

When extended contact opens the door to future contact: Testing the effects of extended contact on attitudes and intergroup expectancies in majority and minority groups

Group Processes & Intergroup Relations

14(2) 161–173

© The Author(s) 2011

Reprints and permission: sagepub.

co.uk/journalsPermissions.nav

DOI: 10.1177/1368430210391119

gpir.sagepub.com

Angel Gómez,¹ Linda R. Tropp,² and Saulo Fernández¹

Abstract

The present research tests whether extended contact can predict positive intergroup expectancies, as well as positive intergroup attitudes, among majority and minority group members. Our results replicate and extend prior work by showing that extended contact predicts both positive intergroup attitudes and intergroup expectancies among both majority (Spanish) and minority (immigrant) participants, even when controlling for direct friendship and the quantity and quality of prior intergroup contact. These effects are partially mediated by intergroup anxiety, perceived ingroup norms, and perceived outgroup norms, and the positive effects of extended contact on intergroup attitudes were also partially mediated by the inclusion of ingroup in the self. Additionally, the mediating role of outgroup norms was stronger among immigrant participants than among Spanish participants. Implications of these findings and the value of extended contact for promoting positive intergroup expectancies and preparing people for future contact are discussed.

Keywords

extended contact, intergroup expectancies, intergroup anxiety, intergroup contact, norms, cross-group friendships, minority–majority relations.

Paper received 23 December 2009; revised version accepted 27 October 2010.

One of the most recent and fruitful extensions of intergroup contact research involves an indirect form of contact, commonly referred to as the extended contact effect (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). Extended contact research stipulates that knowing that ingroup members have outgroup members as

¹ Universidad Nacional de Educación a Distancia, UNED

² University of Massachusetts Amherst

Corresponding author:

Angel Gómez, UNED, C/ Juan del Rosal 10, Madrid, 28040, Spain.

Email: agomez@psi.uned.es

friends can promote more positive attitudes toward the outgroup as a whole. Over the last decade, researchers around the world have demonstrated that extended contact can promote tolerance toward foreigners (Pettigrew, Christ, Wagner, & Stellmacher, 2007), improve attitudes toward refugees (Cameron, Rutland, Brown, & Douch, 2006) and stigmatized groups (Cameron & Rutland, 2006; Cameron, Rutland, & Brown, 2007), and reduce hostility between Catholics and Protestants in Northern Ireland (Paolini, Hewstone, Cairns, & Voci, 2004).

Yet what is still unknown is whether extended contact can similarly promote positive shifts in people's expectancies for contact with outgroup members. Emerging research reveals growing interest in the concerns and expectations that group members bring to cross-group interactions (Devine & Vasquez, 1998; Frey & Tropp, 2006; Shelton, Richeson, & Vorauer, 2006; Vorauer, 2006). Much of this work notes that negative expectancies for contact often evolve from concerns about being rejected or having difficulty navigating cross-group interactions (e.g., Plant & Devine, 2003; Shelton & Richeson, 2005). Importantly, these concerns may persist even when people have positive intergroup attitudes, suggesting that distinct processes come into play when people consider engaging in contact with members of other groups, as compared to when they report their attitudes toward those groups (Vorauer, 2008). Thus, separate from the question of whether extended contact improves intergroup attitudes (Cameron & Rutland, 2006; Wright et al., 1997), the present research examines whether extended contact can encourage positive expectancies for future intergroup contact.

The present research also tests whether extended contact has similar effects on intergroup attitudes and intergroup expectancies among both majority and minority group members. Prior work indicates that direct contact typically reveals stronger effects for majority group members than minority group members (see Tropp & Pettigrew, 2005), but research has not adequately tested whether extended contact will show differential effects for members of majority

and minority groups. To the best of our knowledge, only three prior studies have examined extended contact effects from the perspective of minority groups (see Eller, Abrams, Viki, & Imara, 2007; Turner, Hewstone, & Voci, 2007; Wright et al., 1997). These studies generally replicate findings obtained with majority groups in showing that extended contact predicts improved intergroup attitudes (Eller et al., 2007; Wright et al., 1997), and that anxiety mediates extended contact effects (Turner et al., 2007). Still, little is known regarding the effects of extended contact on minority group members' expectations for contact with the majority group. This research extension is important as other work demonstrates that processes underlying contact and intergroup expectancies can often diverge for members of minority and majority groups (see Devine & Vasquez, 1998; Dovidio, Gaertner, & Saguy, 2009; Tropp & Pettigrew, 2005). In particular, minority expectations for contact often depend more strongly on the extent to which they believe their groups are valued by the outgroup, relative to the effects observed among majority group members (Tropp & Bianchi, 2006). Correspondingly, it could be that perceived outgroup norms would be especially relevant for predicting intergroup expectancies among minority participants.

Mediators of extended contact effects

Moreover, research has not yet tested whether known mediators of extended contact may reveal divergent patterns of prediction among members of majority and minority groups, and for distinct outcomes such as intergroup attitudes and intergroup expectancies. Building upon the theorizing of Wright et al. (1997), Turner, Hewstone, Voci and Vonafakou (2008) demonstrated that four processes simultaneously mediate relationships between extended contact and intergroup attitudes: anxiety reduction, inclusion of outgroup in the self, perceived ingroup, and outgroup norms. Relatedly, we can consider the extent to which these mediators might bear relevance to predicting

majority and minority group members' intergroup expectancies.

Like direct contact (Pettigrew & Tropp, 2008), extended contact should be especially effective in reducing anxiety by making cross-group interactions seem more common and familiar, which in turn should encourage more positive intergroup expectancies (Paolini, et al., 2004; Turner et al., 2008). It is also conceivable that a sense of cross-group closeness and blurring of group boundaries, often referred to in terms of the *inclusion of outgroup in the self* (Aron, McLaughlin-Volpe, Mashek, Lewandowski, Wright, & Aron, 2004; Wright et al., 1997) may lead us to feel more positively about interacting with outgroup members. Perceived attitudes of ingroup members toward the outgroup should shape our attitudes and orientations toward outgroup members, as we often look to fellow ingroup members as guides for intergroup attitudes and behavior (Abrams & Hogg, 1990; Jetten, Spears, & Manstead, 1997). Perceived outgroup norms should further contribute to extended contact effects, as our own interest in intergroup contact is often predicted by the extent to which we believe outgroup members are willing to engage with members of our group (Shelton & Richeson, 2005; Tropp & Bianchi, 2006).

Importantly, Turner et al. (2008) found that each of these four mediators independently predicted intergroup attitudes, and these results persisted even when controlling for direct contact. What is still unknown, however, is (a) whether these different mediators might play similar or different roles when predicting intergroup expectancies as compared to when predicting intergroup attitudes, and (b) whether the mediated effects of extended contact on intergroup expectancies and attitudes might vary among members of majority and minority groups.

The present research

In sum, the present research investigates whether knowing ingroup members with outgroup friends (extended contact) can predict positive intergroup expectancies among members of both

majority and minority groups. Like previously established relationships between extended contact and intergroup attitudes, we expect that greater extended contact will generally be associated with more positive intergroup expectancies. We also test the extent to which mediators such as anxiety, inclusion of outgroup in the self, ingroup norms and outgroup norms contribute to accounting for relationships between extended contact and positive intergroup expectancies. As such, our work replicates and extends prior research (e.g., Turner et al., 2008), by examining the effects of extended contact on both intergroup attitudes and intergroup expectancies among both majority and minority group members. We also expect to replicate previous findings that direct contact yields stronger effects for majority than minority group members (e.g., Tropp & Pettigrew, 2005), while testing whether extended contact has differential effects on intergroup attitudes and expectancies among members of majority and minority groups.

We examine these issues in the context of relations between Spaniards and immigrants in Spain. Effects of extended contact on intergroup expectancies are particularly relevant to this context, as the societal proportion of immigrants has risen dramatically over the last decade (from 2.28% in 2000 to 12.20% in 2010), thereby making contact and knowledge of cross-group friendships more common between Spaniards and immigrants.

For the present study, we expected that greater extended contact would generally predict more positive intergroup expectancies, in line with prior findings regarding the relationships between extended contact and intergroup attitudes. We also tested whether the effect of extended contact on positive intergroup expectancies would be mediated by the same variables that have been shown to mediate relationships between extended contact and intergroup attitudes (i.e., intergroup anxiety, inclusion of outgroup in the self, ingroup and outgroup norms). Overall, while we expected to observe similar patterns of mediation across the variables for minority and majority participants, we also predicted that outgroup norms

would be a stronger predictor of intergroup expectancies for minority participants than for majority participants.

Method

Participants and procedure

Three hundred and twenty two high school students completed a questionnaire during class with permission of their school and parents, 187 native-born Spaniards (89 girls and 98 boys, mean age = 15.89, $SD = 1.13$), and 135 students that immigrated to Spain from 19 different countries (84 girls and 51 boys, mean age = 15.82, $SD = 1.06$). Most of the immigrants came from South America (79.5%), and the rest came from Eastern Europe (11%), Asia (8.8%) and North Africa (0.7%).

Participants were informed that the study concerned relations between Spaniards and immigrants and completed a questionnaire. The questionnaire included measures of *extended contact* (independent variable), *intergroup attitudes* and *intergroup expectancies* (dependent variables), three additional variables used as controls in data analysis (*direct friendships with outgroup members*, and the *quantity* and *quality* of their intergroup contact), and the four proposed mediators (*inclusion of outgroup in the self*, *intergroup anxiety*, *ingroup norms* and *outgroup norms*). These measures were adapted separately for Spanish and immigrant participants. Specifically, Spaniards were asked to report on their contact experiences with immigrants and their knowledge of Spaniards who have immigrant friends, and immigrants were asked to report on their contact experiences with Spaniards, and their knowledge of immigrants who have Spanish friends.

Extended contact was assessed by asking participants to indicate the number of ingroup members they know who have outgroup friends (Wright et al., 1997). Based on responses to a pilot study, participants were asked to use a 7-point scale (0, from 1 to 2, from 3 to 5, from 6 to 8, from 9 to 11, from 12 to 14, and more than 14).

Intergroup attitudes were measured using a *feeling thermometer* (Haddock, Zanna, & Esses, 1993). Participants indicated their overall attitude

towards outgroup members on a scale ranging from 0° (= totally unfavourable) to 100° (= totally favourable).

Positive intergroup expectancies were assessed using an adapted version of Tropp's (2003) scale (see also Méndez, Gómez & Tropp, 2007). Using a 7-point scale ranging from 1 (totally disagree) to 7 (totally agree), respondents indicated their agreement with eight items such as 'I think I would get along with most [Spaniards/immigrants]', 'I think I would have a lot in common with most [Spaniards/immigrants]' ($\alpha = .88$ and $.85$ for Spaniards and immigrants respectively).

Direct friendship was measured by asking participants how many outgroup members they have as friends. To enhance the likelihood that participants estimated accurately the number of outgroup friends, they were asked to write the initial of the first name for each outgroup friend, as well as to report the total number.

Quantity of contact was assessed by asking participants how frequently they have contact with outgroup members using a 7-point scale ranging from 1 (*never*) to 7 (*daily*).

Quality of contact was measured using seven items scored on a scale from 1 (*totally disagree*) to 7 (*totally agree*), in which participants were asked the extent to which they consider their contact with outgroup members to be *agreeable*, *egalitarian*, *cooperative*, *voluntary*, *as equals*, *personally important* and *intimate*. A factor analysis showed that these items loaded onto one factor and were substantially interrelated, ($\alpha = .82$ and $.87$ for Spaniards and immigrants respectively).

Proposed mediators

Inclusion of outgroup in the self was measured by a single pictorial item (see Aron, Aron, & Smollan, 1992; Wright, Aron, & Tropp, 2002) consisting of seven pairs of overlapping circles. Participants were asked to select the pair of circles that best represents their relationship with the outgroup, ranging from 1 (no overlap) to 7 (a great deal of overlap). The greater the overlap between the circles, the greater the inclusion of the outgroup in the self.

Intergroup anxiety was measured using eight items adapted from Stephan and Stephan (1985). Participants indicated how they feel when they interact with outgroup members (i.e., *anxious, threatened, apprehensive, awkward, comfortable, confident, trusting* and *at ease*; items 5–8 were reverse-scored) on a scale ranging from 1 (totally disagree) to 7 (totally agree). Item responses were averaged so that higher mean scores correspond to higher levels of intergroup anxiety ($\alpha = .85$ and $.73$ for Spaniards and immigrants respectively).

Ingroup norms were measured using 5 items on a 7-point scale ranging from 1 (totally disagree) to 7 (totally agree), asking participants the extent to which they think their (best friends, friends in general, family, teachers, larger society), would consider it something positive to have outgroup members as friends ($\alpha = .90$ and $.84$ for Spaniards and immigrants respectively).

Outgroup norms were measured using two items on a 7-point scale from 1 (totally disagree) to 7 (totally agree), asking participants the extent to which they think outgroup members would be interested in being friends, and comfortable, with ingroup members ($\alpha = .87$ and $.89$ for Spaniards and immigrants respectively).

Analytic strategy

We first correlated scores on our measured variables and then conducted multiple regression analyses to examine how extended contact and the control variables predicted both intergroup attitudes and intergroup expectancies. Additionally, we included participant group membership (Spaniards vs. immigrants) as a predictor in the regression analyses, along with its correspondent interactions with extended contact and direct friendship. Finally, we conducted two bootstrapping analyses to test whether the effects of extended contact on positive intergroup attitudes and intergroup expectancies are mediated by inclusion of outgroup in the self, intergroup anxiety, and ingroup and outgroup norms, and we tested whether these mediational paths vary for minority and majority group members.

Results and discussion

Correlations and regression analysis

As shown in Table 1, positive intergroup expectancies and intergroup attitudes were positively, yet only moderately, correlated ($r = .41$ and $.38$ for Spaniards and immigrants respectively). Both intergroup expectancies and intergroup attitudes correlated significantly with extended contact and the four proposed mediators, as well as with direct friendship and contact quality. However, it is interesting to note that the correlations between intergroup expectancies and anxiety ($r = -.61$ for Spaniards, $r = -.60$ for immigrants) are stronger than the correlations between intergroup attitudes and anxiety ($r = -.38$ for Spaniards and $r = -.39$ for immigrants, $\zeta = 2.95$, $p < .001$ and $\zeta = 2.26$, $p < .01$, respectively). Similarly, the correlations between intergroup expectancies and outgroup norms ($r = .53$ for Spaniards, $r = .58$ for immigrants) are stronger than the correlations between intergroup attitudes and outgroup norms ($r = .39$ for Spaniards and $r = .17$ for immigrants, $\zeta = 1.70$, $p < .05$ and $\zeta = 3.96$, $p < .001$, respectively). These findings suggest that the reduced anxiety and enhanced perceptions of outgroup norms that can be achieved through extended contact may be even more important for shaping group members' expectancies for future intergroup contact than their demonstrated effects on attitudes toward the outgroup.

Additionally, when controlling for extended contact, the correlation between direct friendship and intergroup attitudes was stronger for Spanish participants than for immigrant participants, $\zeta = 1.68$, $p < .05$. This finding is consistent with prior work showing that the effects of direct contact tend to be stronger among majority groups than among minority groups (e.g., Tropp & Pettigrew, 2005). However, when controlling for direct friendship, no significant difference emerged in the correlations between extended contact and intergroup attitudes for Spanish and immigrant participants, $\zeta = -.80$, $p = .19$. Thus, while the effects of direct contact tend to diverge for majority and minority group members, the positive effects of

Table 1. Correlations among the independent, dependent, mediator, and control variables among Spaniards and immigrants respondents

Measures	Spaniards		Immigrants		1		2		3		4		5		6		7		8		9		10	
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)																				
1. Extended contact	2.29 (2.26)	2.29 (.62)			.39***	.59***	.32***	-.08	.36***	.31***	-.36***	.30***	.33***											
2. Intergroup attitudes	68.70 (21.91)	68.12 (21.91)	.47***		.41***	.41***	.54***	.01	.30***	.32***	-.36***	.39***	.39***											
3. Intergroup expectancies	4.59 (1.27)	4.87 (1.05)	.51***	.38***	.39***	.39***	.32***	-.01	.49***	.37***	-.61***	.53***	.53***											
4. Direct friendship	3.28 (2.69)	5.67 (2.43)	.41***	.45***	.41***	.45***	.45***	-.01	.17*	.37***	-.20**	.18*	.20**											
5. Contact quantity	2.90 (1.22)	5.78 (1.00)	.20*	.20*	.20*	.20*	.27**	-.12	-.07	.03	.04	.05	.05											
6. Contact quality	4.42 (1.27)	4.92 (1.51)	.28**	.40***	.40***	.40***	.34***	.21*	.07	.46***	-.38***	.44***	.42***											
7. IOS	4.20 (1.86)	5.20 (1.63)	-.10	.20*	.20*	.20*	-.25**	.18*	.07	.18*	-.33***	.30***	.35***											
8. Intergroup anxiety	2.76 (1.09)	3.00 (.84)	-.27***	.38***	.38***	.38***	-.60***	-.05	-.19*	.18*	-.52***	-.48***	-.53***											
9. Ingroup norms	5.15 (1.30)	5.61 (1.29)	.38***	.48***	.48***	.48***	.21*	.07	.26**	-.15	-.52***	-.48***	-.53***											
10. Outgroup norms	4.70 (1.31)	4.79 (1.32)	.43***	.17*	.17*	.17*	.44***	.05	.34***	-.17	-.53***	-.48***	-.53***											

Note: Correlations for Spaniards are listed above the diagonal, and correlations for immigrants are listed below the diagonal; * $p < .05$; ** $p < .01$; *** $p < .001$.

extended contact appear to be comparable for members of minority and majority groups.

We proceeded to conduct two hierarchical regression analyses in which we used extended contact, participant group (Spanish vs. immigrant), and our three control variables as predictors of either intergroup attitudes or intergroup expectancies at the first step of analysis; then, we introduced the extended contact x participant group interaction term and the direct friendship x participant group interaction term as predictors at the second step. As suggested by Aiken and West (1991), scores on all continuous variables were centered prior to analysis, and the group variable was contrast coded (-1 = immigrants, 1 = Spaniards).

As shown in Table 2, the main effect of extended contact was significant at the first step of analysis, with greater extended contact being associated with more positive intergroup attitudes. Additionally, there were significant main effects of direct friendship and contact quality, such that the greater number of cross-group friendships and quality of prior contact, the more positive intergroup attitudes participants reported. At the second step of analysis, the direct friendship x participant group interaction significantly contributed to predicting intergroup attitudes. Generally, greater numbers of cross-group friends corresponded with more positive intergroup attitudes among Spaniards, $B = 11.92$, $\beta = .54$, $sr = .54$, $t(185) = 8.82$, $p < .001$, and immigrants, $B = 7.43$, $\beta = .39$, $sr = .39$, $t(133) = 4.88$, $p < .001$; however, the effect of direct friendship was significantly stronger among Spaniards than among immigrants, $\chi = 1.73$, $p < .05$. By contrast, the extended contact x participant group interaction did not contribute further to predicting intergroup attitudes beyond what could be predicted by the direct friendship x group interaction and the variables at the first step.

Results of the regression analysis predicting intergroup expectancies are provided in Table 3. The main effect of extended contact was significant at the first step of analysis, with greater extended contact being associated with more positive intergroup expectancies. A main effect of group also revealed that immigrants tended to

Table 2. Summary of hierarchical regression analysis predicting intergroup attitudes

Predictor variables	Step 1			Step 2		
	<i>B</i>	β	<i>sr</i>	<i>B</i>	β	<i>sr</i>
Extended contact	5.34***	.26***	.23***	5.62***	.27***	.23***
Group (immigrants vs Spaniards)	.98	.05	.05	1.05	.05	.05
Direct friendship	-8.04***	.39***	.36***	7.51***	.36***	-.33***
Contact quantity	-1.21	-.06	-.06	-.83	-.04	-.04
Contact quality	2.27*	.09*	.09*	2.29*	1.24*	.09*
Extended contact X group				-1.33	-.06	-.06
Direct friendship X group				2.62**	.13**	.12**
R ²		.32***			.34***	
R ² change		.32***			.14*	
F change		29.90***			3.28*	

Note: *B* = raw regression coefficient; β = standardized regression coefficient; *sr* = semi partial correlation; * $p < .05$; ** $p < .01$; *** $p < .001$.

have more positive intergroup expectancies, $M = 4.87$, $SD = 1.05$, than Spaniards, $M = 4.59$, $SD = 1.27$. Additionally, there were main effects of direct friendship and contact quality, such that the greater number of cross-group friendships and quality of prior contact, the more positive intergroup expectancies participants reported. At the second step of analysis, neither the extended contact x participant group interaction, nor the direct friendship x group interaction, contributed to predicting intergroup expectancies beyond what could be predicted by the variables at the first step.

Together, these findings indicate that greater extended contact is typically associated with more positive intergroup expectancies and more positive intergroup attitudes, and these overall trends were consistent across the Spanish and immigrant samples. Interestingly, immigrants on average reported significantly more positive intergroup expectancies than did Spaniards, while no significant group differences were observed for intergroup attitudes. Given their minority status in Spanish society, it may be that immigrants have more experience interacting with Spaniards than most Spaniards have interacting with immigrants (see Butler & Wilson, 1978 for a related argument), and this prior experience and familiarity contributes to more positive intergroup expectancies. Consistent with this interpretation, additional data in Table 1 show that immigrants reported greater mean levels of prior contact (both quantity and quality) and

numbers of cross-group friendships than Spanish participants. Related work suggests that people who have had prior positive contact and cross-group friendships typically have more positive expectancies for future contact (see Plant, 2004; Tropp, 2003), and that people's contact experiences are often more positive than they initially anticipate them to be (see Mallett, Wilson, & Gilbert, 2008). It is therefore understandable why immigrants, with greater degrees of prior positive contact, would tend to report more positive intergroup expectancies than Spaniards.

Tests of mediation

Next, we conducted mediation analyses to test whether the effects of extended contact on positive intergroup attitudes and intergroup expectancies were mediated by intergroup anxiety, inclusion of outgroup in the self, and perceived ingroup and outgroup norms, and whether patterns of mediation are similar or different among Spanish and immigrant participants. Using the SPSS macro provided by Preacher and Hayes (2008), we first compared in a multiple mediator model the indirect effects of our potential mediators on intergroup attitudes, to replicate findings from prior research (see Turner et al., 2008). As suggested by Preacher and Hayes (2008), we controlled for the main effects of direct friendship, contact quantity and contact quality by including

Table 3. Summary of hierarchical regression analysis predicting intergroup expectancies

Predictor variables	Step 1			Step 2		
	<i>B</i>	β	<i>sr</i>	<i>B</i>	β	<i>sr</i>
Extended contact	.62***	.52***	.48***	.60***	.51***	.44***
Group (immigrants vs Spaniards)	-.17***	-.14***	-.14***	-.17***	-.14***	-.13***
Direct friendship	.11*	.09*	.09*	.11*	.09*	.09*
Contact quantity	.08	.06	.06	.07	.05	.05
Contact quality	.40***	.29***	.26***	.40***	.29***	.27***
Extended contact X group				-.05	-.04	-.04
Direct friendship X group				-.04	-.04	-.03
R ²		.52***			.52***	
R ² Change		.52***			.00	
F Change		67.60***			.92	

Note: *B* = raw regression coefficient; β = standardized regression coefficient; *sr* = semi partial correlation; * $p < .05$; ** $p < .01$; *** $p < .001$.

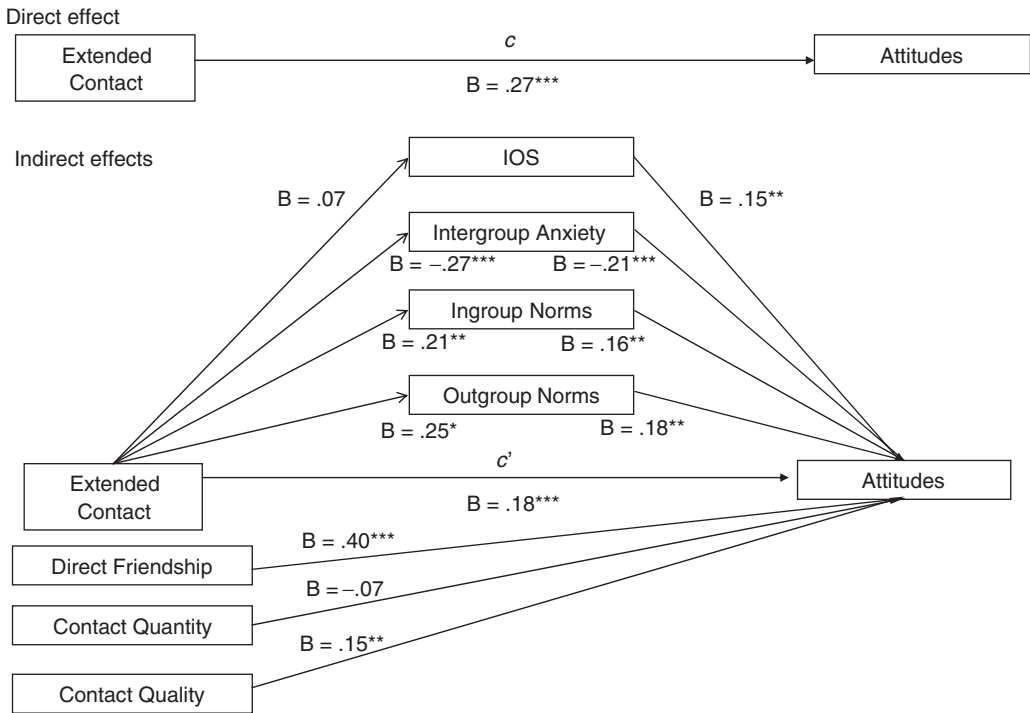


Figure 1. Extended contact and proposed mediators as predictors for intergroup attitudes while controlling for direct friendship, contact quantity and quality.

Note: 95% CI refers to the product of the paths that make up the indirect pathway: .0821 to .2622; * $p < .05$; ** $p < .01$; *** $p < .001$.

them as covariates in these analyses and tested the indirect effects through bootstrapping whereby confidence intervals that do not include zero

indicate significant mediation. Results for this model are depicted in Figure 1. Consistent with prior work, inclusion of outgroup in the self,

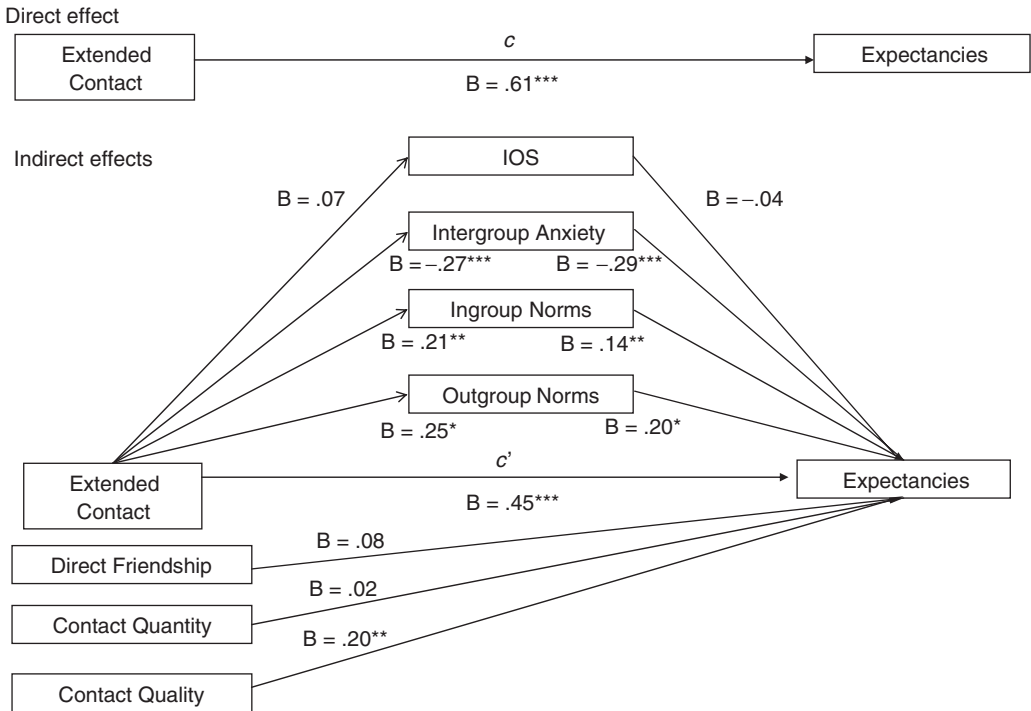


Figure 2. Extended contact and proposed mediators as predictors for intergroup expectancies while controlling for direct friendship, contact quantity and quality.
 Note: 95% CI refers to the product of the paths that make up the indirect pathway: .0977 to .2158; * $p < .05$; ** $p < .01$; *** $p < .001$.

intergroup anxiety, ingroup norms and outgroup norms all partially mediated the effect of extended contact on positive intergroup attitudes, even when controlling for the effects of direct friendship, contact quantity and contact quality (confidence intervals: .0016 to .0217 for inclusion of outgroup in the self, .1163 to .2337 for intergroup anxiety, .0029 to .0400 for ingroup norms and .0010 to .0423 for outgroup norms).

A parallel multiple mediator model was used to examine the indirect effects of our potential mediators on intergroup expectancies (see Figure 2). Results showed that intergroup anxiety, ingroup norms and outgroup norms all partially mediated the effect of extended contact on positive intergroup expectancies, even when controlling for direct friendship, contact quantity and contact quality (confidence intervals: .0421 to .1260 for intergroup anxiety, .0071 to .0612 for ingroup

norms, and .0207 to .0915 for outgroup norms). However, inclusion of outgroup in the self did not significantly mediate the effect of extended contact on positive intergroup expectancies (confidence intervals: -.0189 to .0019).

Supplementary analyses then tested whether these patterns of mediation were consistent for Spanish and immigrant participants. First, we conducted a series of multiple regression analyses using extended contact (centered), participant group (Spanish vs. immigrant, contrast coded) and their interaction to predict each of the mediators. A significant interaction between extended contact and participant group emerged for outgroup norms $B = -.13$, $\beta = -.13$, $t(318) = -2.46$, $p < .01$; outgroup norms were predicted significantly more strongly by extended contact among immigrants $B = .59$, $\beta = .35$, $t(320) = 6.78$, $p < .001$, than among Spaniards $B = .25$, $\beta = .18$, $t(320) = 3.29$,

$p < .001$, $\zeta = 5.32$, $p < .001$. No significant interactions between extended contact and participant group were found when predicting intergroup anxiety, ingroup norms, or inclusion of outgroup in the self, $p_s > .22$.

Next, we conducted multiple regressions to test each of the mediators and their correspondent interactions with participant group (Spanish vs. immigrant, contrast coded) as predictors for intergroup expectancies and intergroup attitudes. None of the interactions between the mediators and participant group were significant, $p_s > .18$.

Taken together, these findings indicate that while all four proposed mediators partially mediate the effect of extended contact on intergroup attitudes, only intergroup anxiety, ingroup norms and outgroup norms partially mediate the effect of extended contact on positive intergroup expectancies. As such, our results replicate those of Turner et al. (2008) showing the importance of these four mediators in the relationship between extended contact and intergroup attitudes, while also extending these findings by showing that the effects of these mediators are comparable for majority and minority group members. At the same time, while significantly correlated with intergroup expectancies, inclusion of outgroup in the self did not mediate the effect of extended contact on positive intergroup expectancies. There are at least two reasons why inclusion of outgroup in the self may not have emerged as a significant mediator between extended contact and intergroup expectancies. On a methodological level, while prior research has tested these mediated relationships using a single covariate (e.g., direct contact; e.g., Turner et al. 2008), we included three covariates in the present research, thereby creating a more stringent test for observing these mediated relationships. On a conceptual level, it could also be that including outgroup members in the self would be particularly relevant for one's intergroup attitudes in relation to known relationships between ingroup members and outgroup members, while it might bear less relevance to the prospect of interacting with unknown outgroup members as assessed by our measure of intergroup expectancies. Consistent with this

analysis, it is worthwhile to note that reduced intergroup anxiety emerged as an especially strong mediator between knowing that ingroup members have outgroup friends and having positive expectations for future interactions with outgroup members. Thus, for outcomes concerning relations with outgroup members, it is conceivable that anxiety reduction would serve as a more important mediator of extended contact effects than such mediators as the inclusion of outgroup in the self.

In addition, supplementary analyses indicate that outgroup norms more strongly predict the relationship between extended contact and intergroup expectancies in our minority sample of immigrants than in our majority sample of Spaniards. This finding is consistent with prior work showing that concerns and expectations associated with intergroup contact often diverge for members of minority and majority groups (Devine & Vasquez, 1998; Dovidio et al., 2009). In particular, minority group members are often carefully attuned to how they may be perceived and treated by the majority (Kramer & Messick, 1998), such that minority expectations for contact are more likely to depend on how outgroup members feel than majority expectations are (Tropp & Bianchi, 2006). Future research should continue to investigate potential points of divergence in minority and majority perspectives on extended contact, and direct contact, to enhance our understanding of the processes through which positive intergroup expectancies may be achieved for members of these different groups.

Conclusion

Whereas prior investigations have typically focused on the effects of extended contact on intergroup attitudes in majority samples, the present research replicates and extends this work by testing how extended contact predicts both intergroup expectancies and intergroup attitudes among members of both minority and majority groups. Our research with Spaniards and immigrants shows that extended contact can not only

promote positive intergroup attitudes among members of minority and majority groups, but it can positively shift their expectancies for future contact, even when controlling for direct friendship and quantity and quality of prior contact with outgroup members. In addition to replicating the finding that direct contact predicts intergroup attitudes more strongly among majority than minority group members (Pettigrew & Tropp, 2005), our results also show that extended contact predicts intergroup expectancies similarly for majority and minority group members. Thus, our research provides some of the first empirical evidence that extended contact can promote positive intergroup expectancies among members of both majority and minority groups, and together with other recent work (see Christ et al., 2010; Eller, Abrams, & Gómez, under review; Tam, Hewstone, Kenworthy, & Cairns, 2009), it indicates the important role that extended contact plays in preparing minority and majority group members for future intergroup contact.

An added strength of the present research is that we studied extended contact in the context of relations between Spaniards and immigrants in Spain, thereby broadening the range of societies in which extended contact effects have been examined. Yet, because we examined this issue only in the Spanish context, we cannot firmly say whether extended contact (and its mediators) would have comparable effects on intergroup expectancies and attitudes in other contexts. Future work should therefore test whether associations between extended contact and intergroup expectancies and attitudes differ across contexts with varying social relations between majority and minority groups.

Another limitation of our research is one that is shared with most prior studies of extended contact: namely, our findings are based on cross-sectional survey data, which makes it difficult to infer causal relationships between extended contact and positive intergroup expectancies and attitudes. We believe the robustness of our findings is supported by the generally high level of consistency in patterns of results across our majority and minority samples. Nonetheless, future research

should examine these relationships longitudinally, to allow for stronger causal inferences regarding the effects of extended contact on intergroup expectancies and attitudes among minority and majority group members. Furthermore, additional research is needed to understand the ways in which extended contact might be useful to prepare majority and minority group members for future intergroup contact (see Eller et al., under review), and how its effects on such interactional outcomes may differ from those commonly observed for attitudinal outcomes.

Acknowledgement

This research and the preparation of this article were supported by Research Fund Grant PSI2009-07008 from the Spanish Ministry of Science and Innovation to Ángel Gómez.

Note

- 1 Readers familiar with the popularized causal steps strategy from Baron and Kenny (1986) might argue that having a significant path from extended contact to inclusion of outgroup in the self would be a necessary condition for mediation. However, more recent approaches to testing mediation focus not on the significance of the individual paths, but on the significance of the product term (the path from the predictor to the mediator by the path mediator to the outcome measure, see Preacher & Hayes, 2008, p. 880).

References

- Abrams, D., & Hogg, M. A. (1990). Social identification, self-categorization, and social influence. *European Review of Social Psychology*, *1*, 195–228.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, *63*, 596–612.
- Aron, A., McLaughlin-Volpe, T., Mashek, D., Lewandowski, G., Wright, S. C., & Aron, E. N. (2004). Including close others in the self. *European Review of Social Psychology*, *15*, 101–132.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological

- research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173–1182.
- Butler, J. S., & Wilson, K. L. (1978). *The American Soldier revisited: Race relations and the military*. *Social Science Quarterly*, 59, 451–467.
- 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.
- Cameron, L., Rutland, A., & Brown, R. (2007). Promoting children's positive intergroup attitudes towards stigmatized groups: Extended contact and multiple classification skills training. *International Journal of Behavioral Development*, 31, 454–466.
- Cameron, L., Rutland, A., Brown, R., & Douch, R. (2006). Changing children's intergroup attitudes toward refugees: Testing different models of extended contact. *Child Development*, 77, 1208–1219.
- Christ, O., Hewstone, M., Tausch, N., Wagner, U., Voci, A., Hughes, J., & Cairns, E. (2010). Direct contact as a moderator of extended contact effects: Cross-sectional and longitudinal impact on outgroup attitudes, behavioral intentions, and attitude certainty. *Personality and Social Psychology Bulletin*. DOI: 10.1177/0146167210386969.
- Devine, P. G., & Vasquez, K. A. (1998). The rocky road to positive intergroup relations. In J. L. Eberhardt & S. T. Fiske (Eds.), *Confronting racism: The problem and the response* (pp. 234–262). Thousand Oaks, CA: Sage.
- Dovidio, J. F., Gaertner, S. L., & Saguy, T. (2009). Commonality and the complexity of 'we': Social attitudes and social change. *Personality and Social Psychology Review*, 13, 3–20.
- Eller, A., Abrams, D., & Gómez, Á. (under review). When does extended contact work best and what are its long-term effects?
- Eller, A., Abrams, D., Viki, G. T., & Imara, D. A. (2007). When my friend's friend is a police officer: Extended contact, crossed-categorization, and public-police relations of Black and White people. *South African Journal of Psychology*, 3, 783–802.
- Frey, F. E., & Tropp, L. R. (2006). Being seen as individuals versus as group members: Extending research on metaperception to intergroup contexts. *Personality and Social Psychology Review*, 10, 265–280.
- 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.
- Jetten, J., Spears, R., & Manstead, A. S. R. (1997). Distinctiveness threat and prototypicality: Combined effects on intergroup discrimination and collective self-esteem. *European Journal of Social Psychology*, 27, 635–657.
- Kramer, R. M., & Messick, D. M. (1998). Getting by with a little help from our enemies: Collective paranoia and its role in intergroup relations. In C. Sedikides, J. Schopler, & C. A. Insko (Eds.), *Intergroup cognition and intergroup behavior* (pp. 233–255). Mahwah, NJ: Erlbaum.
- Mallett, R. K., Wilson, T. D., & Gilbert, D. T. (2008). Expect the unexpected: Failure to anticipate similarities leads to an intergroup forecasting error. *Journal of Personality and Social Psychology*, 94, 265–277.
- Méndez, E., Gómez, A., & Tropp, L. (2007). The role of prototypicality and meta-stereotypes for intergroup relations. *International Journal of Psychology and Psychological Therapy*, 7, 189–200.
- Paolini, S., Hewstone, M., Cairns, E., & Voci, A. (2004). Effects of direct and indirect cross-group friendships on judgments of Catholics and Protestants in Northern Ireland: The mediating role of an anxiety-reduction mechanism. *Personality and Social Psychology Bulletin*, 30, 770–786.
- Pettigrew, T. F., Christ, O., Wagner, U., & Stellmacher, J. (2007). Direct and indirect intergroup contact effects on prejudice: A normative interpretation. *International Journal of Intercultural Relations*, 31, 411–425.
- Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38, 922–934.
- Plant, E. A. (2004). Responses to interracial interactions over time. *Personality and Social Psychology Bulletin*, 30, 1458–1471.
- Plant, E. A., & Devine, P. G. (2003). The antecedents and implications of interracial anxiety. *Personality and Social Psychology Bulletin*, 29, 790–801.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–891.
- Shelton, J. N., & Richeson, J. A. (2005). Intergroup contact and pluralistic ignorance. *Journal of Personality and Social Psychology*, 88, 91–107.

- Shelton, J. N., Richeson, J. A., & Vorauer, J. D. (2006). Threatened identities and interethnic interactions. *European Review of Social Psychology, 17*, 321–358.
- Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues 41*, 157–175.
- Tam, T., Hewstone, M., Kenworthy, J., & Cairns, E. (2009). Intergroup trust in Northern Ireland. *Personality and Social Psychology Bulletin, 1*, 45–59.
- Tropp, L. R. (2003). The psychological impact of prejudice: Implications for intergroup contact. *Group Processes and Intergroup Relations, 6*, 131–149.
- Tropp, L. R., & Bianchi, R. A. (2006). Valuing diversity and intergroup contact. *Journal of Social Issues, 62*, 533–551.
- Tropp, L. R., & Pettigrew, T. F. (2005). Relationships between intergroup contact and prejudice among minority and majority status groups. *Psychological Science, 16*, 951–957.
- Turner, R. N., Hewstone, M., & Voci, A. (2007). Reducing explicit and implicit outgroup prejudice via direct and extended contact: The mediating role of self-disclosure and intergroup anxiety. *Journal of Personality and Social Psychology, 93*, 369–388.
- Turner, R. N., Hewstone, M., Voci, A., & Vonofakou, C. (2008). A test of the extended intergroup 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.
- Vorauer, J. D. (2006). An information search model of evaluative concerns in intergroup interaction. *Psychological Review, 113*, 862–886.
- Vorauer, J. D. (2008). Unprejudiced and self-focused: When intergroup contact is experienced as being about the ingroup rather than the outgroup. *Journal of Experimental Social Psychology, 44*, 912–919.
- 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.
- Wright, S. C., Aron, A., & Tropp, L. R. (2002). Including others (and their groups) in the self: Self-expansion theory and intergroup relations. In J. P. Forgas & K. D. Williams (Eds.), *The social self: Cognitive, interpersonal, and intergroup perspectives* (pp. 343–363). Philadelphia, PA: Psychology Press.

Biographical notes

ÁNGEL GÓMEZ is Associate Professor of Psychology at the Universidad Nacional de Educación a Distancia (UNED, Madrid, Spain). His research focuses on the study of the perceptions that other individuals and groups have about ourselves and our groups, and the comparison with our own self-perceptions. He is interested in how this general process may produce different effects and consequences according to different lines of research: self-verification and verification of ingroup identity, identity fusion, meta-perceptions and meta-stereotypes. In addition, he explores the influence of these processes for important strategies of prejudice reduction, such as direct and extended contact and recategorization.

LINDA R. TROPP is Associate Professor of Psychology and Director of the Psychology of Peace and Violence Program at the University of Massachusetts Amherst. Her research concerns how members of different groups approach and experience contact with each other, and how group differences in status affect cross-group relations. She has received early career awards from the International Society of Political Psychology and the Society for the Teaching of Psychology, and with Thomas Pettigrew, the Allport Intergroup Relations Prize from the Society for the Psychological Study of Social Issues. Tropp is a Fellow of the American Psychological Association, the Society of Experimental Social Psychology, and the Society for the Psychological Study of Social Issues.

SAULO FERNANDEZ is Assistant Professor of Social Psychology at the Universidad Nacional de Educación a Distancia (UNED, Madrid, Spain). His research focuses on the negative consequences of belonging to socially stigmatized groups and the coping strategies affected individuals take to minimize the harm to well-being. His recently defended dissertation addressed the social stigmatization of people with disproportionate short stature (dwarfism).