effect with longitudinal designs, see Eller & Abrams, 2004; Pettigrew, 2009; Van Laar et al., 2005).

A potential limit of the secondary transfer effect is that generalization may depend on the fact that those who have more contact with a devalued outgroup have also more contact with other stigmatized groups. Only few studies addressed this limitation, by statistically controlling for prior contact

with the secondary outgroup (Tausch et al., 2010; Van Laar et al., 2005; Weigert, 1976). In this study, we will test generalization to the disabled by controlling for the number of disabled friends.

As highlighted by Allport (1954) and Amir (1969), contact is maximally effective at reducing prejudice when Allport's conditions are present within the encounter situation (see also Pettigrew & Tropp, 2006). Pettigrew (1997) proposed that cross-group friendship is a special form of high qualitative contact that meets all of optimal conditions. Consistently, he examined a sample of 3,806 participants, belonging to the majority group of four European countries (France, Great Britain, the Netherlands, West Germany). The results showed that intergroup friendship was a strong predictor of reduced prejudice toward minority groups. There is now consistent evidence concerning the beneficial effects of cross-group friendships on intergroup relations (e.g., Christ et al., 2010; Turner, Hewstone, Voci, & Vonofakou, 2008; for a review, see Turner, Hewstone, Voci, Paolini, & Christ, 2007). To our knowledge, however, only two studies tested the emergence of the secondary transfer effect as a function of cross-group friendship. In the above-mentioned study by Pettigrew (1997), contact with friends of a primary outgroup reduced prejudice toward a variety of different national and ethnic groups. Tausch and collaborators (2010, Study 3) investigated whether the number of Hispanic friends of White and Black American students was associated with attitudes toward Vietnamese and Indian people.

Previous studies on the secondary transfer effects mainly investigated whether the effects of contact with a national or an ethnic outgroup extend to a different national or ethnic outgroup uninvolved in the contact situation. A notable exception is represented by Pettigrew (2009). The author considered a German national probability sample and found that the positive effects of contact with foreigners generalized to Muslims, Jews, homosexuals, the homeless and non-traditional women. Generalization was stronger for Muslims, the homeless and homosexuals than for the other groups. Tausch et al (2010, Studies 2 and 4) found generalization of contact effects from an ethno-religious outgroup (Catholics/Protestants) to a quite dissimilar group, namely, racial minorities. In contrast, Harwood and collaborators (Harwood, Paolini, Joyce, Rubin, & Arroyo, 2011) found that the effects of imagined contact ("the mental simulation of a social interaction with a member or members of an outgroup category"; Crisp & Turner, 2009, p. 234; for a recent review, see Crisp, Husnu, Meleady, Stathi, & Turner, 2010; for an application in the Italian context, see Vezzali, Capozza, Giovannini, & Stathi, 2011) spread only to similar outgroups. Thus, there are no clear indications on whether the secondary transfer effect can be applied only to secondary outgroups similar to the primary outgroup, or if it also concerns generalization to dissimilar outgroups. It should be noted, however, that generalization to dissimilar outgroup was present when considering the effects of direct contact (Pettigrew, 2009; Tausch et al., 2010, Studies 2 and 4), whereas it was virtually absent when considering a special form of indirect contact (i.e., imagined contact; Harwood et al., 2011), whose effects are assumed to be weaker than those of face-to-face contact (see Crisp et al., 2010). In the present study, we will examine whether the effects of contact with immigrants generalize to attitudes toward a dissimilar stigmatized group, that is, to the disabled.

PROCESSES UNDERLYING THE SECONDARY TRANSFER EFFECT

One flaw of previous research on the secondary transfer effect is the general lack of studies examining its underlying processes, with few exceptions (Eller & Abrams, 2004; Pettigrew,

2009; Tausch et al., 2010). In the present study, we test two variables as potential processes: perspective-taking and intergroup attitudes.

Perspective-taking is the cognitive side of empathy and consists in the ability of assuming the perspective adopted by another person (see Stephan & Finlay, 1999). Several studies show that perspective-taking has beneficial effects on intergroup relations (e.g., Batson, 2010; Galinsky & Ku, 2004; see Galinsky, Ku, & Wang, 2005, for a review). On the basis of the research demonstrating the mediator role of cognitive and affective intergroup empathy (for a meta-analysis, see Pettigrew & Tropp, 2008), we expect that having immigrant friends will increase the ability to understand their perspective, which in turn should improve attitudes toward both immigrants and the disabled. The choice to consider cognitive, and not affective empathy, lies in the fact that we think that the ability of assuming the others' perspective may be crucial to explain the secondary transfer effect, compared to the understanding of outgroup members' feelings. Indeed, understanding how a stigmatized group (i.e., immigrants) see the world may help to understand how other stigmatized, although dissimilar outgroups (i.e., the disabled) face daily difficulties and problems related to their devalued group membership, in turn improving attitudes toward them.

The second variable under investigation is represented by attitudes toward the primary outgroup (immigrants). Two studies provided initial evidence for attitude generalization as the process allowing the emergence of the secondary transfer effect. Tausch and colleagues (2010) found that attitudes toward the primary outgroup mediated generalization on improved attitudes toward secondary outgroups in all their four studies. Pettigrew (2009) showed that attitudes toward foreigners mediated the relationship between contact with foreigners and attitudes toward both homosexuals and the homeless in Germany.

An additional mediator considered by research on the secondary transfer effect is ingroup reappraisal. The basic idea is that contact can help distancing from the ingroup, in turn reducing prejudice toward several outgroups (see Pettigrew, 1998). Pettigrew (2009) found that reduced identification partially mediated the effects of contact with foreigners on attitudes toward homeless people and homosexuals. However, Eller and Abrams (2004) and Tausch et al. (2010) found little evidence for this process. Given that we tested generalization to a very dissimilar secondary outgroup and that it was unlikely that reduced identification with the Italian group would improve attitudes toward the disabled (also, many disabled are Italians, so there would be a confounding in considering what is ingroup and what is outgroup), ingroup reappraisal was not tested as a mediating process in the present study.

Our hypothesis is that contact with immigrants will improve attitudes toward the disabled through both perspective-taking and attitudes toward immigrants.

SOCIAL DOMINANCE ORIENTATION AND PREJUDICE

In the present study, SDO was tested as a further variable associated with prejudice, in addition to intergroup contact. SDO can be defined as a general orientation toward the support for unequal relationships among salient social groups (Sidanius & Pratto, 1999). It is generally considered as a personality variable with a high degree of temporal stability, although it depends on many factors, such as socialization experiences and membership salience. People with high levels

of SDO endorse traits of aggressivity, vindictiveness, tough-mindedness, coldness (e.g., Ekehammar, Akrami, Gylje, & Zakrisson, 2004), and are especially concerned with the maintenance of power differentials between groups. SDO is an important antecedent of negative intergroup attitudes and is associated with several types of group-based prejudices (Pratto, Sidanius, & Levin, 2006).

Surprisingly, despite the large body of research investigating the detrimental consequences of SDO on intergroup relations, only a few studies assessed its effects on attitudes toward a group generally stigmatized in our society such as the disabled. The little available evidence shows that, predictably, SDO is associated with more negative attitudes toward the disabled (e.g., Brandes & Crowson, 2009; Caldwell, 2007; Ekehammar et al., 2004). The effects, however, are generally weak. Moreover, we are aware of only a few studies analyzing the relation between SDO and empathy (Dickins & Sergeant, 2008; Pratto, Sidanius, Stallworth, & Malle, 1994; Vezzali & Giovannini, 2010); there are no studies, to our knowledge, exploring the relation between SDO and cognitive empathy (i.e., perspective-taking). On the basis of the reviewed evidence, we anticipate that SDO will be associated with more negative attitudes toward immigrants and the disabled and with reduced perspective-taking. However, since the effects of SDO on attitude toward the disabled may be weak or null, we acknowledge the possibility of an indirect effect: we predict that SDO will worsen attitudes toward the disabled via reduced perspective-taking and more negative attitudes toward immigrants. Indeed, based on the evidence that attitudes toward different outgroups can be associated (Akrami, Ekehammar, & Bergh, 2011), if SDO is related with reduced understanding of immigrants' point of view (i.e., perspective-taking) and more negative attitudes toward immigrants that, in turn, are associated with attitudes toward the disabled, it is possible to anticipate an indirect effect of SDO on attitudes toward the disabled.

THE PRESENT STUDY

Italian high-school students completed a questionnaire assessing: the number of immigrant friends and of disabled friends, perspective-taking toward immigrants, desired closeness to immigrants, evaluation of the disabled. We chose to assess attitudes toward immigrants and the disabled with different measures, so as to reduce the possibility that results are due to shared method variance.

To recap, we make the following hypotheses.

H1: perspective-taking toward immigrants should mediate the effects of contact with immigrants on desired closeness to immigrants.

H2: contact with immigrants should improve attitudes toward the disabled via perspective-taking and attitudes toward immigrants.

H3: SDO should reduce desired closeness to immigrants via perspective-taking toward immigrants.

H4: SDO, which is generally associated with attitudes concerning ethnic groups, may have an indirect effect on the evaluation of the disabled, via perspective-taking and desired closeness to immigrants.

METHOD

Participants and Procedure

Participants were 140 Italian high-school students enrolled in mixed classes of a Northern Italian city (36 males, 102 females; two did not indicate gender). Age ranged from 14 to 21 years (Mean age = 16.65 years, $SD = 1.36$). Participants were administered a questionnaire during classes.

Measures

Cross-group friendship with immigrants and the disabled. To assess cross-group friendship, we asked participants how many immigrant friends they had, on a scale ranging from 1 (*none*) to 5 (*more than six*).¹ To control that the effects of contact with immigrants did not depend on friendships with the disabled, participants also indicated, by using the same response scale, the number of their disabled friends.

SDO. We administered the Italian adaptation of the SDO₆ scale (Sidanius & Pratto, 1999), developed by Aiello and collaborators (Aiello, Chirumbolo, Leone, & Pratto, 2005), consisting of 16 items. The 5-step scale ranged from 1 (*I strongly disagree*) to 5 (*I strongly agree*); 3 was the neutral point. The 16 items were averaged in a reliable index ($\alpha = .73$): the higher the score, the stronger the support for social inequality.

Perspective-taking toward immigrants. Two items were adapted from Aberson and Haag (2007): “I understand the way immigrants see the world”; “I think I see the immigrants’ point of view with respect to many problems.” The 5-step scale ranged from 1 (*not at all*) to 5 (*very much*). The two items were averaged to obtain a single index of perspective taking toward immigrants ($r = .55$, $p < .001$), with higher scores reflecting a stronger ability to understand immigrants’ perspective.

Desired closeness to immigrants. The measure of desired closeness to immigrants was adapted by Esses and Dovidio (2002). We used five items, assessing to what extent participants were willing to disclose personal information to an immigrant, accepting him/her as a neighbor, close friend, classmate, professor. We used a 5-step scale, ranging from 1 (*not at all*) to 5 (*very much*). Responses were coded so that higher scores reflect more willingness to engage in contact behaviors with the outgroup and, thus, less prejudice. The five items were averaged in a single index of desired closeness to immigrants ($\alpha = .92$).

Evaluation of the disabled. To assess the evaluation of the disabled, we used the evaluation thermometer measure. Participants rated their feelings toward the disabled on a scale ranging from 0 (*extremely unfavorable*) to 100 (*extremely favorable*), with higher scores denoting more favorableness toward the disabled.

RESULTS

Introductory Analyses

Means and standard deviations of measures are presented in Table 1. As can be noted, participants had almost three-four immigrant friends. However, contact with the disabled was

low, as suggested by the fact that respondents reported on average to have less than one disabled friend. SDO was moderately low; the mean score was reliably lower than the midpoint of the scale (3), $t(139) = 16.03, p < .001$. Also perspective-taking toward immigrants was not very pronounced, and was lower than 3, $t(139) = 7.43, p < .001$ (see Table 1).

TABLE 1
 Means and standard deviations of measures

Measure	<i>M</i>	<i>SD</i>
Cross-group friendships with immigrants	3.01	1.33
Cross-group friendships with the disabled	1.60	0.67
SDO	2.23	0.57
Perspective-taking toward immigrants	2.30	1.11
Desired closeness to immigrants	2.82	1.15
Evaluation of the disabled	75.89	24.30

Note. The scale is from 1 to 5 for all items, with the exception of the measure of evaluation of the disabled, ranging from 0 to 100.

Attitudes toward immigrants were moderately negative. Indeed, as shown in Table 1, the mean score was lower than the central point of the scale, although the difference was only marginally significant, $t(139) = 1.80, p < .08$. In contrast, attitudes toward the disabled were very positive and much higher than the neutral point of the scale used (50), $t(139) = 12.60, p < .001$.

Measurement Model

Before testing predictions, the convergent and discriminant validity of the measures used was evaluated (LISREL 8.71; Jöreskog & Sörbom, 2004). We tested a model with six latent variables: cross-group friendship with immigrants, cross-group friendship with the disabled, SDO, perspective-taking toward immigrants, desired closeness to immigrants, evaluation of the disabled. In the factor model, contact with immigrants and the disabled and evaluation of the disabled were measured by one indicator (corresponding to the original item measuring the constructs; error variance was fixed to zero); perspective-taking toward immigrants was measured by two indicators, corresponding to the two original items assessing perspective-taking; for the measures of SDO and desired closeness to immigrants, we computed two parcels, following the procedure of item-to-construct balance suggested by Little, Cunningham, Shahar, and Widaman (2002). Analyses were performed on the covariance matrix (Cudeck, 1989). The goodness-of-fit of the model was assessed using the chi-square test, the root-mean-square error of approximation (RMSEA), the standardized root-mean-square residual (SRMR), and the comparative fit index (CFI). An acceptable fit to the data is indicated by a non-significant chi-square, a χ^2/df ratio of less than 3, an RMSEA and an SRMR equal or less than .08, and a CFI equal or greater than .95 (Hu & Bentler, 1999).

The model fitted the data well: $\chi^2(15) = 17.07, p = .31; \chi^2/df = 1.14; RMSEA = .024; SRMR = .029; CFI = 1.00$. Convergent validity was demonstrated by the fact that each indicator

loaded on the respective factor ($\lambda_{xs} > .64$, $ps < .001$). Regarding discriminant validity, correlations between latent variables were either non-significant or different from 1, $p < .05$. The highest ϕ s coefficients concerned: perspective-taking toward immigrants and desired closeness to immigrants ($\phi = .67$, $p < .001$); SDO and desired closeness to immigrants ($\phi = -.41$, $p < .001$); the independent variables of our path model were uncorrelated. The correlations among latent variables are reported in Table 2.

TABLE 2
 Correlations among latent variables

	1	2	3	4	5	6
1. Cross-group friendships with immigrants	–					
2. Cross-group friendships with the disabled	.10	–				
3. SDO	-.04	-.08	–			
4. Perspective-taking toward immigrants	.27**	-.06	-.31**	–		
5. Desired closeness to immigrants	.37***	.04	-.41***	.67***	–	
6. Evaluation of the disabled	.04	.22**	-.14	.24*	.25**	–

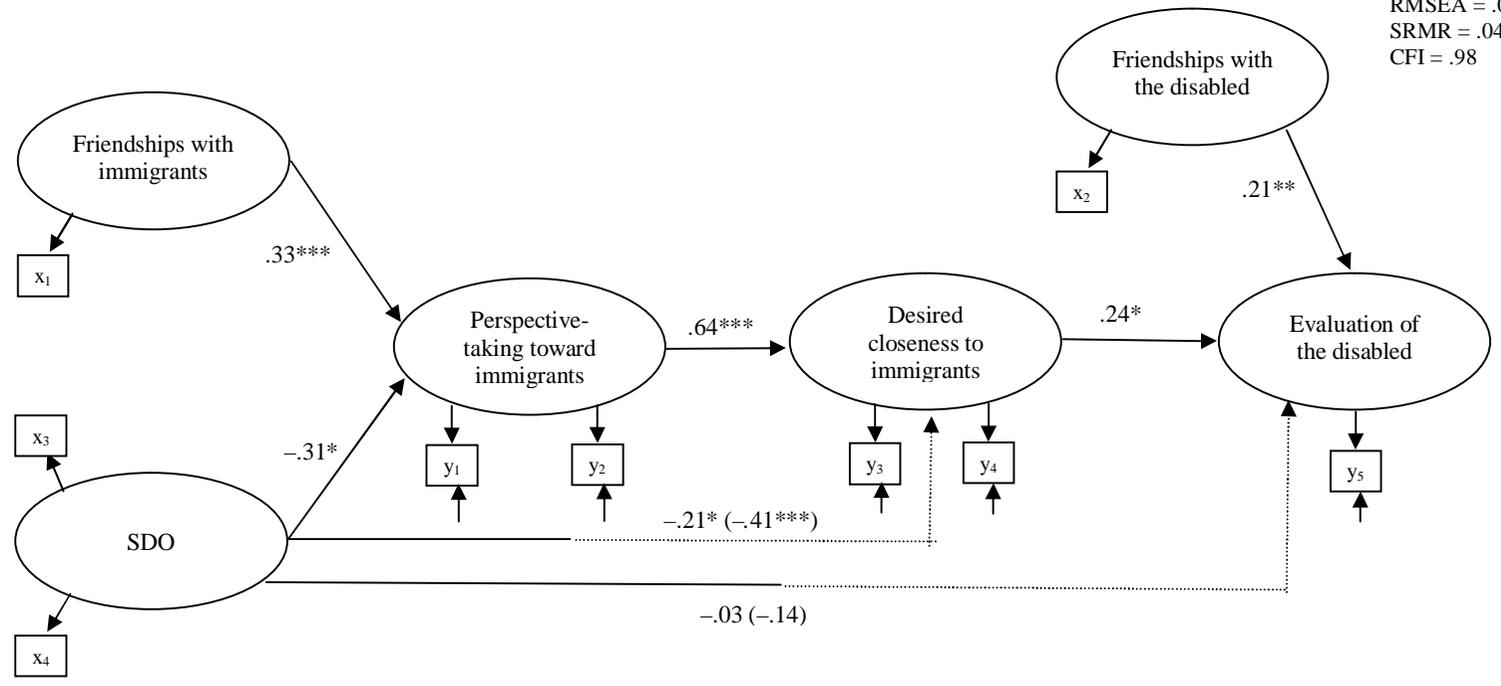
* $p < .05$; ** $p \leq .01$; *** $p < .001$.

Path Model

To test predictions, a path analysis with latent variables was conducted (LISREL 8.71; Jöreskog & Sörbom, 2004). We were interested in testing whether contact with immigrants indirectly affects desired closeness to immigrants via perspective-taking toward immigrants, and if the effects generalize to evaluation of the disabled via both perspective-taking and desired closeness to immigrants. To the extent that we anticipated that the effects of contact with immigrants on outcome variables would be totally explained by perspective-taking toward immigrants and desired closeness to immigrants, the direct paths from contact with immigrants to desired closeness to immigrants and evaluation of the disabled were not included. The effects of SDO on perspective-taking toward immigrants, desired closeness to immigrants and evaluation of the disabled were controlled for (we also tested whether SDO indirectly affects desired closeness to immigrants and evaluation of the disabled; see Hypothesis 4). Finally, we statistically controlled for the effects of contact with the disabled on the evaluation of the disabled. Results are presented in Figure 1.

The model fitted the data well: $\chi^2(20) = 28.03$, $p = .11$; $\chi^2/df = 1.40$; RMSEA = .05; SRMR = .046; CFI = .98. As shown in Figure 1, friendships with immigrants was associated positively ($\beta = .33$, $p < .001$) and SDO negatively ($\beta = -.31$, $p < .05$) with perspective-taking toward immigrants. In turn, perspective-taking toward immigrants had a positive association with desired closeness to the immigrant category ($\beta = .64$, $p < .001$). In addition, desired closeness to

$\chi^2(20) = 28.03, p = .11$
 $\chi^2/df = 1.40$
 RMSEA = .05
 SRMR = .046
 CFI = .98



Note. Correlations: friendships with immigrants–friendships with the disabled, $r = .10, ns$; friendships with immigrants–SDO, $r = -.05, ns$; friendships with the disabled–SDO, $r = -.08, ns$. The values reported between parentheses correspond to the original correlation between SDO and the two criterion variables (desired closeness to immigrants, evaluation of the disabled).
 $*p < .05$; $**p \leq .01$; $***p < .001$.

FIGURE 1
 Path model with latent variables (completely standardized solution).

immigrants was positively associated with the evaluation of the disabled ($\beta = .24, p < .05$). The direct path from SDO to desired closeness to immigrants was reliable ($\beta = -.21, p < .05$), whereas the association between SDO and the evaluation of the disabled was non-significant ($\beta = -.03, ns$). Finally, friendship with the disabled was positively related to evaluation of the disabled ($\beta = .21, p = .01$).²

To test the emergence of indirect effects, bootstrapping procedures were applied (Preacher & Hayes, 2008; Shrout & Bolger, 2002); analyses were based on 2,000 bootstrap samples. With bootstrapping procedures, a 95% confidence interval is computed around the path from the predictor to the criterion variable through the indirect process. An indirect effect can be said to exist if zero is excluded from this interval, $p < .05$. Consistent with H1 and H3, the indirect effects of friendships with immigrants and SDO on desired closeness to immigrants via perspective-taking toward immigrants were significant (bias corrected and accelerated confidence intervals ranging from .05 to .39, and from -2.91 to $-.09, ps < .05$, respectively). Furthermore, in line with H2 and H4, the indirect effects of friendships with immigrants and SDO on the evaluation of the disabled, via both perspective-taking and desired closeness to immigrants, were reliable (bias corrected and accelerated confidence intervals ranging from .24 to 4.35, and from -18.04 to $-.40, ps < .05$, respectively).

DISCUSSION

We conducted a field study to investigate whether having immigrant friends led Italian high-school students to evaluate more positively the disabled category, over and above the detrimental effects of SDO. An additional aim was that of examining the processes driving the effects of cross-group friendships and SDO.

First of all, consistent with previous research, our findings support the powerful role of cross-group friendships in ameliorating intergroup relations (Turner et al., 2007). Indeed, having immigrant friends was related to a greater willingness to engage in contact behaviors with immigrants. Moreover, as predicted in our first hypothesis, the effect of cross-group friendship on attitudes toward immigrants was mediated by perspective-taking. Despite the fact that previous studies have shown the mediator role of perspective-taking between contact and intergroup attitudes (e.g., Aberson & Haag, 2007; Pettigrew & Tropp, 2008), this is the first time, to our knowledge, that this variable has been tested as a process underlying the effects of cross-group friendship.

More relevant to the present work, we found that the positive effects following friendships with immigrants extended to attitudes toward the disabled. This result is in line with the literature on the secondary transfer effect, showing that contact with a primary outgroup has positive effects on intergroup attitudes that generalize to outgroups uninvolved in the contact situation (e.g., Pettigrew, 2009; Tausch et al., 2010; Van Laar et al., 2005).

Only two studies had previously demonstrated that the secondary transfer effect can be applied also to cross-group friendship (Pettigrew, 1997; Tausch et al., 2010, Study 3). In the present research, in addition to evaluating the secondary transfer effect for cross-group friendships, we examined the processes underlying the effect. Our findings provide evidence for one variable identified by previous research, that is, attitudes toward the primary outgroup (Pettigrew, 2009; Tausch et al., 2010). Moreover, we showed that also perspective-taking is important for allowing the generalization of contact effects. Specifically, in line with Hypothesis 2, we found that cross-

group friendship was positively associated with desired closeness to immigrants via perspective-taking toward immigrants; in turn, the two variables allowed generalization to attitudes toward the disabled.

It is worth noting that the effects of cross-group friendships generalized to an outgroup uninvolved in the contact situation over and above the negative effects of SDO. Supportive of previous research, SDO was associated with more negative attitudes toward immigrants (Pratto et al., 2006). Furthermore, not surprisingly, it was negatively related to the ability to adopt the immigrants' perspective. Perspective-taking also emerged as a mediator of the effects of SDO on attitudes toward immigrants, as anticipated in our third hypothesis: the support for social inequality was associated with a reduced tendency to understand immigrants' point of view, which in turn was related to an increased desire to avoid contact with immigrants. Despite the fact that the effects of SDO on attitudes toward the disabled were unreliable, consistent with Hypothesis 4, SDO had an *indirect* effect on the evaluation of the disabled, via perspective-taking and attitudes toward immigrants.

We believe our findings, concerning the generalization of the positive effects of friendships with immigrants to attitudes toward the disabled, are particularly noteworthy for at least four reasons. First, they demonstrate that the secondary transfer effect can be applied to a stigmatized secondary outgroup very dissimilar from the primary outgroup. Second, they were obtained by statistically controlling the pervasive negative effects of such a powerful variable as SDO. Third, in contrast to the majority of studies on the secondary transfer effect (for exceptions, see Tausch et al., 2010; Van Laar et al., 2005; Weigert, 1976) and to the two previous studies that examined the secondary transfer effect by using cross-group friendship as predictor (Pettigrew, 1997; Tausch et al., 2010, Study 3), our results were obtained by controlling for prior contact with the disabled. This control helps to rule out the alternative explanation concerning the possibility that participants that have more friends in the primary outgroup have also more friends in the secondary outgroup. Fourth, we measured attitudes toward immigrants and the disabled in a different way, so as to reduce the possible influence of social desirable responding and shared method variance.

The present study has important practical implications. Although in many Italian high schools the number of immigrants is rapidly growing, disabled students generally constitute a small minority, compared to the non-disabled. In addition, they often have personal teachers and do not attend all mainstream lessons. Thus, opportunities for a high-quality contact, such as making cross-group friends, are higher with respect to the relation between Italians and immigrants, rather than for the relationship between the non-disabled and the disabled. Our findings suggest that forming friendships with a minority group, such as immigrants, helps to understand diversity, by promoting more understanding of their situation and by favoring more positive attitudes toward them, indirectly ameliorating attitudes toward other minorities, such as the disabled. This is not to say that interventions for reducing prejudice toward the disabled are not necessary. Rather, creating opportunities for contact with immigrants can be a successful first step to improve attitudes also toward the disabled, which can then be reinforced by specific interventions centered on the disabled and based for instance on indirect contact (e.g., Vezzali, Stathi, & Giovannini, 2011).

We acknowledge some limitations. First, data are correlational. However, there is evidence that contact has causal effects on prejudice reduction (e.g., Vezzali, Giovannini, & Capo-

zza, 2010). Second, attitudes toward immigrants were only moderately negative, and attitudes toward the disabled were moderately positive. Future studies should evaluate the secondary transfer effect by also considering more conflictual intergroup contexts.

In conclusion, cross-group friendship has positive effects on intergroup relations, that generalize to attitudes toward outgroups uninvolved in the contact situation and that counteract the detrimental effects of SDO.

NOTES

1. The other degrees were: 2 = *one or two*, 3 = *three or four*, 4 = *five or six*.
2. We tested a model including the direct effects of contact on outcome variables. Results revealed that contact with immigrants was significantly associated with desired closeness to immigrants ($\beta = .22, p < .01$), but not to evaluation of the disabled ($\beta = -.09, ns$).

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