How Does it Feel to Be Part of the Minority? Impacts of Perspective Taking on Prosocial Behavior

Marisol Rodríguez Chatruc
Sandra V. Rozo

How Does it Feel to Be Part of the Minority? Impacts of Perspective Taking on Prosocial Behavior

Marisol Rodríguez Chatruc
Sandra V. Rozo

September 2021

How Does it Feel to Be Part of the Minority?
Impacts of Perspective Taking on Prosocial Behavior*

Marisol Rodríguez Chatruc[†]   Sandra V. Rozo[‡]

September 2021

Abstract

Can taking the perspective of an out-group reduce prejudice and promote prosociality? Building on insights from social psychology, we study the case of Colombian natives and Venezuelan immigrants. We conducted an online experiment in which we randomly assigned natives to either 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.

JEL Classification: C91, D91, J15

Keywords: migration, prejudice, perspective taking, altruism, trust

> *"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 the exclusionary behaviors associated with it, can have damaging economic consequences. At the individual level, it can lead to lower effort, worse academic outcomes, and wage gaps (Glover et al., 2017; Alesina et al., 2018; Charles and Guryan, 2008). At the more aggregate level, it can hurt productivity and economic growth (Hjort, 2014; Alesina and La Ferrara, 2005). With a record 82.4 million people forcibly displaced globally, prejudice towards immigrants in hosting nations has been on the rise.[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 (Hainmueller and Hopkins, 2014), however, less research exists on low-cost interventions to improve them. While information provision interventions can be effective in correcting misperceptions about the size and characteristics of immigrant populations at a low cost, their impact on policy attitudes and behaviors is mixed (Alesina et al., 2018; Grigorieff et al., 2020; Haaland and Roth, 2020). Interventions fostering contact between antagonistic groups can promote inclusionary behaviors, however, they are complex and expensive to scale up (Mousa, 2020; Lowe, 2021). Alternative strategies, grounded in social psychology, rely on targeting emotional states to influence prejudice towards out-groups. In particular, low-cost interventions that encourage taking the perspective of a migrant have been successful in producing attitudinal change in different contexts (Adida et al., 2018; Simonovits et al., 2018). However, little is known about their effects on prosocial behavior and about 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

---

[1] Displacement figures come from UNHCR (2021). 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.

due to a massive influx of Venezuelan migrants. More than 5 million people have fled the humanitarian crisis in Venezuela and relocated in other countries in only six years making Venezuelans the second largest internationally displaced population after Syrians. Colombia is the main destination country of this contingent hosting 1.7 million Venezuelans and Bogotá is the main recipient city, accounting for almost 20 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 3rd largest fall in the world between 2016 and 2019.[2]

We designed an experiment in which we exposed a random subset of 897 participants to either an online game or a video. In the game, participants 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 which city to migrate to—which take them through alternative life paths. The video consists of a documentary film that depicts the struggles of Venezuelans crossing the border on foot to Colombia—the low temperatures, sleeping on the streets—and includes first-person testimonies about family separation. After the interventions, we applied a survey instrument which elicited attitudes towards migrants and 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 helping Venezuelan migrants, and a recognized organization that builds houses for vulnerable populations. A control group did not receive any treatment and only answered the survey.

Our interventions are grounded on insights from the psychology field of perspective-taking, understood as "the active consideration of others' mental states and subjective experiences" (Todd and Galinsky, 2014). Work in this field has shown that considering others' circumstances can attenuate expressions of prejudice through an array of interventions such as instructing people to write an essay from the perspective of an out-group (Galinsky and Moskowitz, 2000) or to be empathetic or focus on feelings when doing an activity like reading or watching a video about an out-group (Stephan et al. 1999; Esses and Dovidio 2002). Perspective taking can operate through several processes both affective and cognitive (Todd and Galinsky, 2014).

---

[2]Gallup compared 140 countries between 2016 and 2019 (see footnote 1), the three largest falls 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 for example the following report by *Semana* magazine: https://s3.amazonaws.com/semanaruralvzla/documentos/1568067274_boletin7pdf.

Each of our interventions explores a different pathway to activate perspective taking. The game involves active role-playing, an activity that has been shown to increase the ability to see the world through others' point of view and to increase perspective taking (Stewart et al. 2003). The video exposes the participants to personal narratives, which can have the power to *transport* the audience to a fictional world and lead to belief change (Green and Brock, 2000). Personal narratives have been argued to increase empathy toward the speaker through perspective taking (Busselle and Bilandzic 2009; Nabi and Green 2015). This type of technique has also been studied in psychology and referred by some authors as *perspective-giving*. Unlike many studies in the field of social psychology, in our interventions we do not provide participants with explicit instructions when performing the activities in order to ameliorate demand effects (see below for a discussion).

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. 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 a Venezuelan immigrant that is poor (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 between migrants and natives nor on attitudes about the right to segregate migrants from neighborhoods. Finally, regarding policy attitudes about the government providing assistance to migrants, both treatments have positive and significant effects.

We also explored 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 (Batson, 2011). To this end, we applied (post-treatment) the empathy and perspective-taking subscales from the Interpersonal Reactivity Index questionnaire (Davis, 1983). These scales measure the extent of empathic concern and perspective taking in general, and not just toward 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.

There are, however, two behaviors that could constitute a threat to our research design: social desirability bias (SDB)—individuals' tendency to answer according to how their responses will be viewed by others—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 in response to the treatments—a high stakes behavior—and no significant changes in some attitudes, which does not seem consistent 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 (Dhar et al. 2018; Mummolo and Peterson 2019), we conduct a list experiment to address these issues. The results from the list experiment suggest that our results are not driven by behavioral biases.

Within the broad field of prejudice reduction (Paluck and Green, 2009; Paluck et al., 2021), our paper contributes to a recent literature studying interventions to change attitudes and behaviors towards immigrants as well as preferences for migration policy. Given that it is widely documented 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 the provision of information tends to generate an update of beliefs, these interventions have had mixed success in shifting (political) attitudes (Alesina et al., 2018; Grigorieff et al., 2020; Haaland and Roth, 2020; Hopkins et al., 2019; Williamson, 2019) perhaps because of the tendency of individuals to engage in motivated reasoning (Taber and Lodge, 2006). A second group 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 parallelisms with personal experiences. For example, individuals in the U.S. instructed to imagine themselves as a refugee were more likely to write a letter to the President in support for refugees (Adida et al., 2018); an online game reduced Anti-Roma sentiment in Hungary and shifted voting intentions away from the right-wing party (Simonovits et al., 2018); individuals in Greece, Germany, and the U.S. primed to think about their own family migration history increased pledged monetary donations and improved their attitudes towards refugees (Dinas et al., 2021; Williamson et al., 2021).

---

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

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 by exploring if they increased empathy and perspective taking as measured by a validated psychological scale. Except for Simonovits et al. (2018), existing studies do not use interventions based on games or media as we do. The game in Simonovits et al. (2018) is closest to our game intervention but they do not explore impacts on behaviors. Dinas et al. (2021) explore donating behavior but they use interventions that appeal to partipants' own family migration history. Also, they measure altruism through a hypothetical donation should the participants win a raffle whereas we elicit and actual donation—i.e. a high stakes behavior. We also innovate by introducing trust towards migrants as an outcome. Finally, existing studies do not assess the role of empathy, except for Williamson et al. (2021), 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 (Alesina et al. 2011; Stichnoth and Van der Straeten 2013) and that support for redistribution is lower when migration is higher (Dahlberg et al. 2012; Tabellini 2020). Recent evidence also suggests that priming people to think about migration, reduces preferences for redistribution and donation to charities (Alesina et al., 2018) and that natives reciprocate trust less to immigrants from non-western countries than to their own conationals (Cettolin and Suetens, 2019).[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 settings such as schools or the workplace. 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 that can have permanent effects in immigrants' well-being, such as hiring

---

[4]The question they ask 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.*

[5]An exception is (Hassan et al., 2019) who find that Egyptians display higher levels of altruism, trust, and cooperation towards Syrian immigrants than towards their own conationals.

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

6

decisions by managers, teachers' grading decisions, or voting decisions by natives. More research is needed to assess the efficacy of these types of interventions in different contexts and to measure for how long their effects persists.

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.

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 translates into *In Someone Else's Shoes*. EOZ is a platform created and supported by the Inter-American Development Bank that aims at promoting 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. The story, which is entirely fictional, was created by a writer and is based on interviews he conducted to Venezuelan migrants in Colombia. In the game, the user takes the role of "Mile Rodríguez", a female Venezuelan migrant with two young kids and a husband. Participants start by reading the story of Mile, which describes the struggles she and her family faced in Venezuela (such as lack of food and of proper medical attention), which eventually prompt them to emigrate to Colombia. With this information, the user has to decide if to migrate directly to Bogotá—Colombia's capital and the preferred option of Mile's husband—or to Riohacha—a northern city which is recommended by a neighbor—. Each of these decisions takes the user to an alternative life path. In each of the destinations

---

[7]For more details, visit https://enotroszapatos.iadb.org/.

the user will keep reading about Mile's story and making more decisions and will also receive letters and voice messages from her relatives and friends, listen to songs that are meaningful to her, or see pictures of her family. The activity also gives the users the possibility to state their feelings or to answer the 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 on watching a short documentary called ''Walking for Freedom", which lasts 6:39 minutes and depicts the struggles of Venezuelan migrants that cross the border on foot from Venezuela to Colombia escaping a humanitarian crisis. The video starts with images of the mountains in *El Páramo de Berlín* a common route for migrants, with a caption that states "3,223 meters of altitude in its highest elevation point, minimum temperature -5 Celsius" while a strong sound of the wind can be heard. It then shows migrants walking by the road while female voices in the background share the reasons why they left Venezuela with one of them saying "if I had stayed in Venezuela, I would be without a child". Then there is footage of migrants walking through an official border crossing while a woman tells her son died from lack of oxygen in Venezuela. This is followed by images of the *trochas*, the illegal border crossings, while a woman can be heard saying that she crossed through the trocha but got separated from her son and has not seen him four days. The fourth location is a refuge for migrant women and children and the woman running the refuge, a Venezuelan migrant herself, also shares emotive stories and explains that the weather is very cold and that men sleep outside and then a footage a dozen men sleeping on the street in the night and the cold can be seen followed by images inside the refuge of dozens of women some feeding their small children. A woman then narrates how much her body hurt while 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 goes on with several emotional testimonies of migrants, many of them about family separation, until the end and then a banner that reads "More help is needed" is shown. 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 in 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.

The recruiting process was the one REBEL usually employs for their experiments. Individuals invited to the experiment are part of REBEL's subjects pool, which includes university students (both at the undergraduate and graduate level) and non-students.[9] The lab sent an email to their subject pool in which they invited recipients to participate in an online experiment for no more than hour in exchange for a monetary incentive.[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 session. Of these, 858 completed the activity. The 4.3 percent attrition rate was predominantly explained by connectivity issues. The requirements to register for the experiment were: to be older than 18 years of age, to be available for 1 hour, to have a computer with a stable internet connection, and 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 the participants registered, they were individually randomized to one of the three groups (game, video, and control) and they were sent 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 would arise (45 sessions were carried out).[11] The sessions had different schedules to accommodate respondents' availability. The average size of each Zoom virtual meeting was 19 participants. Once individuals connected to the meeting, they were given 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 pro-

---

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

[9]Students 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. Non-students are recruited among employees of Universidad del Rosario and other partner public institutions such as the Colombian Central Bank.

[10]REBEL paid participants a show up fee equivalent to 2.5 dollars and 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. The minimum hourly wage in Colombia in 2020 was approximately 1.3 dollars.

[11]This 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 the video treatments had been in the same session and asked the technician for help, there could have been a risk of the technician asking to which activity they were assigned, revealing them that were different types of activities.

vided in section A of the Online Appendix.[12] Our study's main outcomes, as mentioned in our pre-analysis plan, are: prosocial behaviors (altruism and trust), attitudes toward migrants, and empathy and perspective taking. We also explore if 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 in order to attain a balanced sample in this dimension due to documented differences in altruistic behavior between men and women (Andreoni and Vesterlund, 2001). 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 composed only of university students.[13] However, after three sessions of the game treatment, we noticed more women than men were attending the sessions. To correct this, we applied gender quotas and we 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) and balance improved in the game treatment but still had more women, at around 60 percent. In the student-status dimension, since more students registered overall, our sample has around 60 percent of students in each treatment group. The final samples sizes were: 272 for the control group, 316 for the game treatment group, and 243 for the video treatment group.[14] Table 1 shows that the treatment randomization was successful and the sample is balanced in terms of covariates, except for gender. In all of our regressions we control for the stratification variables (gender and student status). Table B.1 shows descriptive statistics of our sample.

2.3 Outcomes

We evaluate the impacts of our intervention on three groups of pre-specified primary outcomes: (i) prosocial behaviors—including altruism and trust—, (ii) attitudes towards migrants, and (iii) perspective taking and empathic concerns as possible mechanisms. These outcomes are described below (Appendix C.1 describes all the outcomes in the paper in detail and Table B.1 shows descriptive statistics). We also explore if the

---

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

[13]In the pre-analysis plan we intended to stratify only by gender because we thought we would be working with a sample of university students but later we learned that REBEL's subject pool contains non-student adults as well.

[14]In the pre-analysis 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.

treatments had an impact on beliefs about the effects of migration on the country.

Our first group of outcomes are 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*) 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 4-point scale from "strongly disagree" to "strongly agree".

To measure attitudes, we collected five questions. We asked participants: if a Venezuelan that is poor is more likely explained by lack of self-effort or by circumstances beyond their control, if Colombians should have the right to keep Venezuelans out of their neighborhoods, if they should have the first opportunity at a job, if the government is in the obligation to help Venezuelan migrants, and if they would 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 Davis (1980, 1983). The scale has been validated in Colombia by Pérez-Albéniz et al. (2003). The questions allow for the construction of an *empathic concern* (EC) and *perspective-taking* (PT) scale. 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 point of view of others in everyday life. All the statements are listed in section A of the Online Appendix which contains the survey instrument.[16] For each of the fourteen statements the respondent answers by choosing from a five-point scale from zero to four, where zero represents

---

[15] A similar question was implemented by Alesina et al. (2018). In their question, however, not all participants receive a direct transfer but they are told that they are enrolled in a lottery to win $1,000. In our survey the participants' decision is translated to effective actions and is not associated with just a probability of donation.

[16] A 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".

"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 constructed as 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: if immigrants are good for the economy, if they compete with natives for jobs, if they contribute to increases in crime, if the bring new ideas, and if overall, they contribute to the country more than what they take.

3   Results

3.1   Empirical specification

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

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

where i indexes participants, Game $\in \{0, 1\}$ equals one for participants assigned to the *In Someone Else's Shoes* online game and zero otherwise, Video $\in \{0, 1\}$ equals one for participants assigned to the 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 Kling et al. (2007) 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).

---

[17]These outcomes were not pre-specified.

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 main character of the game, where she was born, and between which two cities she had to decide to migrate first. For the video group, we asked what was the title of the movie, approximately how many Venezuelans had left their country since the beginning of the humanitarian crisis—a figure that was shown during the movie—, and which migrants were allowed to 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 the activities, but more so to the game. Specifically, approximately 90 percent of participants who participated in the game task and 70 percent of the 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?" (with possible answers were completely, quite a bit, a little, or none).[18] As is shown in Figure B.3, a majority of individuals in both groups reported that they felt 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), which suggests a high level of involvement in the activities.

Finally, we included questions to understand how the treatments affected the participants' emotions. We asked participants to choose a number from 1 to 10 (with 10 being more intense feelings) to evaluate the extent to which they felt compassion, distress, or happiness by participating in the online interactive game or by watching the video. Figure B.2 presents the results showing that both treatments induced higher levels of compassion and distress to a similar extent and lower levels of happiness, with the game inducing 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

---

[18]This question was adapted from Behm-Morawitz et al. (2015) *self-presence* scale.

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 non-significant impact on the donation to a non-migrant 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 the video are positive, but only the game has a statistically significant impact. The game increases trust towards Venezuelan 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.

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 migrant's control are most related to a Venezuelan immigrant that is poor (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 the attitudes about equal job opportunities between migrants and natives nor on attitudes about the right to segregate migrants from neighborhoods. Finally, regarding policy attitudes about the government helping and increasing spending on 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 pre-analysis plan, the role of changes in empathy and perspective-taking as possible mechanisms driving 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 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 hypothesis testing, with a p-value of 0.11. The results are in line with the objectives of the game activity, which aimed at increasing perspective-taking by making participants step into the shoes of a migrant and with the fact that the game requires more involvement from participants who 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 pre-specified) 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 such as that 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 to a country more than what they take from it". We think this last result is interesting because many interventions use as outcomes the commonly held beliefs about crime or jobs and do not measure beliefs about "net" effects. This suggests that asking individuals about the net contribution of immigrants could be important for future research.

3.7 Robustness

We test the robustness of our main estimates to the inclusion of the covariates listed in Table 1. To this purpose, we re-estimate the treatment effects on the indices of prosociality, attitudes, and beliefs controlling for these covariates. The results of this exercise are presented in Table B.2 in the Appendix.[19] Since we

---

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

report FDR adjusted p-values, this table also serves as a check that treatment effects on the indices are robust to adjusting for multiple hypotheses testing.

To have a sense of the prevalence of social desirability bias and experimenter demand effects in our sample, we included a list experiment in our survey instrument to asses the attitudes of respondents towards migrants indirectly. We inquired *how many*—not which one—of the following four situations annoys 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 half of the sample only. Figure B.4 presents the average number of angry responses for the group who received 3 options and for the group that received 4 options, for the control and treatment groups. In the control group, respondents who received 3-options are annoyed, on average, by 1.96 situations and respondents who received 4 options are annoyed by 2.08 situations, yielding that a 12 percent of the sample is annoyed by migrants coming to live in their country.[20] Both treatments reduce the mean angry responses for the 4-options group compared to the control group in the case of the game this is reduced by 15 p.p. (from 2.08 to 1.93) and in the case of the video by 5 p.p. (from 2.08 to 2.03). These results suggest that improvements in attitudes towards migrants in our sample are unlikely to be driven by social desirability bias and experimenter demand effects.

4 Conclusion

Prejudice against migrants can have damaging economic consequences for migrants themselves and for the whole society. Grounded on social psychology insights, we designed and evaluated the impact of two online, perspective-taking interventions on prosociality and attitudes towards migrants where we exposed Colombian participants to either a game where they take the role of a Venezuelan migrant or to a video that shows the struggles of Venezuelan migrants crossing th border on foot.

Our main finding is that both interventions improved altruism and some attitudes towards migrants. The game, in addition, improved trust and the belief that migrants contribute to the country more than what they take. Regarding mechanisms, the game seems to have improved the ability of participants to take the perspective of others.

---

[20]This is calculated as the difference in mean angry responses between the 4-options and the 3-options groups (2.08-1.96=0.12).

Our results can be of use to policymakers and to private organizations looking for low-cost interventions to reduce prejudice.

References

Adida, C. L., A. Lo, and M. R. Platas (2018). Perspective taking can promote short-term inclusionary behavior toward syrian refugees. *Proceedings of the National Academy of Sciences 115*(38), 9521–9526.

Alesina, A., M. Carlana, E. La Ferrara, and P. Pinotti (2018). Revealing stereotypes: Evidence from immigrants in schools. Technical report, National Bureau of Economic Research.

Alesina, A., P. Giuliano, A. Bisin, and J. Benhabib (2011). *Preferences for Redistribution*, pp. 93–132. North Holland.

Alesina, A. and E. La Ferrara (2005). Ethnic diversity and economic performance. *Journal of Economic Literature 43*(3), 762–800.

Alesina, A., A. Miano, and S. Stantcheva (2018). Immigration and redistribution. Technical report, National Bureau of Economic Research.

Andreoni, J. and L. Vesterlund (2001). Which is the fair sex? gender differences in altruism. *The Quarterly Journal of Economics 116*(1), 293–312.

Batson, C. D. (2011). *Altruism in humans*. Oxford University Press, USA.

Behm-Morawitz, E., J. Lewallen, and B. Miller (2015). Real mean girls? reality television viewing, social aggression, and gender-related beliefs among female emerging adults. *Psychology of Popular Media Culture 5*.

Busselle, R. and H. Bilandzic (2009). Measuring narrative engagement. *Media Psychology 12*(4), 321–347.

Cettolin, E. and S. Suetens (2019). Return on trust is lower for immigrants. *Economic Journal 129*(621), 1992–2009.

Charles, K. K. and J. Guryan (2008). Prejudice and wages: An empirical assessment of becker's the economics of discrimination. *Journal of Political Economy 116*(5), 773–809.

Crowne, D. P., D. P. Crowne, and D. Marlowe (1964). *The approval motive: Studies in evaluative dependence*. New York: Wiley.

Dahlberg, M., K. Edmark, and H. Lundqvist (2012). Ethnic diversity and preferences for redistribution. *Journal of Political Economy 120*(1), 41–76.

Davis, M. H. (1980). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal Supplement Abstract Service: Catalog of Selected Documents in Psychology 10*(85).

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology 44*(1), 113.

Dhar, D., T. Jain, and S. Jayachandran (2018). Reshaping adolescents' gender attitudes: Evidence from a school-based experiment in india. Technical report, National Bureau of Economic Research.

Dinas, E., V. Fouka, and A. Schläpfer (2021). Family history and attitudes toward out-groups: Evidence from the european refugee crisis. *The Journal of Politics 83*(2), 647–661.

Esses, V. M. and J. F. Dovidio (2002). The role of emotions in determining willingness to engage in intergroup contact. *Personality and Social Psychology Bulletin 28*(9), 1202–1214.

Falk, A., A. Becker, T. Dohmen, B. Enke, D. Huffman, and U. Sunde (2018). Global evidence on economic preferences. *The Quarterly Journal of Economics 133*(4), 1645–1692.

Fehr, E., U. Fischbacher, B. Von Rosenbladt, J. Schupp, and G. G. Wagner (2002). A nation-wide laboratory. *Journal of Applied Social Science 122*, 519–41.

Galinsky, A. D. and G. B. Moskowitz (2000). Perspective-taking: Decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *Journal of Personality and Social Psychology 78*(4), 708.

Glover, D., A. Pallais, and W. Pariente (2017). Discrimination as a self-fulfilling prophecy: Evidence from french grocery stores. *The Quarterly Journal of Economics 132*(3), 1219–1260.

Green, M. C. and T. C. Brock (2000). The role of transportation in the persuasiveness of public narratives. *Journal of Personality and Social Psychology 79*(5), 701.

Grigorieff, A., C. Roth, and D. Ubfal (2020). Does information change attitudes toward immigrants? *Demography 57*(3), 1117–1143.

Haaland, I. and C. Roth (2020). Labor market concerns and support for immigration. *Journal of Public Economics 191*, 104256.

Hainmueller, J. and D. J. Hopkins (2014). Public attitudes toward immigration. *Annual Review of Political Science 17*, 225–249.

Hassan, M., S. Mansour, S. Voigt, and M. Gadallah (2019). When Syria was in Egypt's land: Egyptians cooperate with Syrians, but less with each other. *Public Choice*.

Hjort, J. (2014). Ethnic divisions and production in firms. *The Quarterly Journal of Economics 129*(4), 1899–1946.

Hopkins, D. J., J. Sides, and J. Citrin (2019). The muted consequences of correct information about immigration. *The Journal of Politics 81*(1), 315–320.

Kling, J. R., J. B. Liebman, and L. F. Katz (2007). Experimental analysis of neighborhood effects. *Econometrica 75*(1), 83–119.

Kosse, F., T. Deckers, P. Pinger, H. Schildberg-Hörisch, and A. Falk (2020). The formation of prosociality: causal evidence on the role of social environment. *Journal of Political Economy 128*(2), 434–467.

Lowe, M. (2021). Types of contact: A field experiment on collaborative and adversarial caste integration. *American Economic Review 111*(6), 1807–44.

Mousa, S. (2020). Building social cohesion between christians and muslims through soccer in post-isis iraq. *Science 369*(6505), 866–870.

Mummolo, J. and E. Peterson (2019). Demand effects in survey experiments: An empirical assessment. *American Political Science Review 113*(2), 517–529.

Nabi, R. L. and M. C. Green (2015). The role of a narrative's emotional flow in promoting persuasive outcomes. *Media Psychology 18*(2), 137–162.

Paluck, E. L. and D. P. Green (2009). Prejudice reduction: What works? a review and assessment of research and practice. *Annual Review of Psychology 60*, 339–367.

Paluck, E. L., R. Porat, C. S. Clark, and D. P. Green (2021). Prejudice reduction: Progress and challenges. *Annual review of psychology 72*, 533–560.

Pérez-Albéniz, A., J. De Paúl, J. Etxeberría, M. P. Montes, and E. Torres (2003). Adaptación de interpersonal reactivity index (iri) al español. *Psicothema*, 267–272.

Simonovits, G., G. Kezdi, and P. Kardos (2018). Seeing the world through the other's eye: An online intervention reducing ethnic prejudice. *American Political Science Review 112*(1), 186–193.

Stephan, W. G., K. Finlay, et al. (1999). The role of empathy in improving intergroup relations. *Journal of Social Issues 55*(4), 729–743.

Stewart, T. L., J. R. Laduke, C. Bracht, B. A. Sweet, and K. E. Gamarel (2003). Do the "eyes" have it? a program evaluation of jane elliott's "blue-eyes/brown-eyes" diversity training exercise 1. *Journal of Applied Social Psychology 33*(9), 1898–1921.

Stichnoth, H. and K. Van der Straeten (2013). Ethnic diversity, public spending, and individual support for the welfare state: A review of the empirical literature. *Journal of Economic Surveys 27*(2), 364–389.

Tabellini, M. (2020). Gifts of the immigrants, woes of the natives: Lessons from the age of mass migration. *The Review of Economic Studies 87*(1), 454–486.

Taber, C. S. and M. Lodge (2006). Motivated skepticism in the evaluation of political beliefs. *American Journal of Political Science 50*(3), 755–769.

Todd, A. R. and A. D. Galinsky (2014). Perspective-taking as a strategy for improving intergroup relations: Evidence, mechanisms, and qualifications. *Social and Personality Psychology Compass 8*(7), 374–387.

UNHCR (2021). *Global Trends in Forced Displacement*. Copenhagen, Denmark: UNHCR, Statistics and Demographics Section.

Williamson, S. (2019). Countering misperceptions to reduce prejudice: An experiment on attitudes toward muslim americans. *Journal of Experimental Political Science*, 1–12.

Williamson, S., C. L. Adida, A. Lo, M. R. Platas, L. Prather, and S. H. Werfel (2021). Family matters: How immigrant histories can promote inclusion. *American Political Science Review 115*(2), 686–693.

5 Tables and Figures

Table 1
Covariate Balance

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

Notes: The first column presents the mean and standard deviation for the full sample. Columns (2) to (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) Donation Venezuelan org.	(2) Donation non-migrant org.	(3) Trust	(4) Prosociality Index
Game Treatment	0.106	0.027	0.297	0.267
	(0.037)	(0.034)	(0.080)	(0.080)
	[0.008]	[0.264]	[0.002]	
Video Treatment	0.111	0.038	0.116	0.201
	(0.039)	(0.035)	(0.090)	(0.089)
	[0.008]	[0.207]	[0.178]	
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 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, 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 4-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 Kling et al. (2007). 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 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	0.048	0.079	0.299	0.413	0.334
	(0.031)	(0.041)	(0.081)	(0.082)	(0.081)	(0.079)
	[0.005]	[0.151]	[0.172]	[0.001]	[0.001]	
Video Treatment	0.105	0.017	0.095	0.266	0.453	0.332
	(0.031)	(0.044)	(0.084)	(0.091)	(0.086)	(0.085)
	[0.002]	[0.395]	[0.151]	[0.005]	[0.001]	
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 one if the respondent chose option "b" in the 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". "Same job opportunity" is a dummy that equals one if the respondent answered 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". "Seggregate" 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 4-point scale from 4-strongly disagree to 1-strongly agree (it was re-scaled 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 4-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 4-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 Kling et al. (2007). 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.

23

Table 4

Treatment Effects on Empathy and Perspective Taking

	(1) Empathic scale	(2) Perspective-taking scale
Game Treatment	-0.050	0.181
	(0.078)	(0.080)
	[0.306]	[0.110]
Video Treatment	0.117	0.114
	(0.081)	(0.084)
	[0.213]	[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 Davis (1980, 1983). The empathic concern scale has eight statement 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. 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) Economy	(2) Compete jobs	(3) Crime	(4) New ideas and cultures	(5) Contribute	(6) Beliefs Index
Game Treatment	0.099	0.091	0.073	0.008	0.280	0.161
	(0.081)	(0.080)	(0.080)	(0.084)	(0.082)	(0.081)
	[1.000]	[1.000]	[1.000]	[1.000]	[0.007]	
Video Treatment	-0.072	-0.009	0.029	-0.032	0.140	0.016
	(0.087)	(0.085)	(0.087)	(0.089)	(0.087)	(0.087)
	[1.000]	[1.000]	[1.000]	[1.000]	[0.983]	
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 4-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 4-point scale from 4-strongly disagree to 1-strongly agree (it was re-scaled so that a positive coefficient indicates more positive attitudes). "Crime" is the (z-scored) answer to the question: "Immigrants increase crime" on a 4-point scale from 4-strongly disagree to 1-strongly agree (it was re-scaled 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 4-point scale from 1-strongly disagree to 4-strongly agree. "Contribute" is the (z-scored) answer to the question: "In general, what immigrants contribute to a country is more than what they take away from it". "Beliefs Index" is constructed with the dependent variables of columns (1) to (5) using the methodology in Kling et al. (2007). 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.

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 has 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: "Mechi, 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 grandaughter around. I will miss Ana Sofia, when she used to cross the street and come here to play with the doggys." 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
Panel A: Sociodemographic characteristics					
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
Panel B: Prosociality Indicators					
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
Panel C: Attitudes Indicators					
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
Panel D: Empathy Indicators					
Empathic Concern Scale	831	0.03	0.96	-4	2
Perspective-taking Scale	831	0.10	0.95	-4	2
Panel E: Beliefs Indicators					
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) Prosociality Index	(2) Beliefs Index	(3) Attitudes Index
Game Treatment	0.252	0.151	0.318
	(0.081)	(0.080)	(0.078)
	[0.003]	[0.038]	[0.001]
Video Treatment	0.195	0.013	0.312
	(0.090)	(0.086)	(0.084)
	[0.023]	[0.172]	[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 persona 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 Kling et al. (2007) 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
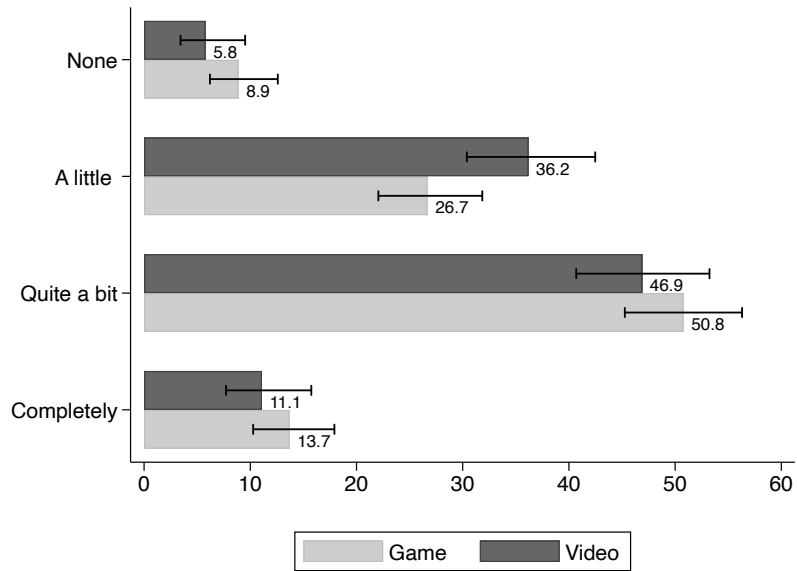
Figure B.1

Comprehension Assessment Score
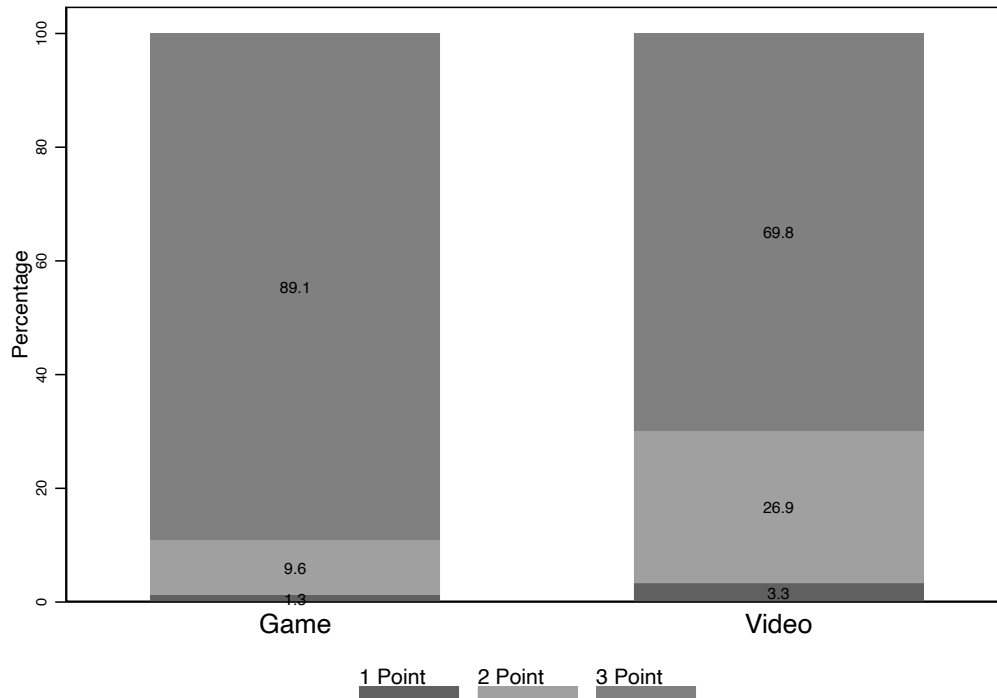
Notes: The figure illustrates the comprehension assessment score for the game and video treatments. Each answer was given a score of 1 if correct and 0 if incorrect. The score represents the sum of the three answers for each treatment. For the game treatment, the first question reads: "What was the name 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


(A) Compassion   (B) Distress   (C) Happiness
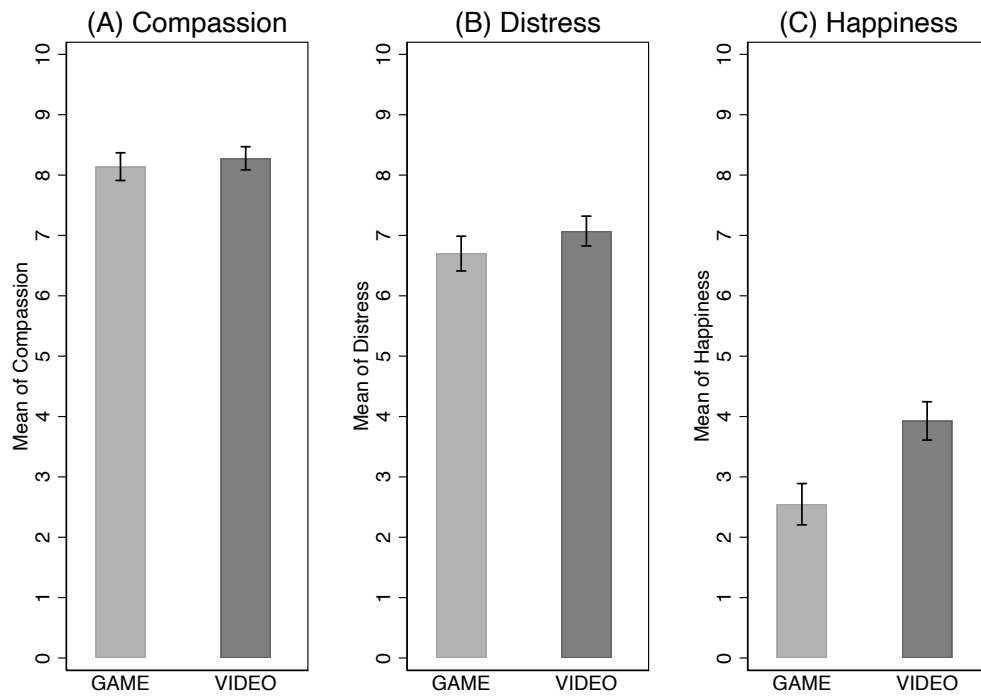
Notes: The figure illustrates the three answers from a question that was directed at measuring the respondent's emotions after receiving the treatment. It asks: "Please indicate how much you experienced the following emotional states when you watched the video / realized the virtual activity: a. Compassion; 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
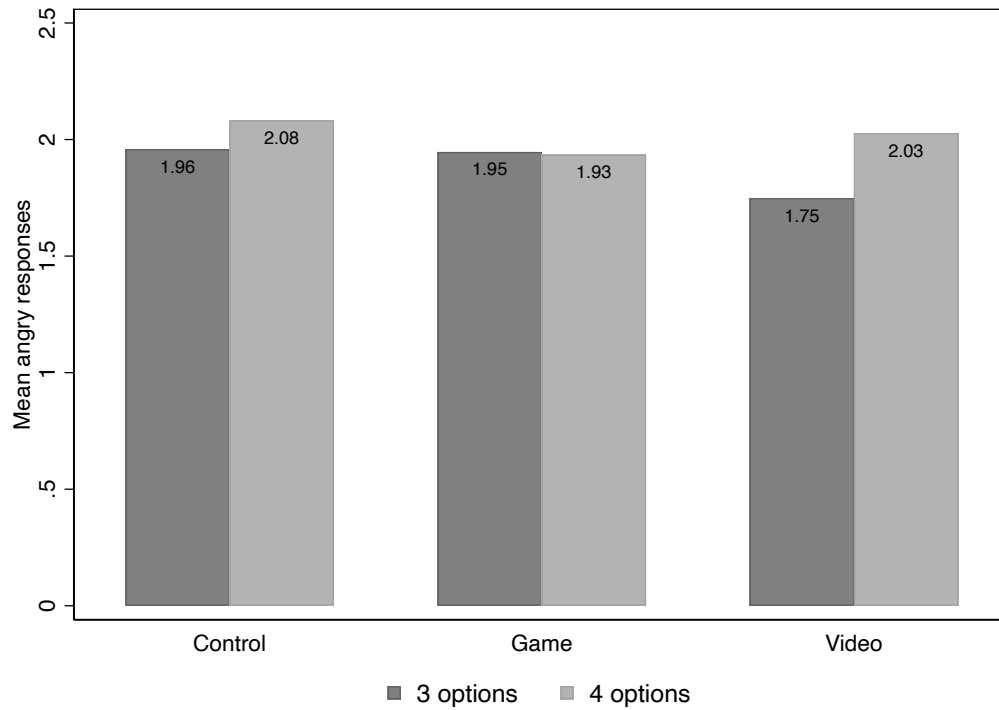
Notes: The figure illustrates the results of the listing experiment randomly assigned to all participants. The respondents were asked: "How many of the following issues annoy you? [Please respond how many not which of them]". The options were: "a. Homeless people sleeping on the street"; "b. People talking 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.

C Data

C.1 Variable definitions

Below is the complete list of the variables used in the paper with details on measurement and sources. The variables appear in the order of Table B.1 of descriptive statistics.

Student: Indicator variable that takes the value one if the individual reports being a student, zero otherwise. *Scale:* 0,1. *Source:* REBEL.

Male: Indicator variable that takes the value one if the individual reports being a male, zero otherwise. *Scale:* 0,1. *Source:* Survey instrument Sec III, Q1.

Age: Integer variable recording the age reported by the individual in the survey. *Scale:* 18,...,78. *Source:* Survey instrument Sec III, Q2.

Married: Indicator variable that takes the value one if the individual reports being married, zero otherwise. *Scale:* 0,1. *Source:* Survey instrument Sec III, Q3.

Religious: Indicator variable that takes the value one if the individual reports being a catholic, zero otherwise. *Scale:* 0,1. *Source:* Survey instrument Sec III, Q6.

Primary education completed: Indicator variable that takes the value one if the individual reports having completed primary education, zero otherwise. *Scale:* 0,1. *Source:* Survey instrument Sec III, Q9

Secondary education completed: Indicator variable that takes the value one if the individual reports having completed secondary education, zero otherwise. *Scale:* 0,1. *Source:* Survey instrument Sec III, Q9.

Higher education completed: Indicator variable that takes the value one if the individual reports having completed higher education, zero otherwise. *Scale:* 0,1. *Source:* Survey instrument Sec III, Q9.

Income: Categorical variable measuring the level of income of the individual. The lowest category represents the lowest income range, the highest category represents the highest income range. *Scale:* 1,2 ..., 10. *Source:* Survey instrument Sec III, Q13.

Low economic strata: Indicator variable that takes the value one if the individual reports their dwelling belongs to one of the lowest three economic strata (there are 6 strata in total), zero otherwise. *Scale:* 0,1. *Source:* Survey instrument Sec III, Q10.

Children: Indicator variable that takes the value one if the individual reports having children, zero otherwise. *Scale:* 0,1. *Source:* Survey instrument Sec III, Q12.

Donation Venezuelan org.: Indicator variable that takes the value one if the individual donates any amount greater than 500 COP (the minimum donation), in a dictator game, to an organization that supports Venezuelan migrants that transit through the Cúcuta-Bucaramanga route, zero otherwise. *Scale:* 0,1. *Source:* Survey instrument Sec VI, Q2.

Donation non-migrant org.: Indicator variable that takes the value one if the individual donates any amount greater than 500 COP (the minimum donation), in a dictator game, to an organization that supports vulnerable populations in Colombia, zero otherwise. *Scale:* 0,1. *Source:* Survey instrument Sec VI, Q2.

Trust: Z-scored transformation (using the mean and standard deviation of control group) of the answer (originally a 4-point Likert scale) to the statement "One can trust in Venezuelan migrants". *Scale:* Z-score. *Source:* Survey instrument Sec VII, Q4.

Effort: Indicator variable that takes value one if the individual responds "Circumstances beyond his or

her control" to the question "Which relates the most with a Venezuelan immigrant living in Colombia that is poor?", zero if the individual responds "Lack of effort on his or her own part". *Scale:* 0,1. *Source:* Survey instrument Sec V, Q2.

Same job opportunity: Indicator variable that takes value one if the individual responds "Circumstances beyond his or her control" to the question "Which relates the most with a Venezuelan immigrant living in Colombia that is poor?", zero if the individual responds "Lack of effort on his or her own part". *Scale:* 0,1. *Source:* Survey instrument Sec V, Q2.

Segregate: Z-scored transformation (using the mean and standard deviation of control group) of the inverted answer (originally a 4-point Likert scale) to the statement "Colombians have the right to keep Venezuelan immigrants out of their neighborhoods and Venezuelans should respect that right". *Scale:* Z-score. *Source:* Survey instrument Sec V, Q4.

Government must help: Z-scored transformation (using the mean and standard deviation of control group) of the answer (originally a 4-point Likert scale) to the statement "The Colombian government is obligated to help Venezuelan immigrants". *Scale:* Z-score. *Source:* Survey instrument Sec V, Q3.

Increase gov. spending: Z-scored transformation (using the mean and standard deviation of control group) of the answer (originally a 4-point Likert scale) to the statement "I would vote for a policy to increase government spending to assist Venezuelan immigrants". *Scale:* Z-score. *Source:* Survey instrument Sec V, Q5.

Empathic scale: Z-scored transformation (using the mean and standard deviation of control group). The original variable is the sum of the partial scores of the response of eight 0 to 4-point statements. *Scale:* Z-score. *Source:* Survey instrument Sec VII, Q1, Q3, Q5, Q7, Q9, Q11, Q13 and Q15.

Perspective-taking scale: Z-scored transformation (using the mean and standard deviation of control group). The original variable is the sum of the partial scores of the response of eight 0 to 4-point statements. *Scale:* Z-score. *Source:* Survey instrument Sec VII, Q2, Q4, Q6, Q8, Q10, Q12 and Q14.

Economy: Z-scored transformation (using the mean and standard deviation of control group) of the answer (originally a 4-point Likert scale) to the statement "Immigrants are good for a country's economy". *Scale:* Z-score. *Source:* Survey instrument Sec VI, Q1.a.

Compete jobs: Z-scored transformation (using the mean and standard deviation of control group) of the reversed answer (originally a 4-point Likert scale) to the statement "Immigrants come to compete for our jobs". *Scale:* Z-score. *Source:* Survey instrument Sec VI, Q1.b.

Crime: Z-scored transformation (using the mean and standard deviation of control group) of the reversed answer (originally a 4-point Likert scale) to the statement "Immigrants increase crime". *Scale:* Z-score. *Source:* Survey instrument Sec VI, Q1.c.

New ideas and cultures: Z-scored transformation (using the mean and standard deviation of control group) of the answer (originally a 4-point Likert scale) to the statement "Immigrants improve our society by bringing new ideas and cultures". *Scale:* Z-score. *Source:* Survey instrument Sec VI, Q1.d.

Contribute: Z-scored transformation (using the mean and standard deviation of control group) of the answer (originally a 4-point Likert scale) to the statement "In general, what immigrants contribute to a country is more than what they take away from it". *Scale:* Z-score. *Source:* Survey instrument Sec VI, Q1.e.

Comprehension Assessment Score: Integer variable that records the sum of the partial score assigned to the three questions to evaluate comprehension of each treatment. *Scale:* 0,1,2,3. *Source:* Survey instru-

ment Sec II Q1-Q3 (game) and Q2-Q4 (video).

Compassion: Categorical variable showing an individual's self-placement on the how much compassion they experienced while watching the video or playing the game where zero (0) is "Not at all" and (10) is "A lot" *Scale:* 0,1,2 ..., 10. *Source:* Survey instrument Sec IX Q1a.

Distress: Categorical variable showing an individual's self-placement on the how much distress they experienced while watching the video or playing the game where zero (0) is "Not at all" and (10) is "A lot" *Scale:* 0,1,2 ..., 10. *Source:* Survey instrument Sec IX Q1b.

Happiness: Categorical variable showing an individual's self-placement on the how much happiness they experienced while watching the video or playing the game where zero (0) is "Not at all" and (10) is "A lot" *Scale:* 0,1,2 ..., 10. *Source:* Survey instrument Sec IX Q1c.

Immersion in the Tasks: Categorical variable that records the answers to the question "How much did you feel the experience of the Venezuelan migrant was an extension of yourself? None; A little; Quite a bit; and Completely". *Scale:* 1,2,3, and 4. *Source:* Survey instrument Sec I Q1.

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 Kling et al. (2007). 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 diving 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

Panel A: Altruism

Panel B: Trust
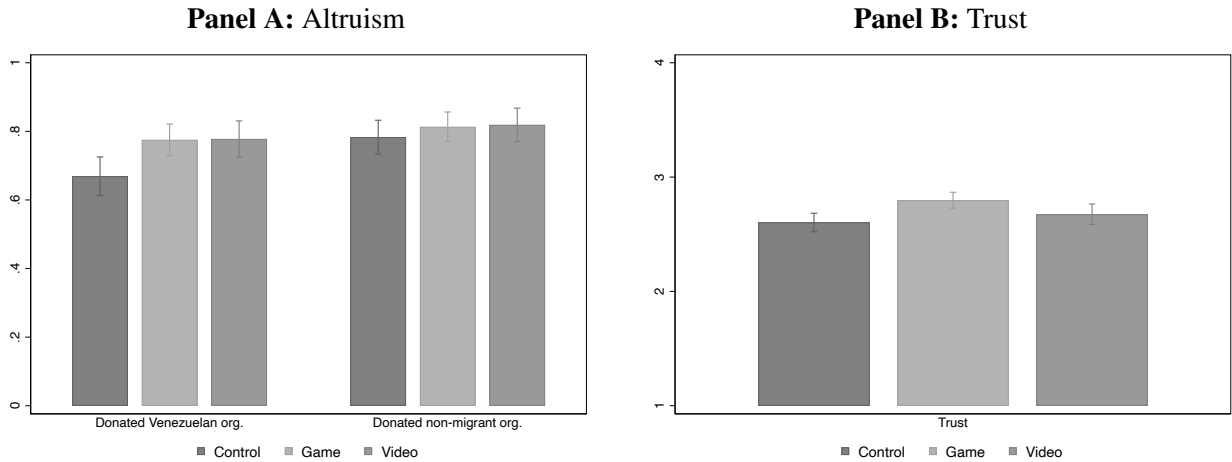
Notes: These figures illustrate the raw means of the prosocial behavior variables and their respective confidence interval. Panel A reports the raw means of the variables that are measured in percentage points (i.e., range from 0 to 1). These variables come from an incentivized dictator game presented 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

**Panel A:** Effort and Job Opportunities   **Panel B:** Segregation and Policy
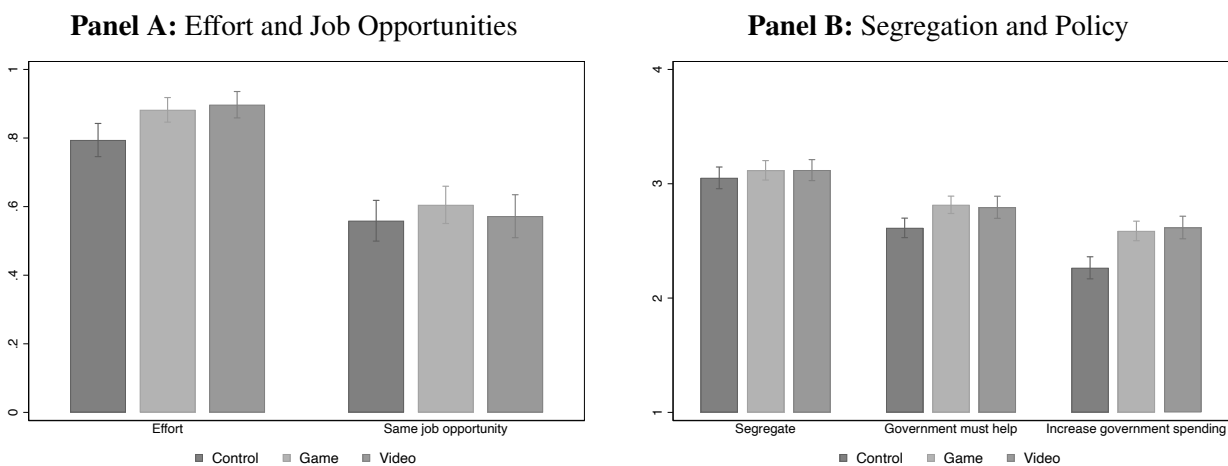
Notes: These figures illustrate the raw means of the attitudes variables and their respective confidence interval. Panel A reports the raw means of the variables that are measured in percentage points (i.e., range from 0 to 1). The variable "Effort" reports the effect of the intervention on the following 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
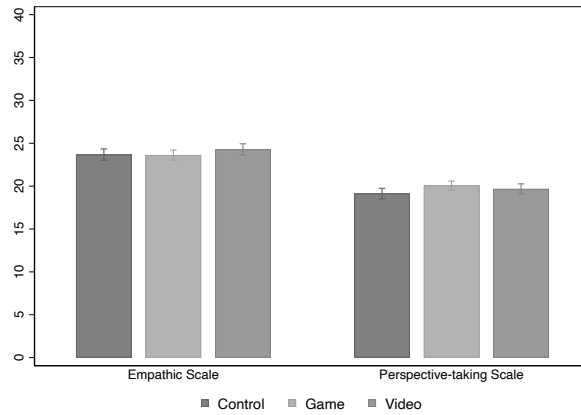
Notes: This figure illustrates the raw means of the empathy variables and their respective confidence interval. These variables come from the Interpersonal Reactivity Index (IRI) originally formulated by Davis (1980, 1983). The scale has been validated in Colombia b Pérez-Albéniz et al. (2003). The questions allow the construction of an empathic concern and perspective-taking scale. The empathic concern scale has eight statement 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
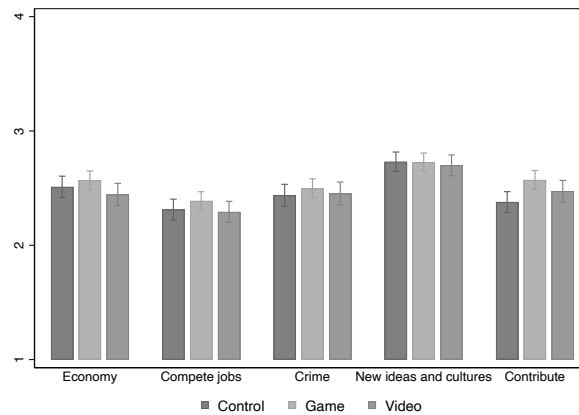
Notes: This figure illustrates the raw means of the beliefs variables and their respective confidence interval. These variables report the score of a 5 likert scale statements with answers that go from 1. Strongly disagree to 4. Strongly agree (i.e., range from 1 to 4). The "Economy" variable answers 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. Immersion[21]

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

---

[21]Adapted from Behm-Morawitz et al. (2015), 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. Misinformation[22]

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).

---

[22]Questions 3 and 4 are adpated from Alesina et al. (2018)

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 Migrants[23]

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

---

[23]Question 2 is adapted from Alesina et al. (2018)

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]

---

[24]In the same screen particpants 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. Trust[25]

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

---

[25]Questions 1 to 3 are from Kosse et al. (2020) and have been experimentally validated by Fehr et al. (2002) and Falk et al. (2018)

VII. Empathic Concern and Perspective Taking Scales[26]

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.

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 bias[27]

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

---

[26]Questions are taken from Davis (1980, 1983)

[27]Questions are adapted from Crowne et al. (1964)

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: