Cross-national in-group favoritism in prosocial behavior: Evidence from Latin and North America

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Abstract

As individuals from different nations increasingly interact with each other, research on national in-group favoritism becomes particularly vital. In a cross-national, large-scale study (N = 915) including representative samples from four Latin American nations (Chile, Peru, Colombia, Venezuela) and the USA, we explore differences regarding nationality-based in-group favoritism. In-group favoritism is assessed through differences in prosocial behavior toward persons from the own nation as compared to persons from other nations in fully incentivized one-shot dictator games. We find strong evidence for national in-group favoritism for the overall sample, but also significant differences among national subsamples. Latin Americans show more national in-group favoritism compared to US Americans (interacting with Latin Americans). While US Americans mainly follow an equal split norm (for both in- and out-group interactions), Latin Americans do so only in in-group interactions. The magnitude of in-group favoritism increases with social distance toward the out-group.

Keywords: in-group favoritism, prosociality, social distance, cross-cultural differences, Latin America

1 Introduction

Within the scope of globalization and international migration, the perception of national borders is shifting and individuals increasingly interact with people of different nationalities. Consequently, understanding the behavior of individuals toward members of national in- and out-groups becomes more and more important. Up to this point, relatively little is known concerning the determinants of cross-cultural in-group favoritism and potential differences among nations; most laboratory studies are conducted within single nations. We investigate the magnitude of in-group favoritism in prosocial behavior in a fully incentivized, cross-national context, including national samples from four Latin American nations (Chile, Peru, Colombia, and Venezuela) and the USA (N = 915) that are representative for the respective nation in terms of age and sex.

In-group favoritism represents a well-established and often replicated phenomenon in social psychology and behavioral economics (see Balliet, Wu & De Dreu, 2014 for a recent meta-analysis on this topic) and has been investigated in a wide range of behaviors and scenarios: Individuals ascribe more positive characteristics to in- than out-group members (Mullen, Brown & Smith, 1992), tend to make more internal (external) attributions for positive in-group (out-group) behavior (Pettigrew, 1979; Popan, Kenworthy, Barden & Griffiths, 2010), and are more motivated to accomplish in-group goals at work (Ellemers, De Gilder & Haslam, 2004). Particularly in the context of prosocial behavior and cooperative decision-making, it has been repeatedly demonstrated that individuals consistently favor their in-group: People show more helping behavior toward in- rather than toward out-group members in violent situations (M. Levine, Cassidy, Brazier & Reicher, 2002) or after natural disasters (M. Levine & Thompson, 2004; Cuddy, Rock & Norton, 2007; Kogut & Ritov, 2007) and are more willing to accept personal costs to benefit in- compared to out-group members in social dilemma tasks (Balliet et al., 2014; Goette, Huffman & Meier, 2006; Simpson, 2006; Bornstein & Ben-Yossef, 1994). In-group membership of an interaction partner appears to increase prosocial behavior even in young children (Fehr, Bernhard & Rockenbach, 2008) and non-human species (e.g., De Waal, Leimgruber & Greenberg, 2008). The most prominent theoretical approach to the phenomenon of in-group favoritism is social identity theory. Within this approach, it is assumed that the motivating principle underlying in-group favoritism is the need to attain and preserve a positive self-concept by maximizing the positive distinctiveness of the in-group in contrast to an out-group (Tajfel & Turner, 1979; Hewstone, Rubin & Willis, 2002).

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One way to achieve this distinctiveness is to show behavior that positively differentiates the in-group from the out-group (i.e., in-group favoring behavior) (Balliet et al., 2014).

In-group bias can be positive or detrimental for human interaction. On the one hand, such positive bias toward in-group members can help the in-group by increasing its cohesion, performance, and the individual fitness of its members (Darwin, 1874). On the other hand, however, such intergroup biases can bear the risk of intense feelings of deprivation and resentment in out-groups, leading to intergroup discrimination and hostility between groups (Sherif & Sherif, 1953). In sum, in-group bias seems to be a combination of "in-group love" and "out-group hate" with the first being of primary importance (e.g., Halevy, Weisel & Bornstein, 2012). In the cross-national context, intergroup bias may have far-reaching consequences, such as the systematic segregation of minorities or the emergence of nationalistic tendencies. These violent outcomes are especially dangerous in times of massive migration, because they may reduce openness to individuals from other nations and thus prevent successful integration.

Individuals from different nations vary in many respects, one of which is the degree of prosocial behavior they display (Cnaan et al., 2012; R. V. Levine, Norenzayan & Philbrick, 2001; Luria, Cnaan & Boehm, 2014). In light of these findings, it is not surprising that individuals from different nations also show varying baseline levels of in-group favoritism in survey questions (Van de Vliert, 2010). Nations appear to differ in the extent to which they show more prosocial behavior toward national in-group members than to out-group members; some nations seem to display reduced national in-group favoritism or none at all (Liu et al., 2011; Fershtman, Gneezy & Verboven, 2005; Castro, 2008; Tanaka & Camerer, 2013; Dorrough & Glöckner, 2016; for a meta-analysis see R. Fischer & Derham, 2016).

The present study further investigates national in-group favoritism in prosocial behavior. We explore (research question [RQ] 1) whether effects of in-group favoritism generalize to a cross-national context and non-student samples in a fully incentivized task (for a discussion of problems using student samples only, see Falk, Meier & Zehnder, 2013; Henrich, Heine & Norenzayan, 2010). Our core dependent variable is the degree of preferring persons from the own nation over persons from other nations if nothing but the nationality is mutually known, which we refer to as national in-group favoritism. Specifically, we use representative samples of five nations and a dictator game (DG), in which people can give shares of their own money to anonymous other people (see Engel, 2011 for a meta-study on behavior in DGs). Furthermore, we explore differences concerning national in-group favoritism among nations (RQ2) and analyze factors that determine the degree of national in-group favoritism (RQ3). We focus on two sets of factors to explain observable behavior: (1) interaction characteristics, in particular perceived

social distance between interaction partners (RQ3a), cultural distance between nations (RQ3b), and context of the interaction that might activate a shared common in-group (RQ3c), as well as (2) individual characteristics such as social preferences (RQ3d), as well as age, sex, education and income as possible contaminating (control) factors.

1.1 Theoretical predictions and previous findings concerning our research questions

1.1.1 Social and cultural distance

In the context of national in-group favoritism, an important characteristic of the interactions is the relation between individual interaction partners and that between nations. Based on previous research, prosocial behavior can be expected to increase if the social distance between interaction partners is reduced so that people feel closer to each other (Hoffman, McCabe & Smith, 1996; Weisel & Böhm, 2015). There is evidence that at the same degree of social distance, subjects behave significantly more prosocially toward relatives (in-group) than toward non-relatives (out-group) suggesting that prosocial behavior is determined by group membership in addition to social distance (Rachlin & Jones, 2008). In the present study we investigated whether national in-group favoritism goes beyond effects that are conveyed by perceived social distance only, and whether the effect of social distance on behavior varies between in-group and out-group situations (RQ3a). Building on the finding that cultural (dis)similarity influences individuals' helping intentions and behavior (Siem & Stürmer, 2012), we additionally investigated the effect of cultural distance between nations on prosocial behavior (RQ3b). Therefore we calculated a cultural distance index based on the nation's scores on the Hofstede's cultural dimensions: individualism, power distance, masculinity, uncertainty avoidance, long-term orientation, and indulgence (Hofstede, Hofstede & Minkov, 2010).

1.1.2 Activation of a common superordinate identity

As a further potentially important characteristic of the interaction, we investigated the specific group context, which could trigger multiple (one or more) national identities. According to the Common In-group Identity Model (Gaertner & Dovidio, 2000), intergroup bias can be reduced if individuals are induced to perceive themselves no longer as members of separate groups, but as members of one common, more inclusive superordinate group. We assume that a common supranational in-group identity can become salient in interactions with national out-groups that share some common characteristics with the in-group, if another nation is included that does not share this characteristic. To be able to test this assumption, we aimed to select a set of nations that included on the one hand culturally similar nations and on

the other hand a very dissimilar nation whose mere presence should draw attention to the cultural similarity of the former. To this end, we investigated interactions among subjects from four Latin American countries (Chile, Peru, Colombia, and Venezuela) that have many cultural characteristics in common (e.g., language, long colonial history) and furthermore also share a common supranational Latin in-group identity. Additionally we included subjects from the USA, a nation which is culturally different from Latin American nations in many respects. Specifically, we varied the context of the interactions by including versus excluding the USA in the presented set of national out-groups in that Latin Americans either interacted with an US out-group member or not. Based on the Common In-group Identity Model (Gaertner & Dovidio, 2000) and the finding that similarity increases cooperation in individuals (I. Fischer, 2009; Mussweiler & Ockenfels, 2013), we assumed that Latin Americans will feel closer – i.e., more culturally similar – toward Latin American out-groups when the USA is present in the set of national out-groups. In turn, this should result in a decrease of in-group favoritism in interactions with Latin American out-group members (RQ3c).

1.1.3   Social Value Orientation

With respect to individual characteristics, we considered social preferences measured as social value orientation – the tendency to engage in behavior that is beneficial to others, even though it is costly for the self (Murphy & Ackermann, 2014; Liebrand & McClintock, 1988) – as a potential predictor for the extent of national in-group favoritism (RQ3d). Social preferences have been shown to be a valid predictor for prosocial behavior in general (Balliet, Parks & Joireman, 2009; but see Renkewitz, Fuchs & Fiedler, 2011 for a potential publication bias) and exhibit substantial variations in their global distribution across nations (Becker et al., 2015). Prior research that investigated the link between individuals' social preferences and in-group favoritism revealed inconsistent results. Past studies report that social preferences affect in-group favoritism with prosocial individuals displaying stronger in-group favoritism than proselfs (e.g., De Dreu, 2010; De Dreu, Dussel & Velden, 2015). However, a recent study does not support the influence of social preferences on in-group favoritism but only on prosocial behavior in general, irrespective of the interaction partner's group membership (Thielmann & Böhm, 2016). Given this mixed empirical evidence, we will test the relationship between social preferences and in-group favoritism in a cross-cultural context. Besides social preferences, we assess socio-demographic (i.e., age, sex, education) and socio-economic variables (i.e., income) as well as personal contact with people from the respective national out-groups.

2   Methods

To address RQ3c we needed a group of similar countries with a superordinate common identity and one rather dissimilar nation, which was supposed to make the common identity of the similar countries salient. As explained in the introduction of our article, the selection of four Latin American and one US American samples fits this demand. We based our selection of the specific Latin American countries on the availability from the panel provider Toluna that realized the recruitment of subjects. The sample size was determined before data collection and was based on sample availability and monetary resources. Further data, analysis scripts and materials (e.g., instructions for all national subsamples) are available at: osf.io/76bzq.

2.1   Subjects and Design

915 subjects (49% female; 18–84 years of age, $M = 40.47$) from five different nations took part in the experiment. The set of nations included four Latin American countries, namely Chile ($N = 201$), Peru ($N = 202$), Colombia ($N = 207$), and Venezuela ($N = 206$), as well as the USA ($N = 99$). Socio-demographic and socio-economic information for each national subsample are provided in *Appendix*, Table A1. Subjects were recruited via the professional online panel provider *Toluna* (http://www.toluna-group.com/de) and were population representative according to age and sex for the respective countries. Age filtering was based on four age categories (i.e., 18–24; 25–39; 40–54; 55–99). Subjects who failed to comply with the criteria concerning nationality or the nation specific age and sex criteria were excluded from further participation.

The experiment was based on a non-fully crossed 5 (nationality of dictator) x 5 (nationality of receiver) mixed within-between subjects design. The nationality of the dictator constituted our first quasi-experimental between-subjects factor. The nationality of the receiver was manipulated within subjects, but each individual was paired with four persons only (i.e., one person from the own nation and three persons from other nations). For the subjects from Latin America, the within-subjects factor of receiver nations also included the manipulation whether the three other persons were all from Latin America or also included a person from the USA, which we expected to activate the common in-group for Latin Americans. US subjects interacted with a national in-group member and persons from three (out of four) Latin American out-group nations in randomized order.

It took subjects about 15 minutes to complete the experiment and payments were contingent on behavior ranging from USD 1.75 to 2.90 (average USD 2.47). This comprised a base payment of USD 1.75, plus an incentivized bonus pay-
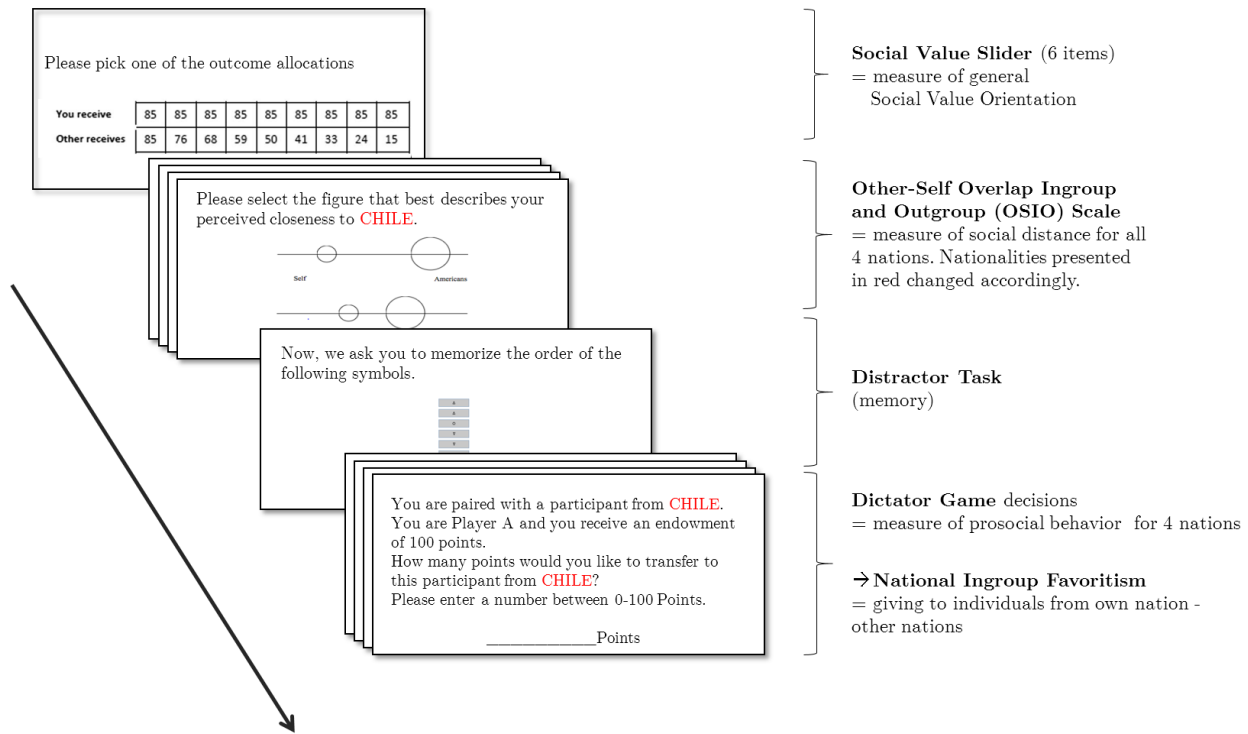
FIGURE 1: Experimental Procedure. Between-subjects manipulation for subjects outside US: (I) own nation + 3 Latin American countries vs. (II) own nation + 2 Latin American countries + US. OSIO questionnaire and Dictator Game were counterbalanced within the experiment. Nationality of the interaction partner that was manipulated in this study is highlighted in red for demonstrative purposes only; no such highlighting was used in the actual experiment.

ment of USD 0 to 1.16. The subjects' payment was neutrally framed as points using a conversion rate of 1 point ≈ USD 0.01, so that subjects from all national subsamples faced identical calculation problems when making their decisions.

2.2　Materials

The core dependent measure national in-group favoritism concerning prosocial behavior was assessed using a dictator game (DG), and the predictors social preferences and social distance were measured using the Social Value Slider (SVS) measure (Murphy, Ackermann & Handgraaf, 2011) and the Overlap of Self-In-group (OSI) and Overlap of Self-Out-group (OSO) Scales (Aron, Aron & Smollan, 1992), respectively. The within-subjects manipulations of the receiver nation were realized by playing the DG with a person from four different nations (including the own nation), from which only the nationality was known. OSO was assessed for all three other nations, whereas group-independent social value orientation and OSI were assessed only once. The overall procedure including the individual materials is depicted in Figure 1. Cultural distance was not directly assessed in the experiment, but calculated from previous work as the Euclidean distance between nations based on the six-

dimensional model by Hofstede et al. (2010).

2.2.1　Dictator Game (DG)

In the dictator game, subjects received an initial endowment of 100 points (≈ USD 1), from which they could give the respective receiver any amount in steps of 1 point (including 0 points). Subjects were informed that either one randomly selected decision made by themselves as the dictator or a decision made by another subject for them as the receiver could be relevant for their payment. After reading the instructions, but before starting the task, subjects had to answer four comprehension questions concerning the structure of the task. For each of these questions, subjects had three attempts to give a correct response. Subjects who failed to answer any of these questions were screened out and excluded from further participation.

2.2.2　The Overlap of Self-In-group and Self-Out-group Scale

As a subjective measure of social distance, we used the Overlap of Self-In-group (OSI) and the Overlap of Self-Out-group (OSO) Scales, which are often employed in research on intergroup relations (Aron et al., 1992). For each national

out-group member subjects were paired with, they had to indicate the degree of perceived social distance. As an illustration of social distance, subjects were presented with seven pictures of two increasingly overlapping circles: one representing themselves, and the other representing the respective national group. Subjects were asked to select the figure that best described their perceived distance to national in- (OSI) and out-group members (OSO). Both scales are usually coded as closeness scores, but for the purpose of enhancing comparison to the cultural distance measure of Hofstede we calculated a social distance measure by reversing the coding. More specifically, as one of our main predictors of in-group favoritism, we calculated the difference in perceived social distance toward in- and out-group members. Higher positive values indicate higher social distance between in- and out-group.

2.2.3 Social Value Slider (SVS)

The Social Value Slider measure (Murphy et al., 2011) constitutes a standard measure for social preferences, consisting of six decomposed dictator games. For each of the six tasks, subjects had to choose between nine possible self-other payoff combinations. From these six items an angle can be computed reflecting a person's Social Value orientation. Subjects knew that one of these decisions could be relevant for their bonus payments, according to a randomly drawn decision they made themselves or which was made by one of the subjects with whom they were matched.

2.3 Procedure

The overall procedure is depicted in Figure 1. The study started with the SVS measure. Subsequently, subjects were informed that they would interact with individuals from four nations, who were anonymously drawn from national samples being representative for the respective nation in terms of age and sex. Prosocial behavior was assessed using the DG by indicating the willingness to share money with randomly selected individuals from the four nations and social distance using OSI and OSO (the latter for three nations). Subjects were first paired with a randomly selected fellow countryman (national in-group), and the nationality of the further partners was randomly selected from the other nations (national out-groups) while not encountering nations twice. On this random assignment we imposed the restrictions that, for dictators from Latin America, receivers from the USA were included in exactly half of the cases (which explains the reduced number of US subjects) and were always included as second (out of three) out-group partners. Thus, we could investigate the effect of having a more homogeneous (i.e., Latin American nations only) vs. a more heterogeneous out-group by including a very different nation. The same

ordering of nations as in the DG was applied for OSI and OSO. The order of both measures was counterbalanced, and a distractor task was included in between to avoid spillover effects. The distractor consisted of a simple learning task, in which subjects had to memorize the order of three varying symbols and subsequently place them in the order learned before.

We told subjects in advance that the bonus payment would be yielded by one randomly selected decision during the experiment (one item of the SVS measure or one of the four decisions made in the DG), either made by the subjects themselves (active role) or by another subject they were paired with (passive role). At the end of the study, the points accumulated were converted into the respective local currency and transferred to the subjects' account. The nationality of the interaction partner was the only information that was provided so that anonymity was preserved and no conclusions about the identity of the subjects could be drawn. Furthermore, knowledge was symmetric, in that both partners were informed about the other's nationality. All instructions were provided in the respective national languages to avoid a foreign-language effect on choice behavior (Costa, Foucart, Arnon, Aparici & Apesteguia, 2014). The English version was translated into Spanish by native speakers, and the quality of the translation was assured through a back-translation procedure (Brislin, 1970) into English by a professional on-line translation service (http://www.onehourtranslation.com).

To assess the degree of personal contact with people from the respective national out-groups, subjects answered four contact questions at the end of the study, namely whether they traveled frequently, had ever worked, had ever lived in the respective out-group nations, or whether they had family or close friends from these nations.

Cultural values were retrieved for the nations included according to Hofstede dimensions (Hofstede et al., 2010). From these values, cultural distance scores were calculated based on the Euclidian distance between nations, as described in the Appendix (where Table A2 shows the respective cultural values of all relevant nations).

3 Results

3.1 National in-group favoritism

We find strong evidence for national in-group favoritism for the overall sample, in that subjects gave on average about 11.68 points more to national in-groups than to national out-groups (RQ1; $t(1828) = 10.78$, $p < .001$). We observe clear patterns of in-group favoritism for dictators from Chile, Peru, Colombia, and Venezuela, and reduced in-group favoritism for dictators from the USA (Figure 2).

TABLE 1: Uni- and multivariate analyses for the predictors of in-group favoritism (excluding US-sample).

	Univariate without controls				Univariate with controls				Full model
Predictors									
Social distance[a]	1.59*** (6.04)				1.53*** (5.60)				1.64*** (5.97)
Hofstede cultural distance[b]		−0.39 (−1.55)				−0.56* (−2.15)			−0.76** (−3.01)
Social Value Orientation			−0.06 (−1.03)				−0.06 (−0.97)		−0.08 (−1.46)
Only Latin out-groups				−0.89 (−0.57)				−0.96 (−0.62)	−0.82 (−0.53)
Control factors									
Dictator nation	NO	NO	NO	NO	YES	YES	YES	YES	YES
Receiver nation	NO	NO	NO	NO	YES	YES	YES	YES	YES
Demographic controls (income, age, sex, education)	NO	NO	NO	NO	YES	YES	YES	YES	YES
Constant	11.73*** (14.98)	13.06*** (16.81)	12.92*** (16.76)	12.95*** (16.72)	11.02*** (6.56)	12.64*** (7.51)	12.16*** (7.25)	12.30*** (7.32)	11.46*** (6.80)
N	2078	2081	2081	2081	2078	2081	2081	2081	2078

Note: z statistics in parentheses; *** $p < .001$, ** $p < .01$, * $p < .05$. All analyses are mixed effects regressions with random slopes and random intercepts for all variables listed under *predictors*.

[a] Social distance is calculated as the difference in indicated social distance between in- and out-group members, all predictors and demographic controls are mean centered, nation controls are included as dummy variables.

[b] A standard method to compute cultural distance based on Hofstede's model is the Euclidean distance variant of Kogut and Singh (1988). Cultural distance (CD) is thereby defined through a mathematical formula, where I_{kj} is country j's score on the kth cultural dimension, I_{ki} is the score of country i on this dimension, and V_k is the variance of the score of the dimension:

$$CD_{ij} = \sqrt{\sum_{k=1}^{K} \left\{ \frac{(I_{kj} - I_{ki})^2}{V_k} \right\}}$$

3.2 Differences in national in-group favoritism between nations

To explore potential differences in the extent of in-group favoritism between the different nations (RQ2), we compared in-group favoritism between the national subsamples. We find highly significant ($p < .001$) in-group favoritism for all four Latin American nations — Chile (11.0 points), Peru (13.1 points), Colombia (14.1 points), and Venezuela (12.7 points) — but only a small effect for the USA (2.8 points, $p = .032$). Post-hoc contrasts between all nations show that the extent of in-group favoritism differs significantly between the USA and the four Latin American nations (all four p´s < .03, Bonferroni-corrected for 10 tests). The Latin American nations did not differ significantly from each other.

FIGURE 2: Dictator Game giving (as percentages) for all nation combinations of dictators and receivers. The x-axis depicts the dictator nationality, whereas the bar colors represent the receiver nationality. Error bars represent 95% confidence intervals.
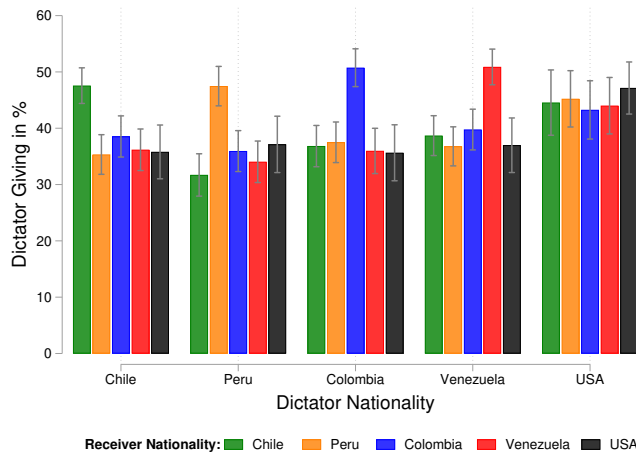
3.3 Predictors for the magnitude of national in-group favoritism

To test our research questions RQ3a-d, we analyzed differences concerning in-group favoritism in detail. Specifically, we investigated how the magnitude of national in-group favoritism is affected by perceived social distance to the national out-group (RQ3a), cultural distance to the national out-group (RQ3b), activation of a common identity by including another out-group (i.e., person from the US included vs. not included) (RQ3c), and social value orientation (RQ3d). We used *in-group favoritism scores* as our core dependent measures, which were calculated as the difference between DG giving to the in-group minus DG giving to the out-group. For each subject, three scores were calculated, since each of them interacted with three persons from national out-groups and one from the in-group. Higher scores indicate larger in-group favoritism and a value of zero indicated no in-group favoritism at all. Note, that comparing effects of further factors on this dependent variable naturally excludes the simple in-group/out-group bias between persons from the own vs. other nation (captured by the variables' average / the constant). It therefore allows to distinctively investigate the influence of further factors on national in-group favoritism that goes beyond this dichotomy.

The results from univariate and multivariate (Table 1) regression analyses of the relation between the above mentioned predictors (RQ3a-d) and national in-group favoritism provide consistent results and analyses including also the US American sample are provided in the Appendix (Table A3). Both sets of analyses are thereby based on hierarchical linear regression models including random intercepts to account for differences between subjects and random slopes

for the relevant predictors (i.e., Social Distance, Cultural Distance and Social Value Orientation). As a robustness check, analyses are conducted both including and excluding US subjects, since they might be considered qualitatively different from the Latin American subjects, as also indicated by the analysis on RQ2 reported in the previous section. In the multiple regression presented in Table 1, our core dependent variable is the in-group favoritism score, and all coefficients for predictor variables are presented in the table. The regression included dictator and receiver nationality (fixed effects) as controls. Correlations between the predictors and control variables were generally low (Appendix Table A6) and the coefficients of the main predictors were essentially the same with and without inclusion of the demographic controls. In addition, none of the demographic variables was significantly correlated with in-group favoritism in tests across subjects. The highest correlation was .056 for education (coded numerically, $p = .090$), but education did not correlate with the main predictors at all.

In the multivariate analyses (Tables 1 & A3, full model; Table A4) in-group favoritism scores were regressed on the nationality of the dictator and the receiver, social distance to the receiver (as a difference of social distance between in- and out-group), the Hofstede cultural distance between the interacting nationalities, social value orientation (SVS_{angle}) as well as the presence of the US as one of the out-groups (i.e., Only Latin out-groups). Consistent over all analyses, social distance to the national out-group is a strong predictor for the magnitude of national in-group favoritism (RQ3a). Simply put, the more distant I feel toward an out-group compared to an in-group member, the more I favor the in-group over the out-group member. Note, that this effect is found in an analysis that excluded the trivial effect that the in-group is generally perceived to be socially closer than the out-group. This is simply due to the fact that the comparison in this analysis is between different out-groups only. Hence, the effect of social distance on the magnitude of national in-group favoritism goes beyond the mere dichotomous difference between own country vs. not. Further analyses revealed that the extent of perceived social distance to the out-group (i.e., OSIO Out-group) was linked to self-reported contact, $\beta = -0.82, z = -13.50, p < .001$ (see *Appendix* Table A5, columns 3 & 4; here and in the following β refers to unstandardized coefficients). Social distance decreased with increasing contact (or vice versa).

Furthermore, the magnitude of national in-group favoritism decreases with increasing cultural distance between in-group and out-group (RQ3b). Hence, when comparing behavior toward various out-groups, more culturally similar out-groups to my own culture receive even less than less similar ones. The effect, however, is weaker than that of social distance and is not significant in one of the univariate analysis (i.e., excluding US subjects, see Table 1, column 2). Note, however, that cultural distance is derived from scores

TABLE 2: Multivariate analyses for the predictors of DG giving in in-group and out-group interactions both including/excluding subjects from the US.

	In-group		Out-group[b]	
	without US	with US	without US	with US
Predictors				
Social distance[a]	0.72 (1.38)	0.71 (1.49)	−1.55*** (−5.57)	−1.86*** (−7.55)
Hofstede cultural distance			0.71** (2.85)	0.71** (2.99)
Social Value Orientation	0.24*** (4.18)	0.28*** (5.17)	0.36*** (5.90)	0.43*** (7.40)
Only Latin out-groups	−2.73 (−1.64)		−1.26 (−0.82)	
Control factors				
Dictator nation	NO	NO	YES	YES
Receiver nation	NO	NO	YES	YES
Demographics (income, age, sex, education)	YES	YES	YES	YES
Constant	47.73*** (32.51)	47.39*** (36.18)	36.59*** (21.69)	37.22*** (22.93)
N	816	915	2078	2741

Note: z statistics in parentheses; *** $p < .001$, ** $p < .01$.

[a] Social distance is calculated as the difference in indicated social distance between in- and out-group members, all predictors and demographic controls are mean centered.

[b] Mixed effects regression with random slopes and random intercepts for all variables listed under *predictors*.

based on earlier studies and thus may not reflect so accurately how such distance is perceived by our subjects.

Against our predictions, having an encounter with an US American out-group member (vs. only interacting with Latin American out-groups) did not reduce in-group favoritism toward other Latin American countries (RQ3c). To understand this unexpected result better, we analyzed whether the presence of a US out-group decreases social distance between individuals from different Latin American countries, by activating a supranational Latin American in-group as intended. Results reveal that Latin Americans did not feel closer toward Latin American out-group partners in the presence of a US American out-group, $\beta = 0.11$, $z = 0.90$, $p = .37$ (see

Appendix Table A5, column 3), which would be required for an effect on in-group favoritism to emerge.

Finally, results concerning the effect of social value orientation on national in-group favoritism differ between the analyses including only the Latin American sample (Table 1) vs. the full study population including the US subjects (see *Appendix* Table A3 and A4) and they are even weaker in the univariate analyses (see *Appendix* Table A3). Generally, the magnitude of in-group favoritism tends to decrease with increasing social value orientation. People who are more prosocial give more to the out-group, thus reducing the gap.

3.4   Further analyses

To investigate the determinants for differences in in-group favoritism in more detail, we analyzed national differences in DG giving to the in- and out-group separately. Results show that the differences in in-group favoritism are mainly driven by DG giving in interactions with the out-group (see Figure 2 & Table A4, column 3–6).

Specifically, dictators from the USA gave relatively more to out-group members, as compared to dictators from Latin American nations (see Figure 2). There were no such nation-specific differences in DG giving in in-group interactions. Figure 3 shows the distributions of DG giving to in-group (colored bars) and out-group (white bars) members split by dictator nation. When interacting with in-group members, the relative majority of dictators (ranging from 49–63%, depending on the dictator nation) chose an equal split. For dictators from the USA, only a 6% decrease of this equal split rate is observed when facing members of the out-group. However, this drop is much more pronounced (18–21%) for all Latin American countries, and this drop seems to be the driving factor for the observed differences in in-group favoritism.

Finally, we investigated the predictive value of Social Value Orientation, social and cultural distance on the extent of giving behavior in the DG. As shown in Table 2, and as repeatedly shown in previous research, social preference is a clear predictor for DG giving behavior in in-group as well as out-group interactions. An ideal individualist (SVS_{angle} = 0°) contributed on average 12.6% less in in-group and 16.6% less in out-group interactions than an ideal cooperator (SVS_{angle} = 45°). Remarkably, the coefficient of SVS_{angle} for giving behavior in the DG was between 2.6 to 4.6 times higher in the US sample compared to the individual Latin American samples. A multilevel linear random effects regression with random intercepts and slopes for SVS_{angle} as well as its interaction with dictator country (Latin vs. USA) supports this finding, $\beta = -0.62$, $z = -3.86$, $p = <.001$, for the interaction (not corrected for other interactions that might have been examined).

Social distance (measured as differences in distance to the in-group − out-group) predicts DG giving negatively in the

FIGURE 3: Histograms showing distributions of dictator-game giving (as percentages) for each national subsample in in-group (filled-colored bars) and out-group (white bars) interactions. The x-axis is the amount given (100 points maximum).
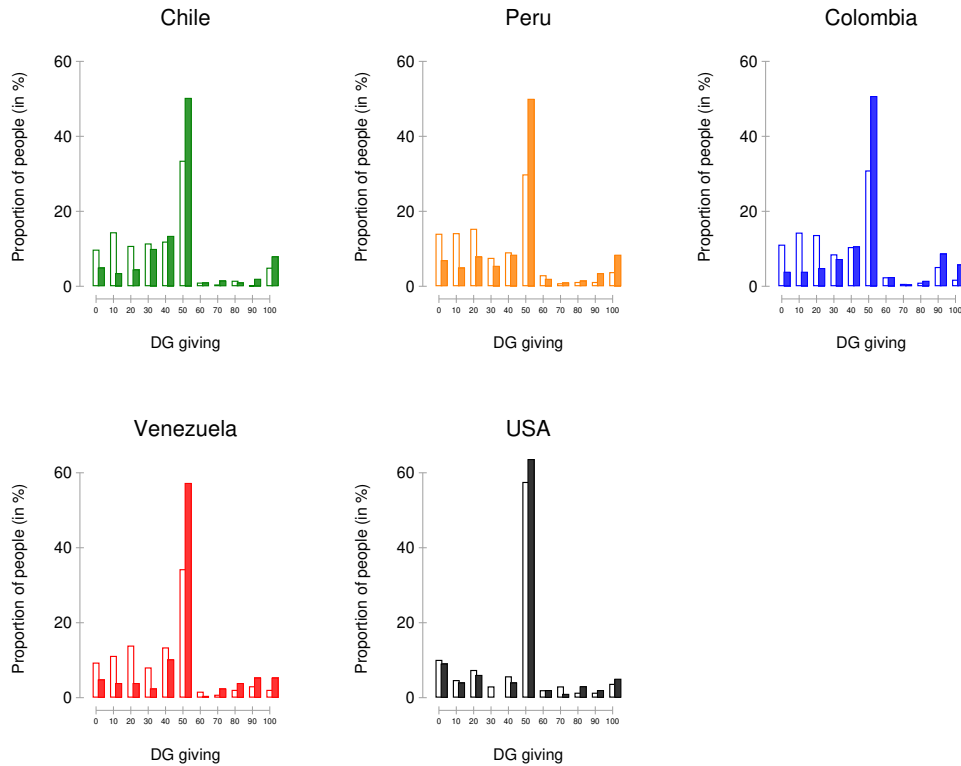
out-group, indicating that people give less to out-groups that are perceived as more socially distant. No significant effect of social distance is found for the in-group. Cultural distance has positive predictive value for DG giving in out-group situations in such a way that the tendency for being prosocial (i.e., giving money) increases with cultural distance.

4 Discussion

In a cross-national study including population representative samples according to age and sex from four Latin American nations and the USA, we investigated in-group favoritism in a cross-national context. Overall, we observed a substantial amount of national in-group favoritism, in that subjects showed significantly more prosocial behavior toward national in-group compared to national out-group members. When analyzing each national subsample separately, we observed strong in-group favoritism in all Latin American subsamples, as well as (although to a lesser extent) in the US American subsample. Hence, the classic phenomenon of in-group favoritism is also found for prosocial behavior in the context of cross-cultural interactions involving real incentives and non-student populations. This result is particularly noteworthy, since the general level of prosocial behavior shown by our subjects was somewhat higher than the level

shown by students in standard lab studies. For instance, the equal-split proportions toward both in- and out-groups for all nations (see Figure 3) were well above the average rate of 17% reported in a recent comprehensive meta-analysis (Engel, 2011).

Additional exploratory analyses regarding potential national differences revealed strong heterogeneity concerning the magnitude of in-group favoritism in prosocial behavior between nations. We observed that in-group favoritism was strongly reduced in the US American subsample, which could be potentially explained by diverging social norms within the different nations (for cultural variation in social norms, see Morris, Hong, Chiu & Liu, 2015; Roos, Gelfand, Nau & Lun, 2015). Latin American subjects followed an equal-split norm strongly in in-group interactions and did so less when interacting with out-group members. In contrast, US Americans followed the same norm in both in- and out-group interactions.

There are several potential explanations for the reduction in in-group favoritism for the US, compared to the Latin American samples. This difference could be due to the imbalance of group status between Latin and US Americans, with the latter possibly not wanting to take advantage of their superior position. In our selection of subsamples, Latin Americans represented economically lower status groups, compared to US Americans (e.g., in terms of purchasing

power or gross domestic product). The possible role of economic status is particularly relevant, since research suggests that cultural differences often also reflect differences on socio-economic factors (Vignoles et al., 2016). Our results are in line with the finding that high status groups decide more equitably and consequently show a lower degree of in-group favoritism when interacting with members of low status groups (Tanaka & Camerer, 2013). These results are also in line with the idea of inequality aversion, in that individuals care for an egalitarian distribution of resources (Fehr & Schmidt, 1999) and the concept of sympathy for the poor (Piston, 2014). Recent evidence indicates that richer nations show more prosocial behavior toward nations that are worse off financially (Dorrough & Glöckner, 2016). Additionally, as the USA also have a higher globalization index than Latin American nations (Lockwood & Redoano, 2005), the result fits findings showing that higher country-level globalization is linked to an increase in cooperation toward national out-groups (Buchan et al., 2009). In relation to these explanations, it must be pointed out, however, that we only examined one single high-status or strongly globalized nation. A larger plurality of respective nations is needed in further investigations.

Furthermore, we identified several driving factors for national in-group favoritism. With regard to interaction characteristics, the social distance between individuals and the Hofstede cultural distance between nations turned out to be predictive for the degree of in-group favoritism. In line with common sense intuition and previous findings (e.g., Hoffman et al., 1996), out-group members that are perceived as socially close were treated in a similar fashion to in-group members, which in turn led to a decrease in the extent of in-group favoritism. Still, interacting with an in- as compared to an out-group member had additional predictive value beyond perceived social distance as we measured it. We can, however, not preclude that our measure, although being well established in the field, may have missed, or measured with substantial error, relevant aspects of social distance as a general concept.

Concerning cultural distance, we found that, contrary to previous results (Siem & Stürmer, 2012) and some evolutionary-based arguments (Alexander, 1974), the extent of in-group favoritism decreased with increasing cultural distance. However, this result is in line with the finding that the stronger the rivalry between groups, the more people choose to avoid helping the out-group (Weisel & Böhm, 2015) as well as a prediction derived from Social Identity Theory. According to this theory, groups have a motivation to differentiate their in-group positively from a particularly similar out-group, resulting in an increase in in-group favoritism (Brown,1984). For the Latin American nations included in our study, this might be caused by a competition for shared (natural) resources or for the true origin of cultural commonalities (e.g., the long-standing battle whether Peru or Chile

may claim Pisco as their national drink) between neighboring nations. However, future research should investigate this relationship with a larger sample of nations. Furthermore, in addition to the Hofstede values which are often criticized for their lack of validity (e.g., Schmitz & Weber, 2014) one could add an assessment of perceived cultural distance as a more subjective measure (see e.g., Demes & Geeraert, 2014).

Considering the group context as an additional interaction characteristic, we would have expected that the presence of a dissimilar country (USA) would activate the superordinate identity of being Latino leading to less perceived social distance and in-group favoritism between Latin American countries. The analysis showed that the manipulation (presence of an US American out-group vs. Latin American out-groups only) was not strong enough to influence the perceived social distance among Latin American out-groups and consequently had no effect on the extent of in-group favoritism.

For future research it would thus be particularly important to make the common supranational identity more salient (e.g., by focusing on common Latin American characteristics) and measure the degree of common supranational identity (e.g., by asking subjects to what degree they identify with Latin America). Curtis (2014), for example, specifically asked subjects to rate the degree they identify with Europe vs. their country of origin. Results show that European Union citizens who highly identify with Europe, as opposed to their nation, hold more favorable views toward immigrants of European Union origin, indicating that a supranational identity reduces bias and facilitates intergroup cooperation. Another possible explanation for the absence of the expected effect might be that Latin American subjects had a high degree of contact (45%) with US Americans, and thus the USA might not be the ideal candidate for a contrasting out-group. Thus, for future studies aiming to understand the concept of multiple identities, it would be advisable to recruit national subsamples with less intergroup contact. In line with Allport's contact hypothesis (Allport, 1954; Dovidio, Gaertner & Kawakami, 2003) contact with the national out-group was identified as one predictor of reduced social distance, as well as in-group favoritism. However, the direction of causality is in this context somewhat unclear since affinity might drive contact or vice versa.

With regard to individual characteristics, we show in some of the analyses that the magnitude of in-group favoritism decreases with increasing social value orientation. As the effect is relatively small and volatile further research is needed to validate this finding. However, we replicate the standard finding that social preference is a clear predictor for DG giving behavior in that individualists showed significantly less prosocial behavior, compared to cooperative individuals, in both in- and out-group interactions. Notably, the

predictive power of social preferences for prosocial behavior (i.e., DG giving) was stronger in the US compared to the Latin American sample. This finding could be a valuable starting point for future research to understand the role of individual preferences for decision-making in the context of cultural differences (Buchan, Johnson & Croson, 2006; e.g., individualism vs. collectivism, see Al-Zahrani & Kaplowitz, 1993).

Overall, the results of this large-scale study provide an important contribution to the discussion of cross-national intergroup behavior. Using population representative samples according to age and sex and an incentivized design, we showed distinct differences in the extent of in-group favoritism and potentially the underlying national fairness norms in Latin America and the US. Furthermore, we identify interaction characteristics such as social distance and individual characteristics, such as social preferences, that determine national in-group favoritism. Whereas our study reveals general predictors for national in-group favoritism in prosocial behavior, future research could investigate specific cultural determinants such as a nation's level of individualism or uncertainty avoidance (see e.g., R. Fischer & Derham, 2016). To do so, these studies should include a more diverse set of nations that vary with regard to important cultural dimensions.

Besides the limited number of countries considered, our research could be criticized for the fact that in our study only one of many decisions and one of two roles (active vs. passive) were randomly chosen for experimental payoff. This procedure represents a variant of the well-established strategy method (e.g., Fischbacher, Gächter & Quercia, 2012) and is an economic way of collecting data. However, the fact that subjects were informed that they could have both roles might have activated reciprocity concerns that should be precluded in dictator games (Büchner, Coricelli & Greiner, 2007). Although we do not see a straightforward way how this design feature might have caused our differential results, future studies could assign only one of both roles to preclude this factor as potential confound.

Our work has practical implications for globalization and migration, in that it identifies some of the determinants of in-group favoritism, such as perceived social distance which is associated with contact. Increasing social encounters and contact with refugees (e.g., in sports associations, neighborhood initiatives, kindergartens and schools) may lead individuals to draw broader group boundaries, perceive less social distance to national out-groups, and treat them more similarly to national in-group members. This might help reduce the extent of national in-group favoritism and contribute to the current societal challenge of an integration of migrants from various nations. Further systematic research is, however, required to test these ideas.

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5   Appendix

TABLE A1: Socio-demographic and socio-economic information for each national subsample.

	Chile	Peru	Colombia	Venezuela	USA
Female	49%	48%	49%	50%	51%
Age	42.3 (15.4)	38.3 (13.6)	39.4 (14.4)	39.1 (14.2)	46.3 (16.3)
Primary School	–	–	–	0.5%	1%
High School	30.4%	17.8%	23.7%	21.8%	31.3%
University	69.7%	82.2%	76.3%	77.7%	69.7%
Real income in $	1084.6 (908.4)	634.9 (620.4)	503.6 (493.7)	1234.2 (1077.7)	1655.3 (1305.3)

Note: The table presents mean values and standard deviations in parentheses. Education was measured using a 3-point scale with 1 = primary school, 2 = high school, 3 = university. Income was measured using a 7-point scale which was converted into each local currency with 1 < USD 250, 2 = USD 251–500, 3= USD 501–1000, 4 = USD 1001–1500, 5 = USD 1501–2000, 5= USD 2001–3000, 7 > USD 3001. Real income was calculated using the mean of each income bracket as the estimate of real income and USD 3500 for the highest category 7 (assuming an equal size of this category as for the previous ones).

TABLE A2: Scores of the Hofstede dimensions for all national subsamples.

	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long Term Orientation	Indulgence
Chile	63	23	28	86	31	68
Peru	64	16	42	87	25	46
Venezuela	81	12	73	76	16	100
Colombia	67	13	64	80	13	83
USA	40	91	62	46	26	68

TABLE A3: Uni- and multivariate analyses for the predictors of in-group favoritism (including US-sample).

	Univariate without controls			Univariate with controls			Full Model
Predictors							
Social distance[a]	1.72*** (7.28)			1.78*** (7.40)			1.91*** (7.90)
Hofstede cultural distance[b]		−0.55** (−2.63)			−0.50* (−2.06)		−0.74** (−3.18)
Social Value Orientation			−0.09 (−1.82)			−0.08 (−1.60)	−0.10[+] (−1.96)
Control factors							
Dictator nation	NO	NO	NO	YES	YES	YES	YES
Receiver nation	NO	NO	NO	YES	YES	YES	YES
Demographic controls (income, age, sex, education)	NO	NO	NO	YES	YES	YES	YES
Constant	10.42*** (14.65)	12.17*** (17.01)	11.71*** (16.83)	10.55*** (6.73)	12.09*** (7.68)	11.74*** (7.50)	10.78*** (6.85)
N	2741	2745	2745	2741	2745	2745	2741

Note: z statistics in parentheses; *** $p < .001$, ** $p < .01$, * $p < .05$, [+] $p < .1$. All analyses are mixed effects regression with random slopes and random intercepts for all variables listed under *predictors*.

[a] Social distance is calculated as the difference in indicated social distance between in- and out-group members, all predictors and demographic controls are mean centered, nation controls are included as dummy variables.

[b] A standard method to compute cultural distance based on Hofstede's model is the Euclidean distance variant of Kogut and Singh (1988). Cultural distance (CD) is thereby defined through a mathematical formula, where I_{kj} is country j's score on the kth cultural dimension, I_{ki} is the score of country i on this dimension, and V_k is the variance of the score of the dimension:

$$CD_{ij} = \sqrt{\sum_{k=1}^{K} \left\{ \frac{(I_{kj} - I_{ki})^2}{V_k} \right\}}$$

TABLE A4: Multivariate analyses for the predictors of In-group favoritism and DG giving in in- and out-group interactions both including / excluding subjects from the US with inclusion of control variables

	In-group favoritism[b,c]		DG In-group		DG Out-group [b,c]	
	Without US	With US	Without US	With US	Without US	With US
Dictator nation[a]						
Chile	−1.01	0.94	−1.03	−0.49	−0.10	−1.39
	(−0.73)	(0.68)	(−0.69)	(−0.32)	(−0.07)	(0.98)
Peru	0.60	2.32	−0.91	−0.36	−1.75	−2.87*
	(0.44)	(1.64)	(−0.61)	(−0.23)	(−1.27)	(1.97)
Colombia	0.20	2.34	1.14	1.56	0.88	−0.74
	(0.14)	(1.65)	(0.77)	(0.98)	(0.64)	(−0.51)
Venezuela	0.21	2.36	0.80	1.29	0.96	−0.62
	(0.15)	(1.74)	(0.53)	(0.84)	(0.70)	(−0.45)
USA		−7.97***		−2.00		5.62**
		(−4.01)		(−0.94)		(2.74)
Predictors						
Social distance[b]	1.64***	1.91***	0.60	0.55	−1.55***	−1.86***
	(5.97)	(7.90)	(1.12)	(1.13)	(-5.57)	(7.55)
Hofstede cultural distance	−0.76**	−0.74**			0.71**	0.71**
	(−3.01)	(−3.18)			(2.85)	(2.99)
Social Value Orientation	−0.08	−0.10[+]	0.24***	0.28***	0.36***	0.43***
	(−1.46)	(−1.96)	(4.02)	(5.06)	(5.90)	(7.40)
Only Latin out-groups	−0.82		−2.69		−1.26	
	(−0.53)		(−1.61)		(−0.82)	
Demographic controls						
Female	−1.76	−2.10	−2.10	−1.94	0.29	0.93
	(−1.10)	(−1.47)	(−1.22)	(−1.21)	(0.18)	(0.63)
Age	0.04	0.05	0.05	0.07	0.01	0.01
	(0.66)	(0.94)	(0.90)	(1.21)	(0.09)	(0.10)
High School	6.61	−0.90	3.60	−0.91	−3.69	0.42
	(0.30)	(−0.06)	(0.15)	(−0.05)	(−0.17)	(0.03)
University	9.34	1.96	5.84	1.23	−3.91	−0.11
	(0.42)	(0.13)	(0.25)	(0.07)	(−0.18)	(−0.01)
Income	0.01	−0.01	0.01	0.01	0.01	0.01
	(0.36)	(−0.02)	(0.30)	(0.05)	(0.08)	(0.30)
Control receiver nation	YES	YES	NO	NO	YES	YES
Constant	12.48***	9.84***	48.01***	47.49***	36.69***	38.61***
	(13.59)	(11.44)	(32.22)	(35.72)	(39.92)	(43.71)
N	2078	2741	816	915	2078	2741

Note: z statistics in parentheses; *** $p < .001$, ** $p < .01$, * $p < .05$, [+] $p < .1$.
[a] Indicators for dictator nationality are effect coded (centered variables) and represent comparisons against the grand mean. To be able to report deviations for all countries, coefficients for the omitted category are estimated in a second run of the analysis in which a different country was omitted. All predictors and demographic controls are mean centered.
[b] Social distance is calculated as the difference in indicated social distance between in- and out-group members.
[c] Mixed effects regression with random slopes and random intercepts for all variables listed under predictors.

TABLE A5: Multivariate analyses for the predictors of perceived social distance toward in- and out-group members both including/excluding dictators and receivers from the US with inclusion of sociodemographic controls, nationality of the dictator, nationality of the receiver, and contact.

	OSIO In-group		OSIO Out-group[b,c]	
	Without US	With US	Without US	With US
Dictator nation[a]				
Chile	0.38***	0.26*	−0.31***	−0.38**
	(3.92)	(2.50)	(−2.75)	(−3.13)
Peru	0.26**	0.11	−0.05	−0.07
	(2.64)	(1.11)	(−0.40)	(−0.55)
Colombia	−0.37***	−0.50***	0.34**	0.33**
	(−3.77)	(−4.64)	(3.03)	(2.63)
Venezuela	−0.27**	−0.42***	0.01	−0.01
	(−2.75)	(−4.01)	(0.12)	(−0.07)
USA		0.55***		0.13
		(3.78)		(0.71)
Predictors				
Hofstede cultural distance			0.03	0.04
			(1.28)	(1.71)
Social Value Orientation	−0.01**	−0.01**	0.01	0.01
	(−2.91)	(−2.71)	(1.24)	(1.03)
Only Latin out-groups	−0.06		0.12	
	(−0.58)		(0.90)	
Demographic controls				
Female	−0.01	−0.07	0.48***	0.53***
	(−0.06)	(−0.64)	(3.64)	(4.20)
Age	0.01	−0.01	−0.01	−0.01
	(0.33)	(−0.89)	(−1.88)	(−0.37)
High school	0.39	−1.05	2.70	2.89*
	(0.25)	(−0.91)	(1.52)	(2.16)
University	0.42	−0.96	2.48	2.70*
	(0.27)	(−0.84)	(1.40)	(2.02)
Income	−0.01	−0.01	0.01*	0.01
	(−0.86)	(−0.90)	(2.02)	(1.83)
Contact			−0.85***	−0.82***
			(−11.59)	(−13.50)
Control receiver nation	NO	NO	YES	YES
Constant	1.87***	2.01***	3.08***	3.08***
	(34.00)	(36.04)	(39.99)	(40.24)
N	816	915	2078	2741

Note: *z* statistics in parentheses; *** $p < .001$, ** $p < .01$, * $p < .05$.
[a] Indicators for dictator nationality are effect coded (centered variables) and represent comparisons against the grand mean. To be able to report deviations for all countries, coefficients for the omitted category are estimated in a second run of the analysis in which a different country was omitted. All predictors and demographic controls are mean centered.
[b] Social distance is calculated as the difference in indicated social distance between in- and out-group members.
[c] Mixed effects regression with random slopes and random intercepts for all variables listed under predictors.

TABLE A6: Correlation of predictors.

	Social distance[a]	Hofstede cultural distance[a]	Social Value Orientation	Female	Age	Income	High School
Hofstede cultural distance	0.52***						
Social Value Orientation	0.03	0.01					
Female	0.10***	0.01	0.02				
Age	−0.02	0.03	−0.07***	−0.20***			
Income	0.01	0.07***	−0.04	−0.14***	0.28***		
High school	0.02	0.01	0.02	−0.03	−0.02	−0.13***	
University	−0.02	−0.02	−0.02	0.03	0.03	0.13***	−0.99***

[a]based on repeated measures.

*** $p < .001$.