

In Someone Else's Shoes

Promoting Prosocial Behavior Through Perspective Taking

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Abstract

Can taking the perspective of an out-group reduce prejudice and promote prosociality? Building on insights from social psychology, this paper studies the case of Colombian natives and Venezuelan immigrants. This was done by conducting an online experiment in which natives were randomly assigned either to play an online game that immersed them

in the life of a Venezuelan migrant or to watch a documentary about Venezuelans crossing the border on foot. Relative to a control group, both treatments increased altruism towards Venezuelans and improved some attitudes, but only the game significantly increased self-reported trust.

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*In Someone Else's Shoes: Promoting Prosocial Behavior Through Perspective Taking**

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“As we have no immediate experience of what other men feel, we can form no idea of the manner in which they are affected, but by conceiving what we ourselves should feel in the like situation.”

ADAM SMITH, *The Theory of Moral Sentiments* (1759)

1 Introduction

Out-group prejudice and its associated exclusionary behaviors can have damaging economic consequences. At the individual level, it can lead to lower effort, worse academic outcomes, and wage gaps (1, 2, 3). At the more aggregate level, it can hurt productivity and economic growth (4, 5). With a record 82.4 million people forcibly displaced globally, prejudice towards immigrants in hosting nations has been increasing.¹ In this context, strategies to reduce prejudice and promote prosocial behavior should be a policy priority. But which interventions are effective at a low cost?

A vast literature studies the determinants of attitudes towards migrants [7], however, there is considerably less research on low-cost interventions to improve them. While information-provision interventions can correct misperceptions about the size and characteristics of immigrant populations at a low cost, their impact on policy attitudes and behaviors is mixed (8, 9, 10). Interventions that foster contact between antagonistic groups can promote inclusionary behaviors; however, they are complex and expensive to scale up (11, 12). Alternative strategies grounded in social psychology rely on targeting emotional states to influence prejudice towards out-groups. In particular, low-cost interventions that encourage participants to take the perspective of a migrant have been successful in producing attitudinal change in different contexts (13, 14). Yet, little is known about their effects on prosocial behavior and the mechanisms behind observed changes.

In this paper, we test the efficacy of two online, perspective-taking interventions in promoting prosocial behavior and reducing prejudice towards Venezuelan immigrants in Bogotá, Colombia. The participants in our intervention recently experienced a drastic change in the demographic composition of their communities due to a massive influx of Venezuelan migrants. In just six years, more than five million people have fled the humanitarian crisis in Venezuela and relocated in other countries, making Venezuelans the second largest internationally displaced population after Syrians. Colombia is the main destination country for this contingent, hosting 1.7 million Venezuelans, and Bogotá is the main recipient city, accounting for almost 20

¹Displacement figures come from [6]. Gallup’s Migrant Acceptance Index has decreased globally between 2016 and 2019; visit: <https://news.gallup.com/poll/320678/world-grows-less-accepting-migrants.aspx>.

percent of Colombia’s Venezuelan population. Attitudes towards Venezuelans have deteriorated markedly in Colombia, as reported in the media and evidenced by the decline in Gallup’s Migrant Acceptance Index, which in Colombia had the third largest drop in the world between 2016 and 2019.²

We designed an experiment that exposed a random subset of 897 participants to either an online game or a video. Participants in the game assume the role of a Venezuelan migrant and are presented with her story, they receive text and voice messages from her relatives and friends, and they can make decisions in her place—such as where to migrate—that lead them to alternative life paths. The video is a documentary film that depicts the struggles of Venezuelans crossing the border on foot to Colombia—including challenges such as freezing temperatures and sleeping on the streets—and includes first-person testimonies about family separation. After the interventions, we applied a survey instrument that elicited attitudes towards migrants and assessed two prosocial behaviors: altruism and self-reported trust towards Venezuelans. We measured altruism through participants’ donation behavior in a dictator game. We told participants they would be given an amount of money and asked them how they would allocate it between themselves, an organization that helps Venezuelan migrants, and a well-known nonprofit group that builds houses for vulnerable populations. A control group did not receive any treatment and only answered the survey.

Our interventions are grounded in insights from the psychology field of perspective taking, understood as “the active consideration of others’ mental states and subjective experiences” [15]. Work in this field has shown that considering others’ circumstances can attenuate expressions of prejudice through interventions such as instructing people to write an essay from the perspective of an out-group [16] or to be empathetic or focus on feelings during an activity like reading or watching a video about an out-group ((author?) 17, 18). Perspective taking can operate through both affective and cognitive processes [15].

Each of our interventions explores a different pathway to activate perspective taking. The game involves active role-playing, which has been shown to increase one’s ability to see the world through others’ points of view and to increase perspective taking ((author?) 19). The video exposes participants to personal narratives, which can have the power to “transport” the audience to a fictional world and lead to changes in beliefs [20]. Perspective taking through personal narratives is one potential mechanism to increase empathy

²Gallup compared 140 countries between 2016 and 2019 (see footnote 1); the three largest declines in migrant acceptance took place in the main destination countries of the Venezuelan exodus (Perú, Ecuador, and Colombia). Surveys conducted locally also reveal increases in intolerance; see, e.g., the following report by *Semana* magazine: https://s3.amazonaws.com/semanaruralvzla/documentos/1568067274_boletin7pdf.

((author?) 21, 22). Some authors in psychology have also studied this technique, which they refer to as *perspective giving*. Unlike many studies in social psychology, we do not provide explicit instructions to participants in our interventions when performing the activities in order to ameliorate demand effects. (A discussion of this appears below).

Our main finding is that the interventions improved prosociality towards migrants. Participants assigned to either the game or the video had a probability of donating to the charity that supports Venezuelan migrants that was approximately 11 percentage points higher than participants assigned to the control group, equivalent to a 16 percent increase. Conditional on donating to the Venezuelan NGO, participants in the treatment groups donated approximately 2.4 percent more relative to the control group. The game, in addition, improved self-reported trust towards Venezuelans by 0.29 standard deviations relative to the control group. Regarding attitudes towards migrants, results are mixed. Both the game and video treatments have a positive and significant impact on the assessment that circumstances beyond a migrant's control are most related to their poverty (versus lack of self-effort). Although the point estimates are positive, the treatments do not have a significant impact on attitudes about equal job opportunities for migrants and natives or on attitudes about the right to segregate migrants from neighborhoods. Finally, regarding policy attitudes about government assistance to migrants, both treatments have positive and significant effects.

We also evaluated if the treatments affected the empathic concern and perspective-taking abilities of respondents. An empathetic response has been documented to occur after interventions that induce perspective taking [23]. To this end, we applied (post-treatment) the empathy and perspective-taking subscales from the Interpersonal Reactivity Index questionnaire (24). These scales measure the extent of empathic concern and perspective taking in general, not just towards migrants. Both treatments had positive impacts on the perspective-taking scale, but only the effect of the game was statistically significant. The video had a positive impact on empathy, but not statistically different from zero.

Two behaviors could threaten our research design: social desirability bias (SDB)—an individual's tendency to answer according to how others will view their responses—and experimenter demand effects (EDE)—the tendency to act according to the perceived hypothesis of the study. A few comments are due here. First, the survey was anonymous and conducted online, which can reduce the tendency to please others. Second, a large fraction of individuals express prejudice in our sample, so SDB does not seem

prevalent.³ Third, we find changes in donations—a high-stakes behavior—in response to the treatments but no significant changes in some attitudes, which seems inconsistent with individuals trying to act according to the hypothesis of the study. Even though SDB and EDE do not seem prevalent in our sample and recent research has found these concerns to be less worrisome than previously thought ((**author?**) 25, 26), we conduct a list experiment to address these issues. The results from the latter suggest behavioral biases are not driving our results.

Within the broad field of prejudice reduction (27, 28), our paper contributes to a recent literature studying interventions to change attitudes and behaviors towards immigrants as well as preferences for migration policy. Given extensive evidence that natives hold biased beliefs about the size and characteristics of immigrant populations, a first group of studies has attempted to shift attitudes by correcting these misperceptions. Although information provision tends to update beliefs, these interventions have had mixed success in shifting (political) attitudes (8, 9, 10, 29, 30), perhaps because individuals tend to engage in motivated reasoning [31]. A second body of research, recognizing the limitations of information provision, has instead leveraged emotional states to influence attitudes through perspective-taking exercises or games and through drawing parallels with personal experiences. For example, individuals in the United States who were asked to imagine themselves as refugees were more likely to write a letter to the president in support of refugees [13]; an online game reduced anti-Roma sentiment in Hungary and shifted voting intentions away from the right-wing party [14]; and individuals in Greece, Germany, and the United States who were primed to think about their own family migration history increased their pledges of monetary donations and improved their attitudes towards refugees (32, 33). Finally, (**author?**) [34], build a program aimed at building social cohesion in ethnically mixed schools in Turkish and document improvements in trust, reciprocity, and altruism.

We directly contribute to this second group of studies by testing the impacts of two different types of perspective-taking interventions on prosocial behaviors—altruism and trust—and assessing whether they increased empathy and perspective taking as measured by a validated psychological scale. Except for (**author?**) [14], existing studies do not use interventions based on games or media as we do. The game in (**author?**) [14] is closest to our game intervention but they do not explore impacts on behaviors. (**author?**) [32] explore donating behavior but use interventions that appeal to participants' own family migration history. Also, they measure altruism through a hypothetical donation (i.e., should the participants win a raffle)

³For example, among participants in the control group, 44 percent agreed that Colombians should have the first chance at any kind of job.

whereas we elicit an actual donation (i.e., a high-stakes behavior). We also innovate by introducing trust towards migrants as an outcome. Finally, existing studies do not examine the role of empathy, except for (author?) [33], but they use a self-reported measure whereas we use a validated scale.⁴

Our paper also speaks to the literature that studies the relationship between migration and prosocial behavior. A body of work finds that the desire for redistribution is typically lower across racial, ethnic, religious, and nationality groups than within these groups ((author?) 35, 36), and that support for redistribution is lower when migration is higher ((author?) 37, 38). Recent evidence also suggests that priming people to think about migration reduces preferences for redistribution and donation to charities (8), and that natives reciprocate trust less to immigrants from non-Western countries than to their own co-nationals (39).⁵ We contribute to this literature by providing evidence on how interventions that induce perspective taking can modify altruism and trust towards immigrants.

Our results have important implications. Developing countries host 86 percent of displaced populations worldwide (UNCHR, 2020) and face significant challenges in integrating them. Governments allocate resources to communication campaigns and other initiatives to promote social cohesion without solid evidence on which programs are more effective.⁶ Online, low-cost interventions like the ones studied here could be used to promote inclusionary behaviors in schools or workplaces. A limitation of our study is that we only measure behavioral change in the short run. However, short time frames can be relevant to a wide array of decisions with permanent effects on immigrants' well-being, such as hiring decisions by managers, grading decisions by teachers, and voting decisions by natives. More research is needed to assess the efficacy of these types of interventions in different contexts and to measure the length of their effects.

2 Research Design and Outcomes

We designed a between-subjects online experiment to assess the causal effect of encouraging individuals to take the perspective of a Venezuelan migrant—either by playing a game or by watching a video—on prosocial behavior and attitudes towards migrants.

⁴The question they pose is: *I empathize with the reasons people want to immigrate to the United States, as well as the hardships they face when coming to this country.*

⁵An exception is [40], who find that Egyptians display higher levels of altruism, trust, and cooperation towards Syrian immigrants than towards their own co-nationals.

⁶In Latin America and Colombia in particular, many such well-intended initiatives exist but are rarely, if ever, evaluated.

2.1 The intervention

The participants in our experiment were randomly assigned to a treatment group (either the game or the video) or to a control group. We describe each treatment in detail below. Post-treatment, we collected a survey to elicit prosocial behaviors and attitudes. The control group only answered the survey and did not perform any tasks.

Game treatment This arm consisted of participating in an activity called *En Otros Zapatos* (EOZ), which means *In Someone Else's Shoes*. The Inter-American Development Bank created the EOZ platform to promote empathy towards marginalized groups and underrepresented minorities by inviting users to “step into” the shoes of a member of the group. The website is open to the public and allows users to participate in several interactive stories.⁷ For this experiment, we used a new story of a Venezuelan migrant moving to Colombia. A writer created this fictional story based on interviews he conducted with Venezuelan migrants in Colombia. In the game, the user takes the role of “Mile Rodríguez,” a female Venezuelan migrant with a husband and two young children. Participants start by reading her story, which describes the struggles she and her family faced in Venezuela (e.g., lack of food and proper medical attention) that eventually prompt them to emigrate to Colombia. With this information, the user must decide whether to migrate directly to Bogotá—the capital and her husband’s preferred option—or to Riohacha, a northern city recommended by a neighbor. Each decision leads the user to a different life. Once at either destination, the user will keep reading Mile’s story and making more decisions for her. The user will also receive letters and voice messages from Mile’s relatives and friends, listen to songs that are meaningful to her, and see pictures of her family. The activity also lets the user state their feelings or write a letter to Mile’s mother. Figure A.1 in the Appendix includes sample images of the game. Participants took an average of 29 minutes to complete the game.

Video treatment This arm consisted of watching a short documentary, “Walking for Freedom.” It lasts 6:39 minutes and depicts the struggles of Venezuelan migrants who cross the border into Colombia on foot to escape a humanitarian crisis. The video begins with sounds of roaring wind and images of the mountains in *El Páramo de Berlín*, a common migration route, with a caption that reads, “3,223 meters of altitude in its highest elevation point, minimum temperature -5 Celsius.” It then shows migrants walking on the road while

⁷For more details, visit <https://enotrozapatos.iadb.org/>.

female voiceovers offer reasons for leaving Venezuela, including one that says: “If I had stayed in Venezuela, I would be without a child.” This is followed by footage of migrants at an official border crossing where a woman reports that her son died from lack of oxygen in Venezuela. The video subsequently shows images of the *trochas*, illegal border crossings, with a woman’s voice saying she crossed through the trocha but was separated from her son and has not seen him in four days. The fourth location shown is a refuge for migrant women and children. The woman running the refuge, herself a Venezuelan migrant, also shares emotive stories and explains that amid freezing temperatures, the male migrants need to sleep outside due to lack of space. Then there is footage of dozens of men sleeping on the cold street at night and images from inside the refuge that show dozens of women with their children. A woman then narrates how much her body hurt after walking for so long in the cold. After that, a banner is shown that reads: “The Venezuelan people have become one of the largest displaced groups in the world. More than 5 million Venezuelans have escaped their country. This is approximately 17.6% of the population of their country.” The movie continues with several emotional migrant testimonies, many of them about family separation, until the end when a banner appears that reads: “More help is needed.” Figure A.2 of the Appendix includes sample images of the video.

2.2 Sample and randomization

Our experiment took place between October 15th and November 23rd of 2020. We partnered with Rosario Experimental and Behavioral Economics Lab (REBEL), the first behavioral economics lab in South America, which is located at Universidad del Rosario, a renowned university in Colombia.⁸ The experiment was originally going to be conducted in person at the lab, but the campus was closed during 2020 due to the COVID-19 pandemic, so we conducted the experiment online.

We used the same recruiting process REBEL usually employs for their experiments. Individuals invited to the experiment are part of REBEL’s subjects pool, which includes university students (at both the undergraduate and graduate levels) and nonstudents.⁹ The lab sent an email to their subject pool that invited recipients to participate in an online experiment for no more than an hour in exchange for a monetary in-

⁸For information about the lab, visit <https://www.urosario.edu.co/Rebel/Inicio/?lang=ENG>.

⁹Students are recruited from the most important universities in Bogotá: Universidad del Rosario, Universidad de los Andes, Universidad Tadeo Lozano, Universidad Externado de Colombia, Universidad Javeriana, Universidad Nacional, Universidad Central, Universidad Colegio Mayor de Cundinamarca, and Universidad de la Salle. Nonstudents are recruited among employees of Universidad del Rosario and other partner public institutions such as the Colombian Central Bank.

centive.¹⁰ The invitation did not provide any information about our hypotheses. A total of 2,132 individuals were sent the invitation, and a total of 897 individuals registered successfully and showed up to their experiment sessions. Of these, 858 completed the activity. (Connectivity issues predominantly explained the 4.3 percent attrition rate). The requirements to register for the experiment were: to be older than 18 years of age, to be available for one hour, to have a computer with a stable internet connection, and to have access to an online financial platform to receive the compensation. The compensation could be received through three different, commonly used financial platforms in Colombia.

Once participants registered, they were individually randomized to one of three groups (game, video, and control) and received a Zoom link to connect to an online meeting. The meetings were carried out by treatment group to facilitate the provision of support in case technical difficulties arose (45 sessions were carried out).¹¹ The sessions had different schedules to accommodate respondents' availability, and the average size of each Zoom meeting was 19 participants. Once individuals connected to the meeting, they received instructions and had the opportunity to chat with the technician if they had technical problems. Individuals in the meetings did not interact with or see one another.

After the intervention, all participants answered a survey. All the questions used in the analysis are provided in section A of the online Appendix.¹² Our study's main outcomes, as mentioned in our preanalysis plan, are: prosocial behaviors (altruism and trust), attitudes towards migrants, and empathy and perspective taking. We also observe whether the intervention modified beliefs about the impacts of migration. The survey collected additional information on sociodemographic characteristics and comprehension assessments for the game and the video.

We stratified invitations by gender to attain a balanced sample in this dimension due to documented differences in altruistic behavior between men and women [41]. In addition, we stratified sessions by student status to increase the external validity of our results relative to what would have resulted from working with a sample of only university students.¹³ However, after three sessions of the game treatment, we noticed

¹⁰REBEL paid participants a show-up fee equivalent to 2.5 dollars plus an extra 5 dollars to those who completed the activity. Participants could also obtain a maximum of 2.5 dollars in addition as a result of the dictator game. In 2020, the minimum hourly wage in Colombia was approximately 1.3 dollars.

¹¹This type of randomization has the additional advantage of preventing participants from figuring out the hypotheses of the study. For example, if participants from both the game and video treatments had been in the same session and asked the technician for help, the technician might have inadvertently revealed the existence of different activities.

¹²The survey instrument contained additional questions (beyond those used in the analysis) that were of interest to the Inter-American Development Bank.

¹³In the preanalysis plan, we intended to stratify only by gender because we thought we would be working with a sample of

more women than men were attending the sessions. To correct this, we applied gender quotas and increased the number of sessions of the game group, which yielded a larger sample size for this group. In the end, we obtained gender balance in the control group and the video treatment group (with around 50 percent of women in each group); balance improved in the game treatment group but it still had more women, around 60 percent. In the student-status dimension, since more students registered overall, our sample had around 60 percent of students in each treatment group. The final sample sizes were: 272 for the control group, 316 for the game treatment group, and 243 for the video treatment group.¹⁴ Table 1 shows the treatment randomization was successful and the sample was balanced in terms of covariates, except for gender. We control for the stratification variables (gender and student status) in all of our regressions. Table B.1 shows descriptive statistics of our sample.

2.3 Outcomes

We evaluate the impacts of our intervention on three groups of prespecified primary outcomes: (i) prosocial behaviors, including altruism and trust; (ii) attitudes towards migrants; and (iii) perspective taking and empathetic concerns as possible mechanisms. These outcomes are described below (Appendix C.1 describes all the outcomes in the paper in detail). We also explore whether the treatments affected beliefs about the effects of migration on the country.

Our first outcomes group is prosocial behaviors: altruism and trust. We measure altruism through an incentivized dictator game. Participants were presented with the following situation: “At the end of this survey you will receive 10,000 additional COP. You can keep that money or you can donate it to the following organizations in Colombia. How would you like to distribute this money between: a) Yourself; b) *Fundación Juntos se Puede* (Together we Can Foundation): an organization that supports Venezuelan immigrants to access health, education, and legal advice; and c) *Un Techo para mi País* (A Roof for my Country): an organization that supports vulnerable populations in Colombia (they build houses for Colombians)?”.¹⁵ Our altruism outcomes are: an indicator for donating to the Venezuelan charity (*Together we Can Foundation*)

university students, but later we learned that REBEL’s subject pool contains nonstudent adults as well.

¹⁴In the preanalysis plan, we stated that we would collect a sample of 600. This size was mandated mainly by budgetary constraints. The experiment ended up taking place online instead of in person due to the campus closure, which reduced costs and allowed us to increase the sample size to 897.

¹⁵A similar question was implemented by (author?) [8]. In their question, however, not all participants received a direct transfer but were told they were enrolled in a lottery to win 1,000 dollars. In our survey, a participant’s decision translates to effective action and is not simply associated with a probability of donation.

and an indicator for donating to the national charity (*A Roof for my Country*). To measure trust, we asked respondents how much they agreed with the phrase, “One can trust Venezuelan migrants,” on a four-point scale from “strongly disagree” to “strongly agree.”

To measure attitudes, we collected five questions. We asked participants: “Is the poverty of a Venezuelan more likely explained by lack of self-effort or by circumstances beyond their control?”; “Should Colombians have the right to keep Venezuelans out of their neighborhoods?”; “Should Colombians have the first opportunity at a job?”; “Is the government obligated to help Venezuelan migrants?”; and “Would you vote for a policy to increase spending towards Venezuelan migrants?”.

To measure empathy and perspective taking, we use two subscales from the Interpersonal Reactivity Index formulated by (author?) [42, 24]. (author?) [43] have validated the scale in Colombia. The questions allow for the construction of *empathic concern* (EC) and *perspective-taking* (PT) scales. The EC scale has eight statements that assess the tendency to experience feelings of sympathy and compassion for unfortunate others. The PT scale has six statements that measure the reported tendency to spontaneously adopt the psychological points of view of others in everyday life. All the statements are listed in section A of the online Appendix that contains the survey instrument.¹⁶ For each of the 14 statements, the respondent answers by choosing from a five-point scale from zero to four, where zero represents “does not describe me well” and four represents “describes me very well.” According to the answer, the respondent gets a score from zero to four. The total score is the sum of the scores across questions.

Finally, we explore if the treatments affected beliefs about the impacts of migration in the country.¹⁷ We ask respondents five questions: “Are immigrants good for the economy?”; “Do they compete with natives for jobs?”; “Do they contribute to increases in crime?”; “Do they bring new ideas?”; and “Overall, do they contribute more to the country than they take from it?”.

¹⁶A few examples of these statements include: “I often have tender, concerned feelings for people less fortunate than me”; “I sometimes find it difficult to see things from the ‘other guy’s’ point of view”; “Sometimes I don’t feel very sorry for other people when they are having problems”; or “I try to look at everybody’s side of a disagreement before I make a decision.”

¹⁷These outcomes were not prespecified.

3 Results

3.1 Empirical specification

We evaluate the impacts of the game and video interventions on outcome y by using the following specification:

$$y_i = \alpha + \beta_1 \text{Game}_i + \beta_2 \text{Video}_i + \mathbf{X}'_i \beta_X + \varepsilon_i, \quad (1)$$

where i indexes participants, $\text{Game} \in \{0, 1\}$ equals one for participants assigned to the *In Someone Else's Shoes* online game and zero otherwise, $\text{Video} \in \{0, 1\}$ equals one for participants assigned to watch the documentary *Walking for Freedom* and zero otherwise, and \mathbf{X} is a vector of controls including the stratification covariates (gender and student status).

In order to account for multiple hypotheses testing, we report—for each group of outcomes, except for the EC and PT scales—sharpened False Discovery Rate (FDR) q-values and the p-values of the Young Westfall-Young joint test of the sharp hypothesis that no treatment has any effect. We also construct an index for each group of outcomes following the methodology in [44] and then apply to the indices the same procedure to account for multiple hypotheses (i.e., FDR q-values and the Young Westfall-Young test).

3.2 Comprehension, immersion, and emotions assessments

We assessed if participants paid attention during the game and video tasks by asking three comprehension questions about the activities. For the game group, we checked if respondents recalled the name of the game's main character, her birthplace, and the two destinations she was considering. We asked the video group to name the title of the movie, recall approximately how many Venezuelans had left their country since the humanitarian crisis began—a figure that was shown during the movie—and which migrants could sleep in the shelter shown in the movie. Figure B.1 in the Appendix illustrates the results of the comprehension assessment. The results suggest that respondents were attentive to both activities, but more to the game. Specifically, approximately 90 percent of participants in the game task and 70 percent of participants who watched the video answered the three comprehension questions correctly.

We also assessed if participants were immersed in the activities by asking: “How much did you feel the experience of the Venezuelan migrant was an extension of yourself?”. (Possible answers were: completely, quite a bit, a little, and none).¹⁸ As Figure B.3 shows, a majority of individuals in both groups reported feeling that the migrant’s experience was an extension of themselves at least quite a bit or completely (64.5 percent for the game and 58.0 percent for the video). This suggests a high level of involvement in the activities.

Finally, we included questions to understand how the treatments affected participants’ emotions. We asked participants to choose a number from 1 (little feeling) to 10 (intense feeling) to evaluate the extent to which they felt compassion, distress, or happiness from participating in the online interactive game or watching the video. Figure B.2 presents the results, which show that both treatments induced higher levels of compassion and distress to a similar extent and lower levels of happiness; the game induced lower happiness than the video.

3.3 Treatment effects on prosociality

Our main finding is that both treatments increase altruism. We present the estimated impacts of the intervention on altruism and trust outcomes in Table 2. Figure C.1 in the Appendix shows the raw data. Both the game and the video have a positive and significant impact on the probability of donation to a Venezuelan NGO of 10.6 percentage points (p.p.) and 11.1 p.p., respectively. Given that the probability of donation for the control group is 66.7 percent, these effects amount to an increase of approximately 15.9 and 16.6 percent, respectively. We cannot reject the null hypothesis that these treatment effects are equal. The treatments have a small and nonsignificant impact on the donation to a nonmigrant NGO, which implies that they generated changes in altruistic behavior towards migrants but not towards the general population. Conditional on donating to a Venezuelan NGO, treatment recipients, on average, donated 2.4 percent more.

Regarding trust towards Venezuelan migrants, the point estimates for both the game and video are positive, but only the game has a statistically significant impact. The game increases trust towards Venezuelans by 0.29 standard deviations relative to the control group. In addition, the hypothesis that the game and the video have the same impact on trust is rejected, with a p-value of 0.033.

¹⁸This question was adapted from [45]’s *self-presence* scale.

The treatment effects on the index of prosociality, constructed with variables in columns (1) – (3) in Table 2, are positive and statistically significant for both treatments, with the game increasing prosociality by 0.27 standard deviations and the video increasing it by 0.20 standard deviations. We cannot reject the null that these two effects are equal.

3.4 Treatment effects on attitudes

We examine the effects of the interventions on five attitudes towards migrants in Table 3 (Figure C.2 shows the raw data). All the outcomes are codified in a way such that a positive coefficient is interpreted as a more positive attitude. Both the game and video treatments have a positive and significant impact, of 8.9 p.p. and 10.5 p.p., respectively, on the assessment that circumstances beyond a Venezuelan migrant’s control are most related to poverty (versus lack of self-effort), which amounts to an increase of 11.2 and 13.2 percent, respectively. Although the point estimates are positive, the treatments do not have a significant impact on attitudes about equal job opportunities for Venezuelan migrants and natives or on attitudes about the right to segregate migrants from neighborhoods. Finally, regarding policy attitudes about government support of and increased spending on Venezuelan migrants, both treatments have positive and significant effects. Overall, both treatments improve the attitudes index by 0.33 standard deviations.

3.5 Potential mechanisms: Empathy and perspective taking

We explore, as stated in our preanalysis plan, the role of changes in empathy and perspective taking as possible mechanisms for the treatment effects on prosocial behaviors and attitudes. For this purpose, we estimate Equation 1 using the two subscales that measure empathic concern and perspective taking described earlier as outcomes. (See section C.1 in the Appendix for details).

The results in Table 4 (raw data in Figure C.3) indicate that the game intervention increases the perspective-taking scale by 0.18 standard deviations. Although the point estimates are positive, the video does not have statistically significant effects on any of the scales. The effect of the game on the PT scale is less precise when we account for multiple hypotheses testing, with a p-value of 0.11. The results align with the objectives of the game activity and with the fact that the game requires more involvement since participants not only watch and listen but also make decisions and express ideas from the perspective of a migrant.

3.6 Treatment effects on beliefs

We also conducted an exploratory analysis (not prespecified) on respondents' beliefs about the impacts of migration on the economy and on society. As shown in Table 5 (raw data in Figure C.4), the interventions have no statistically significant impact on commonly held beliefs that Venezuelan migrants compete with natives for jobs or that they increase crime rates. However, the game does have a positive and significant impact (0.28 standard deviations; $p < 0.01$) on the belief that "immigrants contribute more to a country than they take from it." We find this last result interesting because many interventions use as outcomes the commonly held beliefs about crime or jobs but do not measure beliefs about "net" effects. This suggests that asking individuals about the net contributions of immigrants could be important for future research.

3.7 Heterogeneous effects

We explored for heterogeneous effects of the game and video by gender, student status, and income group. Although our experimental design only stratifies by gender and student status, we also evaluate the effects of the video and the game by income levels, considering that low-income individuals might be disproportionately affected by immigrants and may have different reactions to the treatment. The estimates are in Tables 6, 7, and 8.

We document three interesting patterns. First, concerning gender effects, we find that women improve more their prosociality and attitudes towards migrants after playing the game relative to men. The video has the opposite effect. We speculate that this result may be related with the fact that the main character on the game is a woman.

Second, both treatments make students less prosocial and worsen their attitudes towards migrants, relative to non-students (with the exception of the effects of the game on prosocial behaviors). This result may be correlated with age and the fact that younger individuals may be more affected by the positive shock on labor supply caused by migrants, since the majority of Venezuelan migrants are also young.

Third, high income individuals show more positive responses to both treatments, relative to individuals of lower income. This last results is intuitive considering that lower income individuals may be competing more directly for jobs and public resources with migrants and may be more affected by their migration to Colombia.

3.8 Robustness

We test the robustness of our main estimates to the inclusion of the covariates in Table 1. To this purpose, we reestimate the treatment effects on the indices of prosociality, attitudes, and beliefs while controlling for these covariates. The results of this exercise are in Table B.2 in the Appendix.¹⁹ Since we report FDR adjusted p-values, this table is also a check that treatment effects on the indices are robust to adjusting for multiple hypotheses testing.

To gain a sense of the prevalence of experimenter demand effects in our sample, we included a list experiment in our survey instrument to assess the attitudes of respondents towards Venezuelan migrants indirectly. We asked *how many*—not *which*—of the following four situations annoyed respondents: (i) homeless people sleeping on the street, (ii) people talking loudly close to them, (iii) people who cut in line, or (iv) people from other countries coming to live in their country. The last statement was randomly assigned to only half the sample. Figure B.4 presents the average number of angry responses for the group that received three options and for the group that received four options, for both the control and treatment groups. In the control group, respondents who received three options are annoyed, on average, by 1.96 situations and respondents who received four options are annoyed by 2.08 situations, suggesting that 12 percent of the sample are annoyed by migrants coming to live in their country.²⁰ Both treatments reduce the mean angry responses for the four-options group compared to the control group. In the case of the game, this drops by 15 p.p. (from 2.08 to 1.93); in the case of the video, it falls by 5 p.p. (from 2.08 to 2.03). These results imply that improvements in attitudes towards migrants in our sample are unlikely to be driven by social desirability bias and experimenter demand effects.

We also explore the role of social desirability bias in our results in Table B.3 in the Appendix. The table estimates the impacts of each treatment arm on the prosociality, attitudes, and beliefs indices, adding interactions of each of the treatment arms and an indicator variable of low social desirability score. We measure social desirability bias by using four questions from Marlone and Crowe’s social desirability scale (see 46 for details). The questions assess whether or not respondents are concerned with social approval. A high number of socially desirable responses suggests the respondent is concerned with social approval. Each question on the scale includes a statement to which the respondent must answer true or false. The four

¹⁹All our results on individual outcomes (available upon request) remain qualitatively unchanged.

²⁰This is calculated as the difference in mean angry responses between the four-options group and the three-options group (2.08-1.96=0.12).

questions we included are: “It is sometimes hard for me to go on with my work if I am not encouraged (false corresponds to higher social desirability)”; “There have been times when I was quite jealous of the good fortune of others (false corresponds to higher social desirability)”; “I am always willing to admit when I make a mistake (true corresponds to higher social desirability)”; and “I am always courteous, even to people who are disagreeable (true is associated with higher social desirability).” Each statement gets a score of zero or one (assigned to higher social desirability answers), and the total level of social desirability bias is calculated by summing the scores of all questions. Based on these questions, we created a dichotomous variable equal to one when the individual had a social desirability score below the median score of all participants. The results suggest no heterogeneous effects for individuals with different social desirability scores in our sample.

4 Conclusion

Prejudice against migrants can have damaging economic consequences for migrants themselves and for all of society. With grounding in social psychology insights, we designed and evaluated the impact of two online, perspective-taking interventions on prosociality and attitudes towards migrants by exposing Colombian participants to a game where they play the role of a Venezuelan migrant or to a video that depicts the struggles of Venezuelan migrants crossing the Colombian border on foot.

Our main finding is that both interventions improved altruism and some attitudes towards migrants. The game specifically improved trust and the belief that immigrants contribute more to a country than they take from it. Regarding mechanisms, the game seems to have improved the ability of participants to take the perspectives of others.

Our results can be useful to policymakers and to private organizations that seek low-cost interventions to reduce prejudice.

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5 Tables and Figures

Table 1
Covariate Balance

	(1)	(2)	(3)	(4)	(5)
	All	Control	Game T.	Video T.	Obs
Student [=1]	0.621 (0.485)	0.614 (0.030)	0.019 (0.040)	-0.001 (0.043)	831
Male [=1]	0.464 (0.499)	0.493 (0.030)	-0.080* (0.041)	0.005 (0.044)	828
Age	25.255 (8.271)	24.985 (0.487)	0.328 (0.658)	0.496 (0.760)	829
Married [=1]	0.066 (0.249)	0.048 (0.013)	0.031 (0.020)	0.022 (0.021)	831
Religious [=1]	0.798 (0.402)	0.794 (0.025)	0.013 (0.033)	-0.004 (0.036)	831
Primary education completed [=1]	0.025 (0.157)	0.033 (0.011)	-0.017 (0.013)	-0.004 (0.015)	830
Secondary education completed [=1]	0.566 (0.496)	0.596 (0.030)	-0.045 (0.041)	-0.042 (0.044)	830
Higher education completed [=1]	0.408 (0.492)	0.371 (0.029)	0.062 (0.041)	0.046 (0.043)	830
Income (1 low- 10 high)	2.329 (1.072)	2.364 (0.070)	-0.090 (0.092)	-0.005 (0.095)	821
Low economic strata [=1]	0.726 (0.446)	0.732 (0.027)	0.015 (0.036)	-0.040 (0.040)	831
Children [=1]	0.143 (0.350)	0.143 (0.021)	-0.007 (0.029)	0.009 (0.031)	831

Notes: The first column presents the mean and standard deviation for the full sample. Columns (2) – (4) present the coefficients and robust standard errors (in parentheses) of an OLS regression using as dependent variable the corresponding covariate and the treatment dummies as regressors. *, **, *** indicate whether the coefficients are significant at the 10%, 5%, 1% levels. Additionally, we performed a joint orthogonality test by running a Multinomial Logit where the dependent variable is the assigned treatment, the explanatory variables are all the covariates in this table, and the base group is the control group. The joint orthogonality test p-value is 0.559.

Table 2
Treatment Effects on Prosocial Behavior

	(1)	(2)	(3)	(4)
	Donation Venezuelan org.	Donation non-migrant org.	Trust	Prosociality Index
Game Treatment	0.106 (0.037) [0.008]	0.027 (0.034) [0.264]	0.297 (0.080) [0.002]	0.267 (0.080)
Video Treatment	0.111 (0.039) [0.008]	0.038 (0.035) [0.207]	0.116 (0.090) [0.178]	0.201 (0.089)
Observations	828	828	828	828
R-squared	0.016	0.005	0.016	0.016
Mean dep var	0.667	0.781	0.000	0.000
Diff. pvalue	0.879	0.752	0.033	0.430
YWY joint test	.009	.44	.001	

Notes: This table reports OLS estimates from Equation 1. Robust standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. All the regressions control for gender and student status. “Donation Venezuelan org.” and “Donation nonmigrant org.” are dummy variables that take the value of 1 if the respondent chose option b (to donate to a Venezuelan organization) and c (to donate to a nonmigrant organization), respectively, in the question “At the end of this survey you will receive 10,000 additional COP. You can keep that money or you can donate it to the following organizations in Colombia. How would you like to distribute that money between? a. You; b. Fundación Juntos se Puede, an organization that supports Venezuelan migrants in Colombia to access health, education, and legal advice, and c. Un techo para mi país: an organization that builds houses for the vulnerable population in Colombia.” “Trust” is the (z-scored) answer to the question: “One can trust in Venezuelan migrants” on a four-point scale from 4-strongly disagree to 1-strongly agree. “Prosociality Index” is constructed with the dependent variables of columns (1) to (3) using the methodology in [44]. Mean dep. reports the mean of the dependent variable in the control group. Diff. p-value reports the p-value of a Wald test of equality of coefficients between the game treatment and video treatment. YWY reports the sharpened False Discovery Rate (FDR) q-values. The Young Westfall-Young joint test of the sharp hypothesis that no treatment has any effect on the outcomes has a p-value of 0.003.

Table 3
Treatment Effects on Attitudes

	(1)	(2)	(3)	(4)	(5)	(6)
	Effort	Same job opportunity	Segregate	Government must help	Increase gov. spending	Attitudes Index
Game Treatment	0.089 (0.031) [0.005]	0.048 (0.041) [0.151]	0.079 (0.081) [0.172]	0.299 (0.082) [0.001]	0.413 (0.081) [0.001]	0.334 (0.079)
Video Treatment	0.105 (0.031) [0.002]	0.017 (0.044) [0.395]	0.095 (0.084) [0.151]	0.266 (0.091) [0.005]	0.453 (0.086) [0.001]	0.332 (0.085)
Observations	826	826	827	827	827	827
R-squared	0.019	0.005	0.006	0.018	0.044	0.028
Mean dep var	0.793	0.000	0.000	0.000	0.000	-0.015
Diff. pvalue	0.550	0.462	0.849	0.708	0.628	0.987
YWY joint test	.002	.361	.41	.003	0	

Notes: This table reports OLS estimates from Equation 1. Robust standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. All the regressions control for gender and student status. “Effort” is a dummy that equals 1 if the respondent chose option “b” in the question “Which relates the most to the poverty of a Venezuelan immigrant living in Colombia? a. lack of effort on his or her own part, or b. circumstances beyond his or her control.” “Same job opportunity” is a dummy that equals 1 if the respondent chose option “a” in the question “Please read the following statements and choose one: a. Venezuelan immigrants should have as good a chance as anyone to get any kind of job in Colombia, or b. Colombians should have the first chance at any kind of job.” “Segregate” is the (z-scored) answer to the question “Colombians have the right to keep Venezuelan immigrants out of their neighborhoods and Venezuelans should respect that right” on a four-point scale from 4-strongly disagree to 1-strongly agree (it was rescaled so that a positive coefficient indicates more positive attitudes). “Government must help” is the (z-scored) answer to the question: “The Colombian government is obligated to help Venezuelan immigrants” on a four-point scale from 1-strongly disagree to 4-strongly agree. “Increase gov. spending” is the (z-scored) answer to the question: “I would vote for a policy to increase government spending to assist Venezuelan immigrants” on a four-point scale from 1-strongly disagree to 4-strongly agree. “Attitudes Index” is constructed with the dependent variables of columns (1) to (5) using the methodology in [44]. Mean dep. reports the mean of the dependent variable in the control group. Diff. p-value reports the p-value of a Wald test of equality of coefficients between the game treatment and video treatment. YWY reports the sharpened False Discovery Rate (FDR) q-values. The Young Westfall-Young joint test of the sharp hypothesis that no treatment has any effect on the outcomes has a p-value of 0.001.

Table 4
Treatment Effects on Empathy and Perspective Taking

	(1)	(2)
	Empathic scale	Perspective-taking scale
Game Treatment	-0.050 (0.078) [0.306]	0.181 (0.080) [0.110]
Video Treatment	0.117 (0.081) [0.213]	0.114 (0.084) [0.213]
Observations	828	828
R-squared	0.081	0.009
Diff. pvalue	0.033	0.393
YWY joint test	.271	.041

Notes: This table reports OLS estimates from Equation 1. Robust standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. All the regressions control for gender and student status. The scales in column (1) and (2) come from the Interpersonal Reactivity Index (IRI) originally formulated by [42, 24]. The empathic concern scale has eight statements that assess the tendency to experience feelings of sympathy and compassion for unfortunate others. The perspective-taking scale has seven statements that measure the reported tendency to spontaneously adopt the psychological point of view of others in everyday life. For each of the 15 statements, the respondents answer by choosing from a scale from zero to four, where zero represents “does not describe me well” and four represents “describes me very well.” According to the answer the respondent gets a score of zero to four, respectively, and the total score is the sum of partial scores. Diff. p-value reports the p-value of a Wald test of equality of coefficients between the game treatment and video treatment. YWY reports the sharpened False Discovery Rate (FDR) q-values. The Young Westfall-Young joint test of the sharp hypothesis that no treatment has any effect on the outcomes has a p-value of 0.07.

Table 5
Treatment Effects on Beliefs

	(1)	(2)	(3)	(4)	(5)	(6)
	Economy	Compete jobs	Crime	New ideas and cultures	Contribute	Beliefs Index
Game Treatment	0.099 (0.081) [1.000]	0.091 (0.080) [1.000]	0.073 (0.080) [1.000]	0.008 (0.084) [1.000]	0.280 (0.082) [0.007]	0.161 (0.081)
Video Treatment	-0.072 (0.087) [1.000]	-0.009 (0.085) [1.000]	0.029 (0.087) [1.000]	-0.032 (0.089) [1.000]	0.140 (0.087) [0.983]	0.016 (0.087)
Observations	827	826	827	827	827	827
R-squared	0.012	0.023	0.011	0.001	0.016	0.007
Diff. pvalue	0.039	0.219	0.591	0.644	0.099	0.083
YWY joint test	.325	.405	.53	.9	0	

Notes: This table reports OLS estimates from Equation 1. Robust standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. All the regressions control for gender and student status. “Economy” is the (z-scored) answer to the question “Immigrants are good for a country’s economy” on a four-point scale from 1-strongly disagree to 4-strongly agree. “Compete jobs” is the (z-scored) answer to the question: “Immigrants come to compete for our jobs” on a four-point scale from 4-strongly disagree to 1-strongly agree (it was rescaled so that a positive coefficient indicates more positive attitudes). “Crime” is the (z-scored) answer to the question: “Immigrants increase crime” on a four-point scale from 4-strongly disagree to 1-strongly agree (it was rescaled so that a positive coefficient indicates more positive attitudes). “New ideas and cultures” is the (z-scored) answer to the question: “Immigrants improve our society by bringing new ideas and cultures” on a four-point scale from 1-strongly disagree to 4-strongly agree. “Contribute” is the (z-scored) answer to the question: “In general, immigrants contribute more to a country than they take away from it.” “Beliefs Index” is constructed with the dependent variables of columns (1) to (5) using the methodology in [44]. Mean dep. reports the mean of the dependent variable in the control group. Diff. p-value reports the p-value of a Wald test of equality of coefficients between the game treatment and video treatment. YWY reports the sharpened False Discovery Rate (FDR) q-values. The Young Westfall-Young joint test of the sharp hypothesis that no treatment has any effect on the outcomes has a p-value of 0.001.

Table 6
Heterogenous Effects on Indices by Gender

	(1)	(2)	(3)
	Prosociality	Attitudes	Beliefs
	Index	Index	Index
Game Treatment	0.248	0.275	0.202
	(0.124)	(0.120)	(0.125)
Game x Female [=1]	0.034	0.100	-0.079
	(0.162)	(0.160)	(0.163)
Video Treatment	0.207	0.402	0.076
	(0.131)	(0.123)	(0.126)
Video x Female [=1]	-0.011	-0.139	-0.118
	(0.179)	(0.170)	(0.173)
Female [=1]	0.062	0.046	0.093
	(0.122)	(0.121)	(0.119)
pval: Game + Game x Female = 0	0.007	0.000	0.240
FDR qval: Game + Game x Female = 0	0.018	0.001	0.169
pval: Video + Video x Female = 0	0.107	0.024	0.725
FDR qval: Video + Video x Female = 0	0.088	0.034	0.319
Observations	828	827	827
R-squared	0.016	0.031	0.008

Notes: This table reports OLS estimates from Equation 1. Robust standard errors are reported in parentheses. All regressions control for student dummy (takes the value of 1 if the person is a student, and 0 otherwise). The dependent variables are constructed using the methodology in [44] for each group of outcome variables: prosocial behavior outcomes, beliefs outcomes and attitudes outcomes. pval: Game + Game x Female = 0 and pval: Video + Video x Female = 0 report the p-value of a Wald test of each linear combination. FDR qval: Game + Game x Female = 0 and FDR qval: Video + Video x Female = 0 report the False Discovery Rate (FDR) q-values of the Wald test of each linear combination.

Table 7
Heterogenous Effects on Indices by Student

	(1)	(2)	(3)
	Prosociality	Attitudes	Beliefs
	Index	Index	Index
Game Treatment	0.261	0.405	0.245
	(0.139)	(0.135)	(0.138)
Game x Student [=1]	0.009	-0.115	-0.136
	(0.170)	(0.167)	(0.170)
Video Treatment	0.266	0.426	0.107
	(0.150)	(0.143)	(0.146)
Video x Student [=1]	-0.106	-0.152	-0.147
	(0.187)	(0.177)	(0.181)
Student [=1]	0.012	0.128	0.039
	(0.130)	(0.127)	(0.124)
pval: Game + Game x Student = 0	0.005	0.003	0.269
FDR qval: Game + Game x Student = 0	0.016	0.016	0.193
pval: Video + Video x Student = 0	0.147	0.009	0.706
FDR qval: Video + Video x Student = 0	0.124	0.016	0.308
Observations	828	827	827
R-squared	0.016	0.029	0.008

Notes: This table reports OLS estimates from Equation 1. Robust standard errors are reported in parentheses. All regressions control for student dummy (takes the value of 1 if the person is a student, and 0 otherwise). The dependent variables are constructed using the methodology in [44] for each group of outcome variables: prosocial behavior outcomes, beliefs outcomes and attitudes outcomes. pval: Game + Game x Student = 0 and pval: Video + Video x Student = 0 report the p-value of a Wald test of each linear combination. FDR qval: Game + Game x Student = 0 and FDR qval: Video + Video x Student = 0 report the False Discovery Rate (FDR) q-values of the Wald test of each linear combination.

Table 8
Heterogenous Effects on Indices by Income

	(1)	(2)	(3)
	Prosociality	Attitudes	Beliefs
	Index	Index	Index
Game Treatment	0.219	0.323	0.195
	(0.099)	(0.093)	(0.094)
Game x High income [=1]	0.158	0.036	-0.112
	(0.164)	(0.176)	(0.180)
Video Treatment	0.192	0.291	-0.025
	(0.112)	(0.103)	(0.102)
Video x High income [=1]	0.020	0.125	0.113
	(0.183)	(0.182)	(0.189)
High income [=1]	0.113	0.007	0.171
	(0.127)	(0.133)	(0.130)
pval: Game + Game x High income = 0	0.004	0.017	0.593
FDR qval: Game + Game x High income = 0	0.019	0.024	0.274
pval: Video + Video x High income = 0	0.143	0.006	0.580
FDR qval: Video + Video x High income = 0	0.121	0.019	0.274
Observations	828	827	827
R-squared	0.024	0.030	0.015

Notes: This table reports OLS estimates from Equation 1. Robust standard errors are reported in parentheses. All regressions control for student dummy (takes the value of 1 if the person is a student, and 0 otherwise). The dependent variables are constructed using the methodology in [44] for each group of outcome variables: prosocial behavior outcomes, beliefs outcomes and attitudes outcomes. pval: Game + Game x High income = 0 and pval: Video + Video x High income = 0 report the p-value of a Wald test of each linear combination. FDR qval: Game + Game x High income = 0 and FDR qval: Video + Video x High income = 0 report the False Discovery Rate (FDR) q-values of the Wald test of each linear combination.

Appendix

A Images of Interventions

Figure A.1
The game intervention



Notes: English version of top left image: "Mile Rodriguez, Venezuela Migrant - You live in Maracaibo, the capital city of the Zulia state. The quiet and prosperous days are far away, you slowly started accumulating frustration after frustration, but you always comforted yourself with the idea that at some point things were going to change." English version of top right image: "You know that no one wants to leave their native country, much less if there is so much uncertainty, but the despair is such and the absence of opportunities becomes so acute that you have no other options. You want your journey to be as smooth and safe as possible, more importantly, you don't want anything to happen to your family, to your little ones. Because, if something were to happen to your family, what is the point of living anymore? Everything you are doing is for them. That night you cry together, what you have cost you a lot, it is not easy to leave it all behind at once. Go somewhere else, permanently? The very idea of it terrifies you. What will you do in a place you don't know, without your family, without your things? A neighbor has told you that going to Riohacha, a northern city of Colombia, is a good temporary solution. Your husband does not seem convinced, he prefers to go directly to Bogota, gamble it all in the capital. After all, that is the advantage of capitals, there are more opportunities. A few hard-saving dollars over the years is all you have to face a new life. Faced with this situation, you must make a decision that will change your life, permanently." English version of bottom left image: "Mehi, honey, as I knew I would not be able to tell you anything when we said goodbye, I wanted to write you this letter with a couple of things that I had in mind as soon as you told me that you would leave this unlivable country. It hurts to not have my granddaughter around. I will miss Ana Sofia, when she used to cross the street and come here to play with the doggy's." English version of bottom right image: "To comfort your mother, would you like to write her a short message?"

Figure A.2
The video intervention



Notes: Images of the documentary "Walking for Freedom"

B Supplementary Tables and Figures

Table B.1
Descriptive Statistics

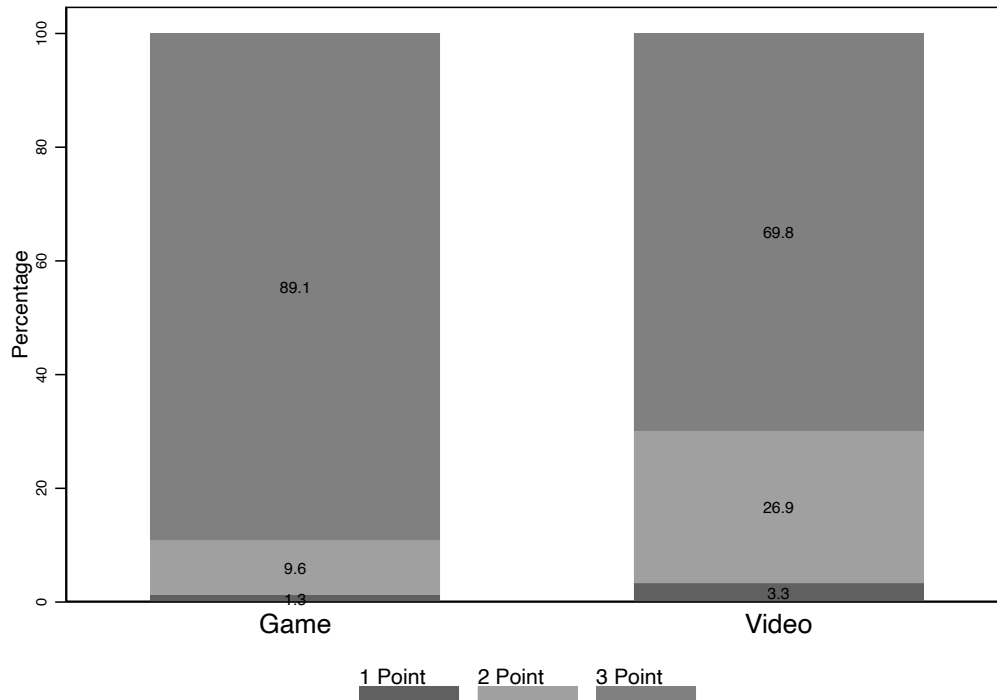
	N	Mean	SD	Min	Max
<i>Panel A: Sociodemographic characteristics</i>					
Male [=1]	828	0.46	0.50	0	1
Student [=1]	831	0.62	0.49	0	1
Age	829	25.25	8.27	18	78
Married [=1]	831	0.07	0.25	0	1
Religious [=1]	831	0.80	0.40	0	1
Primary education completed [=1]	830	0.03	0.16	0	1
Secondary education completed [=1]	830	0.57	0.50	0	1
Higher education completed [=1]	830	0.41	0.49	0	1
Income (1 low- 10 high)	821	2.33	1.07	1	10
Low economic strata [=1]	831	0.73	0.45	0	1
Children [=1]	831	0.14	0.35	0	1
<i>Panel B: Prosociality Indicators</i>					
Donated to Venezuelan org. [=1]	831	0.74	0.44	0	1
Donated to non-migrant org. [=1]	831	0.81	0.40	0	1
One can trust venezuelan migrants (4=Strongly agree)	831	2.70	0.67	1	4
Prosociality Index (Kling)	831	0.16	0.98	-3	1
<i>Panel C: Attitudes Indicators</i>					
List experiment: Annoyed by 4 situations	420	2.03	0.73	0	4
List experiment: Annoyed by 3 situations	409	1.82	0.60	0	3
Venezuelan are poor due to lack of self effort [=1]	829	0.14	0.35	0	1
Keep Venezuelans out of neighborhoods (4=Strongly agree)	830	1.90	0.76	1	4
Same opportunity for Venezuelans to apply for a job [=1]	829	0.58	0.49	0	1
Government should help Venezuelans (4=Strongly agree)	830	2.74	0.72	1	4
Increase gov. spending to help Venezuelans (4=Strongly agree)	830	2.49	0.80	1	4
Attitudes Index (Kling)	830	0.22	0.96	-3	2
<i>Panel D: Empathy Indicators</i>					
Empathic Concern Scale	831	0.03	0.96	-4	2
Perspective-taking Scale	831	0.10	0.95	-4	2
<i>Panel E: Beliefs Indicators</i>					
Migrants are good for the economy (4=Strongly agree)	830	2.51	0.76	1	4
Immigrants come to compete for our jobs (4=Strongly agree)	829	2.66	0.74	1	4
Immigrants increase crime (4=Strongly agree)	830	2.53	0.78	1	4
Immigrants improve the society with ideas (4=Strongly agree)	830	2.72	0.71	1	4
Immigrants contribute more than they take (4=Strongly agree)	830	2.48	0.76	1	4
Beliefs Index (Kling)	830	0.05	0.98	-3	3

Table B.2
Effects of the Intervention on Indices

	(1)	(2)	(3)
	Prosociality	Beliefs	Attitudes
	Index	Index	Index
Game Treatment	0.252 (0.081) [0.003]	0.151 (0.080) [0.038]	0.318 (0.078) [0.001]
Video Treatment	0.195 (0.090) [0.023]	0.013 (0.086) [0.172]	0.312 (0.084) [0.001]
Observations	815	814	814
R-squared	0.052	0.059	0.084
Diff. pvalue	0.491	0.096	0.939
YWY joint test	.003	.099	.001

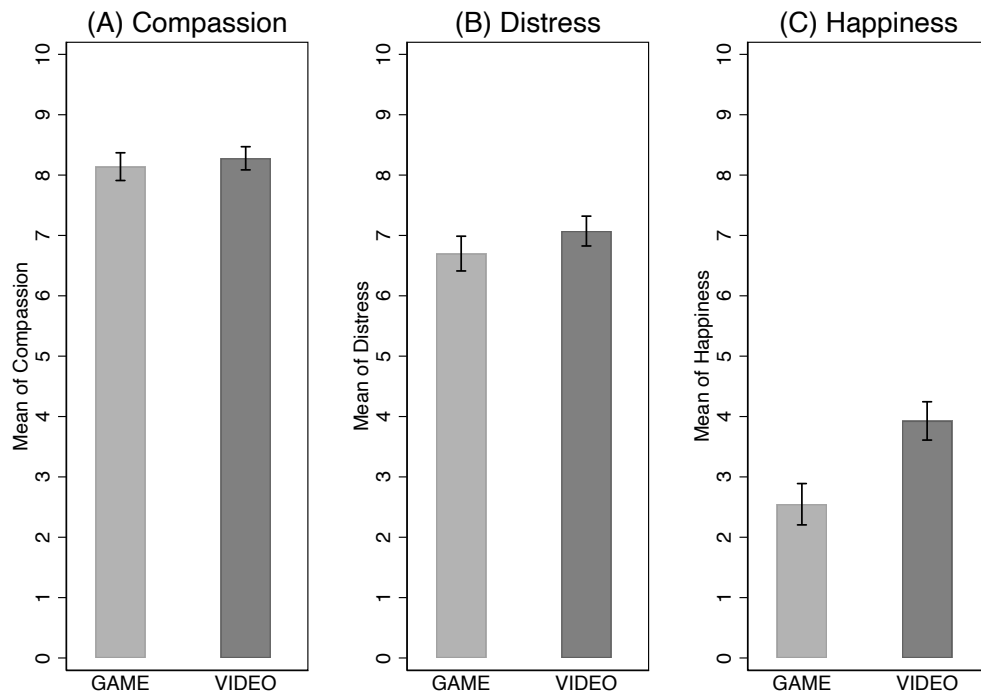
Notes: This table reports OLS estimates from equation 1. Robust standard errors are reported in parentheses and False Discovery Rate (FDR) q-values are reported in brackets. All regressions control for gender, student dummy (takes the value of 1 if the person is a student, and 0 otherwise), age, married (takes the value of 1 if the person is married, and 0 otherwise), catholic (takes the value of 1 if the person is a catholic, and 0 otherwise), education level dummies, income, economic strata (takes the value of 1 if the person belongs to a low economic strata, and 0 otherwise) and whether they have children or not. The dependent variables are constructed using the methodology in [44] for each group of outcome variables: prosocial behavior outcomes, beliefs outcomes and attitudes outcomes. Diff. p-value reports the p-value of a Wald test of equality of coefficients between the game treatment and video treatment. YWY reports the sharpened False Discovery Rate (FDR) q-values. The Young Westfall-Young joint test of the sharp hypothesis that no treatment has any effect on the outcomes has a p-value of 0.001

Figure B.1
Comprehension Assessment Score



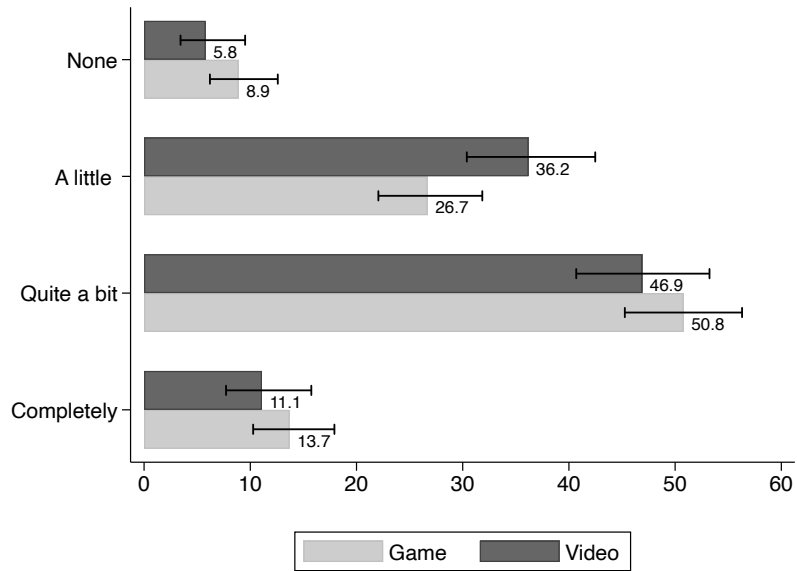
Notes: The figure illustrates the comprehension assessment score for the game and video treatments. Each answer was given a score of 1 if correct and 0 if incorrect. The score represents the sum of the three answers for each treatment. For the game treatment, the first question reads: "What was the name of the primary character of the story?". The possible answers were: "a. Mile"; "b. Lina"; "c. Diana"; and "d. Paola". The second question asked: "The primary character and her husband have to decide between leaving to". The answer options were: "a. Cúcuta and Bucaramanga"; "b. Bucaramanga and Bogotá"; "c. Riohacha and Bogotá"; and "d. Bucaramanga and Riohacha". The third question asks: "Where is the primary character from?". The respondents choose between: "a. Caracas"; "b. Cúcuta"; and "c. Maracaibo"; and "d. Manzanillo". For the respondents from the video treatment arm, the first question was: "What is the title of the video?". The possible choices were: "a. The perils of migrants"; "b. Walking for freedom"; and "c. Migration from Colombia to Venezuela". The second question reads: "Which of the following migrants are allowed to sleep in the shelter presented in the video". The answer options were: "a. Only children"; "b. Only women and children"; "c. All migrants (independent of sex and age)"; and "d. Only migrants that have a passport". Finally, the third question asked: "3. Approximately, how many Venezuelans have fled their country?". Respondents choose between: "a. 1 million"; "b. 3 million"; "c. 5 million"; and "d. 7 million".

Figure B.2
Emotions



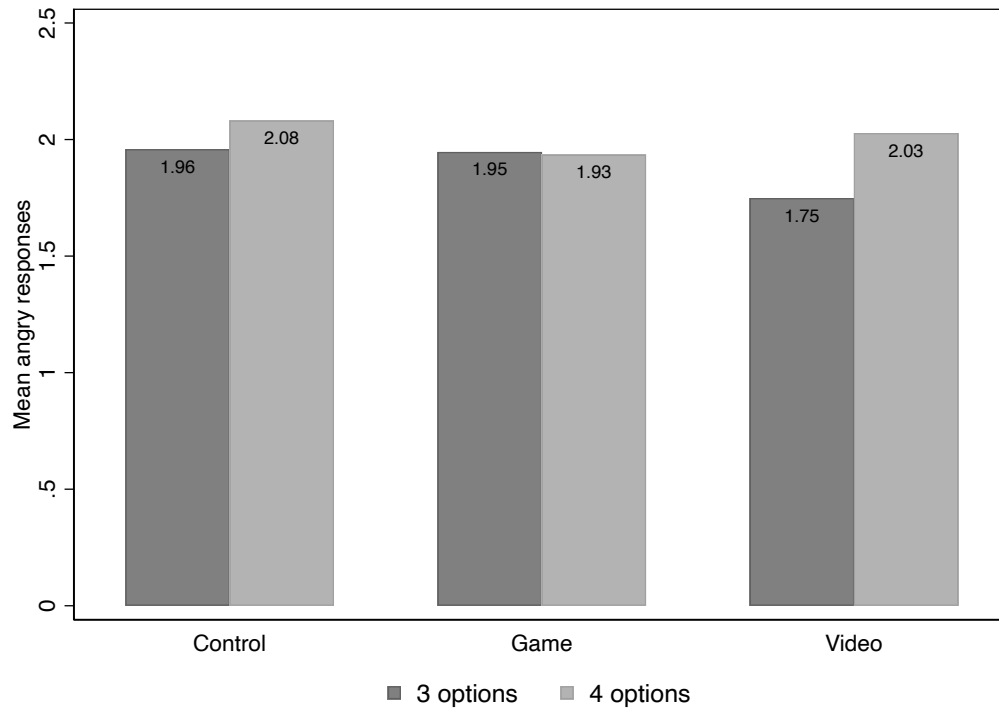
Notes: The figure illustrates the three answers from a question that was directed at measuring the respondent's emotions after receiving the treatment. It asks: "Please indicate how much you experienced the following emotional states when you watched the video / realized the virtual activity: a. Compassion; b. Distress; and/or c. Happiness". The respondent answers by choosing one choice for each choice a, b, and c, from a Likert scale from one to ten, where one means "Not at all" and ten means "A lot".

Figure B.3
Immersion in the Tasks



Notes: The figure illustrates the question asked to assess respondents' level of immersion during both treatments. The question asks: "How much did you feel the experience of the Venezuelan migrant was an extension of yourself?". The respondents answer by selecting from a 4-point scale from "none" to "completely".

Figure B.4
Results of the List Experiment



Notes: The figure illustrates the results of the listing experiment randomly assigned to all participants. The respondents were asked: "How many of the following issues annoy you? [Please respond how many not which of them]". The options were: "a. Homeless people sleeping on the street"; "b. People talking loud close to me"; "c. People who cut in line"; "d. People from other countries coming to live in my country". Option d was the statement assigned randomly so that only half of the participants got this statement. The bars represent the mean answer for each group.

Table B.3
Robustness check for Social Desirability Bias

	(1)	(2)	(3)
	Prosociality	Attitudes	Beliefs
	Index	Index	Index
Game Treatment	0.288 (0.089)	0.340 (0.088)	0.199 (0.090)
Video Treatment	0.178 (0.104)	0.328 (0.097)	0.055 (0.101)
Low Social Desirability Score (SDS)	0.086 (0.152)	0.183 (0.157)	0.298 (0.141)
Game x Low SDS	-0.100 (0.203)	-0.009 (0.200)	-0.162 (0.203)
Video x Low SDS	0.073 (0.207)	-0.019 (0.204)	-0.209 (0.194)
pval: Game + Game x Low SD = 0	0.302	0.067	0.844
pval: Video + Video x Low SD = 0	0.160	0.085	0.354
Observations	828	827	827
R-squared	0.018	0.034	0.014

Notes: The Social Desirability Score (SDS) is a measure of the individual's propensity to report socially desirable answers. High SDS refers to having an above-median score among all participants. All regressions control for gender and a student dummy (takes the value of 1 if the person is a student, and 0 otherwise). Robust standard errors are reported in parentheses. The dependent variables are constructed using the methodology in [44] for each group of outcome variables: prosocial behavior outcomes, beliefs outcomes and attitudes outcomes. pval: Game + Game x Low SD = 0 and pval: Video + Video x Low SD = 0 report the p-value of a Wald test of each linear combination.

C Data

C.1 Variable definitions

C.2 Index description

C.2.1 Procedure for index construction

Three of the outcome variables (Prosociality Index, Beliefs Index, Attitudes Index) are constructed by aggregating the responses of several individual questions into an index. The index is an equally weighted average of the standardized individual variables (i.e., z-scores) with the sign of each measure oriented so that less xenophobic outcomes have higher scores. We follow the procedure in [44]. The steps involved in producing the final indices are as follows:

1. We sign all the individual variables such that a higher score is less xenophobic. Likert-scale and dummy variables with negative statements towards immigrants would be scored in a reverse fashion.
2. The variables are transformed into z-scores by subtracting the control group mean and dividing by the control group standard deviation.
3. Average all the z-scores
4. Normalize the average of all the z-scores by subtracting the control group mean and dividing by the control group standard deviation.

C.2.2 Indices

Below is the complete list of all the indices used in the paper with details on measurement.

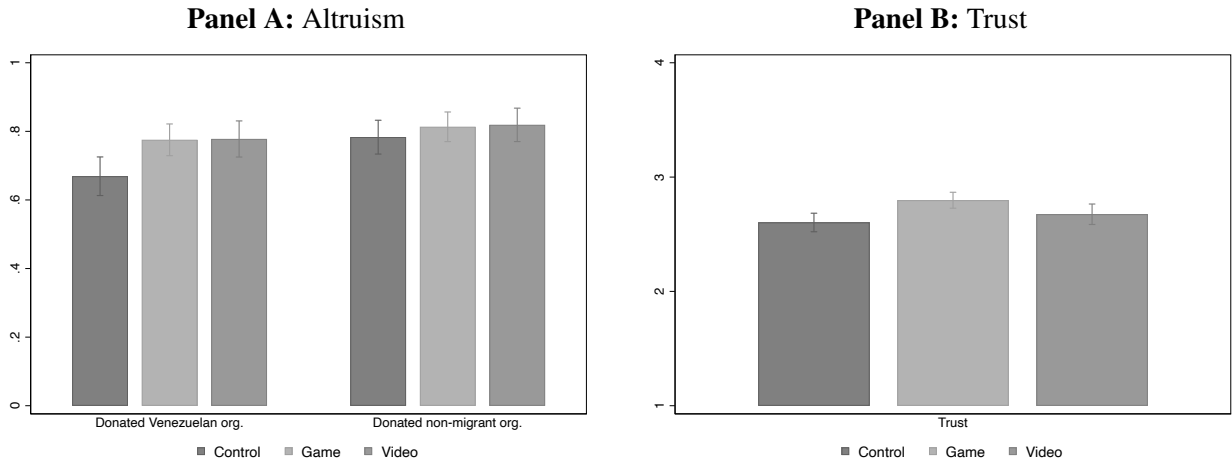
Prosociality Index: Index that combines the variables "Donation Venezuelan org.", "Donation non-migrant org." and "Trust". *Scale: Z-score.*

Beliefs Index: Index that combines the variables "Economy", "Compete jobs", "Crime", "New ideas and cultures" and "Contribute". *Scale: Z-score*

Attitudes Index: Index that combines the variables "Effort", "Same job opportunity", "Segregate", "Government must help" and "Increase gov. spending". *Scale: Z-score*

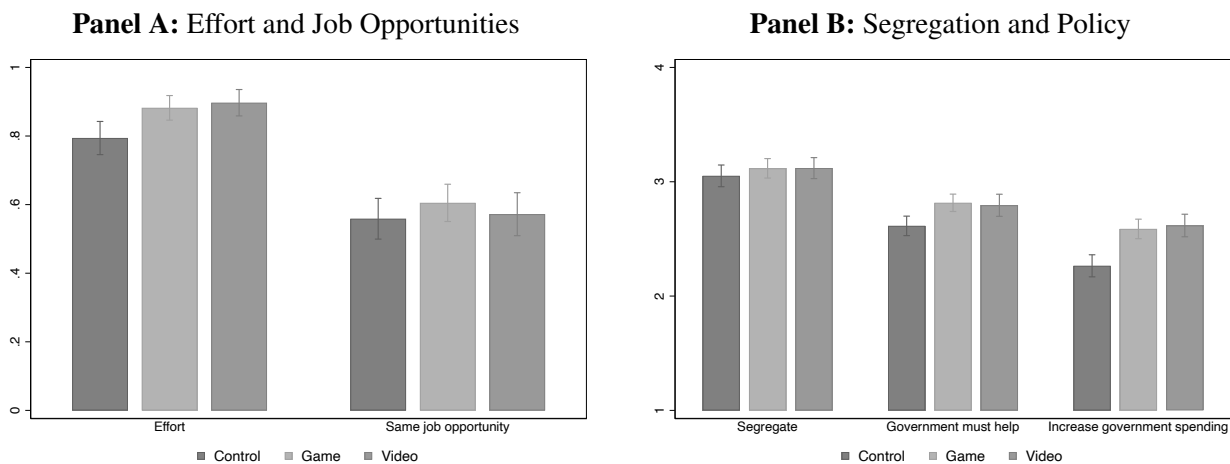
C.3 Raw Data

Figure C.1
Raw Data on Prosocial Behavior



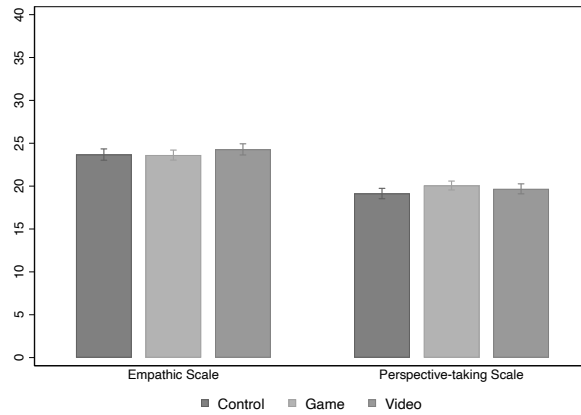
Notes: These figures illustrate the raw means of the prosocial behavior variables and their respective confidence interval. Panel A reports the raw means of the variables that are measured in percentage points (i.e., range from 0 to 1). These variables come from an incentivized dictator game presented to every participant in the following way: "At the end of this survey you will receive 10,000 additional COP. You can keep that money or you can donate it to the following organizations in Colombia. How would you like to distribute that money between? a. You; b. Fundación Juntos se Puede: an organization that supports Venezuelan migrants in Colombia to access health, education, and legal advice, and c. Un techo para mi país: an organization that builds houses for the vulnerable population in Colombia." The variables "Donation Venezuelan org." and "Donation non-migrant org." are dummy variables that take the value of 1 if the respondent chose option b (to donate to a Venezuelan organization) and c (to donate to a non-migrant organization), respectively. Panel B reports the raw means of the variable that is measured in the likert scale used. The "Trust" variable is the score of a likert scale statement "One can trust in Venezuelan migrants" with answers that go from 1. Strongly disagree to 4. Strongly agree (i.e., range from 1 to 4).

Figure C.2
Raw Data on Attitudes



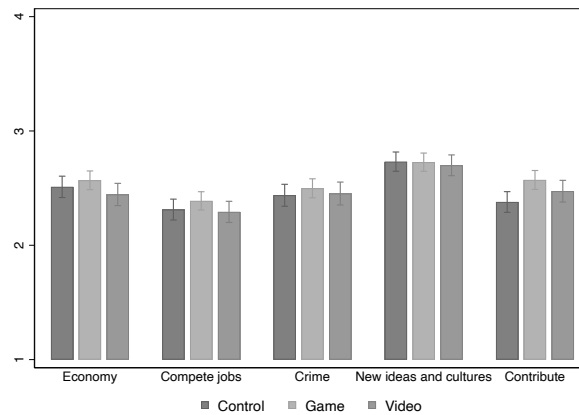
Notes: These figures illustrate the raw means of the attitudes variables and their respective confidence interval. Panel A reports the raw means of the variables that are measured in percentage points (i.e., range from 0 to 1). The variable "Effort" reports the effect of the intervention on the following question: "Which relates the most with a Venezuelan immigrant living in Colombia that is poor? a. Lack of effort on his or her own part; or b. Circumstances beyond his or her control". It is a dummy that equals one if the respondent answered the choice "b". The variable "Same job opportunity" reports the effect of the intervention on the following question: "Please read the following statements and choose one a. Venezuelan immigrants should have as good a chance as anyone to get any kind of job in Colombia; or b. Colombians should have the first chance at any kind of job". It is a dummy that equals one if the respondent answered the choice "a". Panel B reports the raw means of the variables that are measured in the likert scale used. These variables report the score of a 3 likert scale statements with answers that go from 1. Strongly disagree to 4. Strongly agree (i.e., range from 1 to 4). The "Segregate" variable answers to the following statement: "Colombians have the right to keep Venezuelan immigrants out of their neighborhoods and Venezuelans should respect that right", the "Government must help" variable answers to the following statement: "The Colombian government is obligated to help Venezuelan immigrants" and the "Increase gov. spending" answers to the following statement: "I would vote for a policy to increase government spending to assist Venezuelan immigrants".

Figure C.3
Raw Data on Empathic Concern and Perspective Taking Scales



Notes: This figure illustrates the raw means of the empathy variables and their respective confidence interval. These variables come from the Interpersonal Reactivity Index (IRI) originally formulated by Davis (1980, 1983). The scale has been validated in Colombia by Pérez-Albéniz et al. (2003). The questions allow the construction of an empathic concern and perspective-taking scale. The empathic concern scale has eight statements that assess the tendency to experience feelings of sympathy and compassion for unfortunate others. The perspective-taking scale has seven statements that measure the reported tendency to spontaneously adopt the psychological point of view of others in everyday life. For each of the fifteen statements the respondents answer by choosing from a scale from zero to four, where zero represents "does not describe me well" and four represents "describes me very well". According to the answer the respondent gets a score of zero to four, respectively, and the total score is the sum of partial scores. The range of the Empathic Scale goes from 0 to 40 and the range of the Perspective-taking Scale goes from 0 to 35.

Figure C.4
Raw Data on Beliefs



Notes: This figure illustrates the raw means of the beliefs variables and their respective confidence interval. These variables report the score of a 5 likert scale statements with answers that go from 1. Strongly disagree to 4. Strongly agree (i.e., range from 1 to 4). The "Economy" variable answers to the following statement: "Immigrants are good for a country's economy", the "Compete jobs" answers to the following statement: "Immigrants come to compete for our jobs", the "Crime" variable answers to the following statement: "Immigrants increase crime", the "New ideas and cultures" variables answers to the following statement: "Immigrants improve our society by bringing new ideas and cultures", and the variable "Contribute" answers to the following statement: "In general, what immigrants contribute to a country is more than what they take away from its".

Online Appendix

A Survey Instrument

I. Immersion²¹

1. How much did you feel the experience of the Venezuelan migrant was an extension of yourself?
 - a. Completely
 - b. Quite a bit
 - c. A little
 - d. None
2. How aware were you of outside distractions around you during the activity?
 - a. Very aware
 - b. Aware
 - c. Unaware
 - d. Very unaware

II. Comprehension assessment

Game treatment recipients:

1. What was the name of the main character of the story?
 - a. Mile
 - b. Lina
 - c. Diana
 - d. Paola
2. The main character and her husband have to decide between arriving to:
 - a. Cúcuta and Bucaramanga
 - b. Bucaramanga and Bogotá
 - c. Riohacha and Bogotá
 - d. Bucaramanga and Riohacha
3. Where is the main character from?
 - a. Caracas
 - b. Cúcuta

²¹Adapted from [45], applied only to individuals assigned to treatment. Question 2 was, due to a programming error, only applied to the game treatment and therefore we do not use it for the analysis)

- c. Maracaibo
- d. Manzanillo

Video treatment recipients:

1. What sentence does describe your experience with the internet connection:
 - a. I watched the video without interruptions.
 - b. The video was interrupted only once.
 - c. The video was interrupted more than once.
 - d. I could not watch the video because it was frequently interrupted.
2. What is the title of the video?
 - a. The perils of migrants
 - b. Walking for freedom
 - c. Migration from Colombia to Venezuela
3. The shelter that is shown in the video, which of the following migrants are allowed to sleep in:
 - a. Only children
 - b. Only women and children
 - c. All migrants (independent of sex and age)
 - d. Only migrants that have a passport
4. Approximately, how many Venezuelans have fled their country?
 - a. 1 million
 - b. 3 million
 - c. 5 million
 - d. 7 million

III. General characteristics

1. What is your gender?
 - a. Female
 - b. Male
 - c. Other
2. In what year where you born?
3. What is your marital status?
 - a. Married/Living together
 - b. Separated

- c. Widowed
 - d. Single
 - e. Other
4. In what country where you born?
- a. Colombia
 - b. Venezuela
 - c. Other
5. Where did you live 5 years ago?
- a. In the same municipality in Colombia where I live now
 - b. In a different municipality in Colombia than where I live now
 - c. In a different country
6. What is your religion?
- a. Catholic
 - b. Evangelic
 - c. Jewish
 - d. Protestant
 - e. Jehovah witness
 - f. Agnostic/Atheist
 - g. Other
7. Left and right political trends are often spoke of. According to the meaning that the terms “left” and “right” have for you, with what political tendency do you sympathize?
- a. Left
 - b. Center-left
 - c. Center
 - d. Center-right
 - e. Right
 - f. NR
8. How many people live in your household? Think of people who you share a meal with on most days.
9. How many years of education have you completed? (please start to count from the first year of elementary school).
10. To what strata does you're your dwelling belong to?
- a. Strata 1
 - b. Strata 2
 - c. Strata 3
 - d. Strata 4

- e. Strata 5
 - f. Strata 6
11. Think of your ten closest family members and friends (Please check that the three responses sum up to ten.). Of those:
 - a. How many are Colombians?
 - b. How many are Venezuelans?
 - c. How many are from another nationality?
 12. Do you have any children?
 - a. Yes
 - b. No
 13. ¿What is your household's average monthly income?
 - a. \$0-\$999,999
 - b. \$1,000,000-\$4,999,999
 - c. \$5,000,000 - \$9,999,999
 - d. \$10,000,000-\$14,999,999
 - e. \$15,000,000-\$19,999,999
 - f. \$20,000,000 - \$24,999,999
 - g. \$25,000,000 – \$29,999,999
 - h. \$30,000,000 - \$34,999,999
 - i. \$35,000,000- \$39,999,999
 - j. \$40,000,000+

IV. Misinformation²²

1. What percent of the Colombian population do Venezuelans represent today? (Please choose a number between 0% and 100%)
2. In Colombia, an average citizen has around 6 years of education (which is equivalent to having finished primary school). How many years of average education do you think Venezuelan migrants in Colombia have?
3. Please choose the statements that best describe your opinions (you may choose more than one option):
 - a. Venezuelan immigrants have access to the Colombian's subsidized health system.
 - b. Venezuelan children can attend public schools in Colombia.
 - c. The children of Venezuelans who are born in Colombia, are Colombians (they have the right to get the Colombian nationality).

²²Questions 3 and 4 are adapted from [8]

4. Imagine two people, Carlos and Diego, currently living in Colombia with their families. Carlos is born in Colombia, while Diego legally moved to Colombia five years ago from Venezuela. They are both 35, have three children, and earn the same low income from their jobs. In your opinion, does Diego pay more, the same, or less in income taxes than Carlos?
 - a. A lot more
 - b. More
 - c. Same
 - d. Less
 - e. A lot less

5. In your opinion does Diego, who is a Venezuelan immigrant, receive more, the same, or less government transfers (such as e.g., public assistance, Familias en Acción, formation programs like SENA, unemployment benefits during unemployment spells, educational scholarships or housing subsidies) than Carlos?
 - a. A lot more
 - b. More
 - c. Same
 - d. Less
 - e. A lot less

V. Attitudes Towards Venezuelan Migrants²³

1. List experiment: How many of the following issues annoy you? [Please tell us how many not which of them]
 - a. Homeless people sleeping on the street
 - b. People talking loud close to me
 - c. People who cut in line
 - d. People from other countries coming to live in my country (randomly assigned to all participants)

2. Which relates the most with a Venezuelan immigrant living in Colombia that is poor?
 - a. Lack of effort on his or her own part
 - b. Circumstances beyond his or her control

3. The Colombian government is obligated to help Venezuelan immigrants.
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

²³Question 2 is adapted from [8]

4. Colombians have the right to keep Venezuelan immigrants out of their neighborhoods and Venezuelans should respect that right.
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
5. I would vote for a policy to increase government spending to assist Venezuelan immigrants
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
6. Please read the following statements and choose one:
 - a. Venezuelan immigrants should have as good a chance as anyone to get any kind of job in Colombia.
 - b. Colombians should have the first chance at any kind of job.

VI. Beliefs

1. Please, read the following statements and tell us if you: “Strongly agree”, “Agree”, “Disagree”, “Strongly disagree”.
 - a. Immigrants are good for a country’s economy.
 - b. Immigrants come to compete for our jobs.
 - c. Immigrants increase crime.
 - d. Immigrants improve our society by bringing new ideas and cultures.
 - e. In general, what immigrants contribute to a country is more than what they take away from it.

VI. Altruism

1. How willing are you to give to good causes without expecting anything in return? Please indicate your answer on a scale from 0 to 10, where 0 means you are “completely unwilling to do so” and a 10 means you are “very willing to do so”. You can also use any numbers between 0 and 10 to indicate where you fall on the scale, like 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
2. At the end of this survey you will receive 10,000 additional COP. You can keep that money or you can donate it to the following organizations in Colombia. How would you like to distribute that money between? ²⁴

²⁴In the same screen participants were told the following: “Please have in mind that all the resources you decide to donate, will in fact be delivered to the chosen organizations. The researchers of this project are committed to doing it. Once’s this study is finished, REBEL will send the total funds donated from the participants of this study to each organization. While donating, REBEL will explain to the organizations that the funds come from a study, without giving any details about who donated, or the relationship of the Inter-American Development Bank and the University of Southern California with the study. After doing this, REBEL will send a proof to all the participants that the donations have been done.

- (a) You: ___\$
- (b) Fundación Juntos se Puede. Organization that supports Venezuelan immigrants to access health, education, and legal advice: ___\$
- (c) Un techo para mi país. Organization that builds houses for vulnerable populations in Colombia: ___\$

VII. Trust²⁵

For the following statements please choose one answer:

1. One can trust other people.
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
2. In general, other people have good intentions toward me.
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
3. One can rely on other people, even if one does not know them well.
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
4. One can trust in Venezuelan migrants.
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

VII. Empathic Concern and Perspective Taking Scales²⁶

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter. On the scale, where A “Describes me very well” and E “Does not describe me well”. Please read each item carefully before responding. Answer as honestly as you can.

²⁵Questions 1 to 3 are from [47] and have been experimentally validated by [48] and [49]

²⁶Questions are taken from [42, 24]

1. I sometimes find it difficult to see things from the "other guy's" point of view.(PT) (-)
2. I often have tender, concerned feelings for people less fortunate than me. (EC)
3. I try to look at everybody's side of a disagreement before I make a decision. (PT)
4. Sometimes I don't feel very sorry for other people when they are having problems. (EC) (-)
5. I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)
6. When I see someone being taken advantage of, I feel kind of protective towards them. (EC)
7. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (PT) (-)
8. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (EC) (-)
9. I believe that there are two sides to every question and try to look at them both. (PT)
10. I would describe myself as a pretty soft-hearted person. (EC)
11. When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)
12. I am often quite touched by things that I see happen. (EC)
13. Before criticizing somebody, I try to imagine how I would feel if I were in their place. (PT)
14. When I see someone get hurt, I tend to remain calm. (EC) (-)
15. Other people's misfortunes do not usually disturb me a great deal. (EC) (-)

Note: PT = perspective-taking scale; EC = empathic concern scale. (-) denotes item to be scored in reverse fashion. A = 0, B = 1, C = 2, D = 3, E = 4. Except for reversed-scored items, which are scored: A = 4, B = 3, C = 2, D = 1, E = 0

VIII. Social desirability bias²⁷

1. It is sometimes hard for me to go on with my work if I am not encouraged. True/False
2. There have been times when I was quite jealous of the good fortune of others. True/False
3. I am always willing to admit when I make a mistake. True/False
4. I am always courteous, even to people who are disagreeable. True/False

²⁷Questions are adapted from [46]

IX. Emotions (for game and video treatment groups)

1. Below you will find a scale with different adjectives that characterize different emotional states. On a scale of 1 to 10, where 1 means "Not at all" and 10 means "A lot", please indicate how much you experienced the following emotional states when you watched the video / realized the virtual activity. You can also use any numbers between 1 and 10 to indicate where you fall on the scale, like 1, 2, 3, 4, 5, 6, 7, 8, 9, 10:
 - a. Compassion:
 - b. Distress:
 - c. Happiness:

B Written Consent Form

B.1 INTRODUCTION

We invite you to take part in a research study. Please take as much time as you need to read the consent form. You may want to discuss it with your family, friends, or your personal doctor. If you find any of the language difficult to understand, please ask questions. If you decide to participate, you will be asked to sign this form. A copy of the signed form will be provided to you for your records.

INFORMATION

The following is a short summary of this study to help you decide whether you should participate. More detailed information is listed later in this form.

1. Being in this research study is voluntary—it is your choice.
2. You are being asked to take part in this study because we would like to know your opinions on various topics. The purpose of this study is to understand the impacts of perspective taking on people's opinions. Your participation in this study will last approximately 1 hour. Procedures will include participating on an online activity and answering a questionnaire.
3. There are risks from participating in this study. The most common risks are that some images and/or questions in this activity may cause you discomfort. More detailed information about the risks of this study can be found under the "Risk and Discomfort" section.
4. The possible benefits to you for taking part in this study may include receiving up to \$10 for completing the survey and realizing other activities.
5. If you decide not to participate in this research, your other choices may include leaving questions unanswered as well as withdrawing from the activity at any time without penalty.

B.2 DETAILED INFORMATION

B.2.1 PURPOSE

The purpose of this study is to understand the impacts of perspective taking activities on people's opinions and attitudes various topics. You are invited as a possible participant because you are of legal age. About 900

participants will take part in the study. This research is being funded by the Inter-American Development Bank.

B.2.2 PROCEDURES

If you decide to take part, this is what will happen:

1. You will be randomly assigned by the program to one of three possible groups. To understand what randomly means, imagine that we put three numbers in a hat, referring to the three possible groups. Every time a subject agrees to participate, we pull a number from that hat and assign the participant to the corresponding group. We then put the number back in the hat and carry out the same procedure with the next participant. 2. You will perform an activity depending on which group you were assigned to. 3. You will answer a questionnaire. 4. You will find out how much money you earned during the activity and we will send you the payment.

B.2.3 RISKS AND DISCOMFORTS

Possible risks and discomforts you could experience during this study include that some images and questions might cause you discomfort.

Surveys/Questionnaires/Interviews: Some of the questions may make you feel uneasy or embarrassed. You can choose to skip or stop answering any questions you don't want to.

Breach of Confidentiality: There is a small risk that people who are not connected with this study will learn your identity or your personal information.

B.2.4 BENEFITS

There are no direct benefits to you from taking part in this study. However, your participation in this study may help us learn about the effect of perspective taking activities on individuals' attitudes and opinions.

B.2.5 PRIVACY/CONFIDENTIALITY

We will keep your records for this study confidential as far as permitted by law. However, if we are required to do so by law, we will disclose confidential information about you. Efforts will be made to limit the use and disclosure of your personal information, including research study and medical records, to people who are required to review this information. We may publish the information from this study in journals or present it at meetings. If we do, we will not use your name.

The University of Southern California's Institutional Review Board (IRB) may review your records. Organizations that may also inspect and copy your information include the Inter-American Development Bank.

Your data or specimens will be stored in the researchers' computers, each protected with an individual password.

Your information or samples that is/are collected as part of this research will be used or distributed for future research studies without your additional informed consent. Any information that identifies you (such as your name) will be removed from your private information or samples before being shared with others.

B.2.6 ALTERNATIVES

An alternative would be to not participate in this study.

B.2.7 PAYMENTS

You will receive up to \$10 for your participation in this study. If you complete the survey, you will receive \$7.5. During activities you will have a chance to win up to an additional \$2.5.

B.2.8 COST

Some images and/or questions in this activity may cause you discomfort. You can leave questions that bother you unanswered, as well as withdraw from the activity at any time, without penalty. However, if you decide to withdraw before the experiment ends, you will not receive the maximum possible payment but a partial payment of \$2.5.

B.2.9 VOLUNTARY PARTICIPATION

It is your choice whether to participate. If you choose to participate, you may change your mind and leave the study at any time. Refusal to participate or stopping your participation will involve no penalty or loss of benefits to which you are otherwise entitled. If withdrawal must be gradual for safety reasons, the study investigator will tell you.

If you stop being in the research, already collected data may not be removed from the study database. You will be asked whether the investigator can continue to collect data from your records. If you agree, this data will be handled the same as the research data. No new information or samples will be collected about you or from you by the study team without your permission.

The study site may still, after your withdrawal, need to report any safety event that you may have experienced due to your participation to all entities involved in the study. Your personal information, including any identifiable information, that has already been collected up to the time of your withdrawal will be kept and used to guarantee the integrity of the study, to determine the safety effects, and to satisfy any legal or regulatory requirements.

B.3 CONTACT INFORMATION

If you have questions, concerns, complaints, or think the research has hurt you, talk to the study investigator at XXX.

This research has been reviewed by the USC Institutional Review Board (IRB). The IRB is a research review board that reviews and monitors research studies to protect the rights and welfare of research participants. Contact the IRB if you have questions about your rights as a research participant or you have complaints about the research. You may contact the IRB at (323) 442-0114 or by email at irb@usc.edu.

B.4 STATEMENT OF CONSENT

I have read (or someone has read to me) the information provided above. I have been given a chance to ask questions. All my questions have been answered. By signing this form, I am agreeing to take part in this study.

Name of Research Participant Signature Date Signed (and Time*)

Person Obtaining Consent I have personally explained the research to the participant using non-technical language. I have answered all the participant's questions. I believe that the participant understands the information described in this informed consent and freely consents to participate.

Name of Person Obtaining Signature Date Signed Informed Consent (and Time*)

Witness A Witness is Required When: (1) the participant cannot see, read, write, or physically sign the consent form, or (2) the Short Form method is used to obtain consent. In these situations, the witness must sign and date the consent form. If no witness is needed, leave this signature line blank.

Name of Witness Signature Date Signed

Assessment Tool:

I declare that I understand the above information and my rights and commitments during this experiment. I also understand that I may leave the activity at any time by giving up receiving part of the payment. YES/NO

I understand that I have the right to answer particular questions without any penalty. Also, that some questions might make me uncomfortable. YES/NO