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Supplementary Information for

Perspective-taking can promote short-term inclusionary behavior toward Syrian refugees

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Supporting Information Text

1. Materials and methods

Sample. We worked with YouGov, which provides a representative sample of American citizens. The following describes YouGov's sampling strategy:

"YouGov interviewed 7806 respondents randomly assigned to six different treatment groups who were then matched down to a sample of 900 each to produce the final dataset of 5400 respondents. The respondents were matched to a sampling frame of US citizens on gender, age, race, education, party identification, ideology, and political interest. The frame was constructed by stratified sampling from the full 2010 American Community Survey (ACS) sample with selection within strata by weighted sampling with replacements (using the person weights on the public use file). Data on voter registration status and turnout were matched to this frame using the November 2010 Current Population Survey. Data on interest in politics and party identification were then matched to this frame from the 2007 Pew Religious Life Survey. The matched cases were weighted to the sampling frame using propensity scores. The matched cases and the frame were combined and a logistic regression was estimated for inclusion in the frame. The propensity score function included age, gender, race/ethnicity, years of education, voter registration, ideology, non-identification with a major party, and census region. The propensity scores were grouped into deciles of the estimated propensity score in the frame and post-stratified according to these deciles. All six groups were then combined, and the combined weights were post-stratified to match a full stratification of four category age, four category race, gender, and four category education." (3)

The sample was randomly divided into two waves, and within each wave, each respondent was randomly assigned to the control, perspective-taking, or information condition. The retention rate for Wave 2 was 86.8%. While respondents may or may not complete the survey on the day they receive the invitation, we ensured that our study was completed before the presidential election on November 8, 2016.

Instrument. Our survey instrument was divided into three sections: (1) the collection of pretreatment covariates, (2) the administration of the treatment, (3) the collection of outcome data. Our control condition offered no treatment, such that it consisted of only two sections: the collection of pretreatment covariates, and the collection of outcome data.

Our perspective-taking treatment draws from the Pulitzer Center's lesson-building exercise entitled "What is it like to be a refugee and how can we help spread the word about the problems refugees face?", available online at https://pulitzercenter.org/builder/lesson/w it-be-refugee-and-how-can-we-help-spread-word-about-problems-refugees-face-16023.

Our information treatment is presented in the form of a figure (1) that illustrates the stark contrast between the contribution of countries such as Canada, France, and Germany, and that of the United States. We note that this treatment provides only a set of facts about countries' commitments to accept refugees: there is no text which interprets this information or puts forward an argument in favor of increasing refugee commitments.

Pre-analysis Plan. In our pre-analysis plan, we specified two main outcomes of interest. *Rating* is our main attitudinal measure, and *Letter* is our main behavioral measure.

Rating *On a scale from 1 to 7, where 1 indicates the United States should absolutely not admit the refugee and 7 indicates that the United States should definitely admit the refugee, how would you rate Refugee 1/2?*

Letter *Did the respondent contribute comments to an anonymous letter to be sent to the next President of the United States in support of resettling refugees?*

In this paper, we present results on our behavioral measure. In the SI, we show results on the attitudinal measure we pre-registered, as well as on one additional outcome measure: a measure of support for refugee admissions provided they pass a security screening.

Analysis. Given the randomized design of the experiment, we can rely primarily on linear regressions of treatments with appropriate covariate controls on the outcomes to identify our causal estimands of interest.

We include controls for the following pre-specified pretreatment covariates, measured for each respondent: gender, age (via birth year), U.S. born, education level, religion, party ID, and ethnocentrism. We use the demeaning construction for non-categorical covariate controls as well as interactions with the treatment in estimating equations (2). Given the goal of identifying the treatment effect of treatment T on outcome Y and controlling for pretreatment covariate X, the estimating equation is:

$$Y = \beta_0 + \beta_1 T + \beta_2(X - \bar{X}) + \beta_3 T \cdot (X - \bar{X}) \quad [1]$$

where β_1 is the estimated treatment effect, and errors are robust and clustered at the individual level for outcomes measured several times for each individual (*Rating*). While our randomized research design allows for an unbiased estimation of the treatment effect, we wish to improve precision, both through the adjustment of covariates (2) as well as the appropriate clustering of errors. We note that our main findings are unchanged when using WLS.

2. Research design

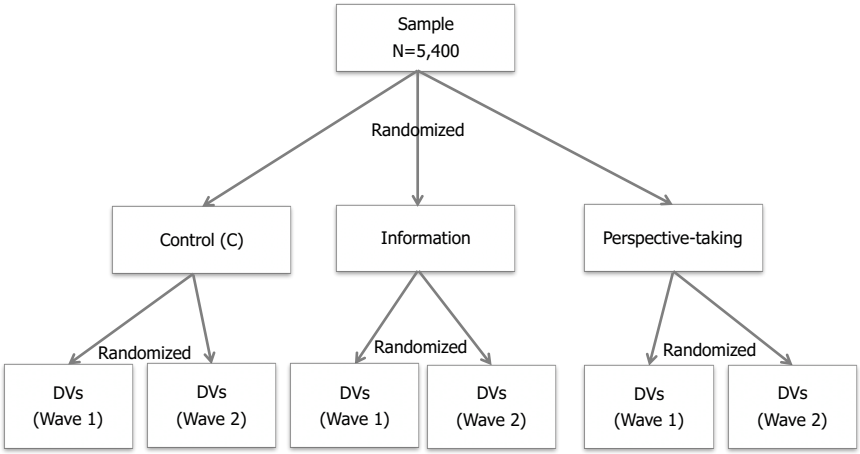

Fig. S1. Research design

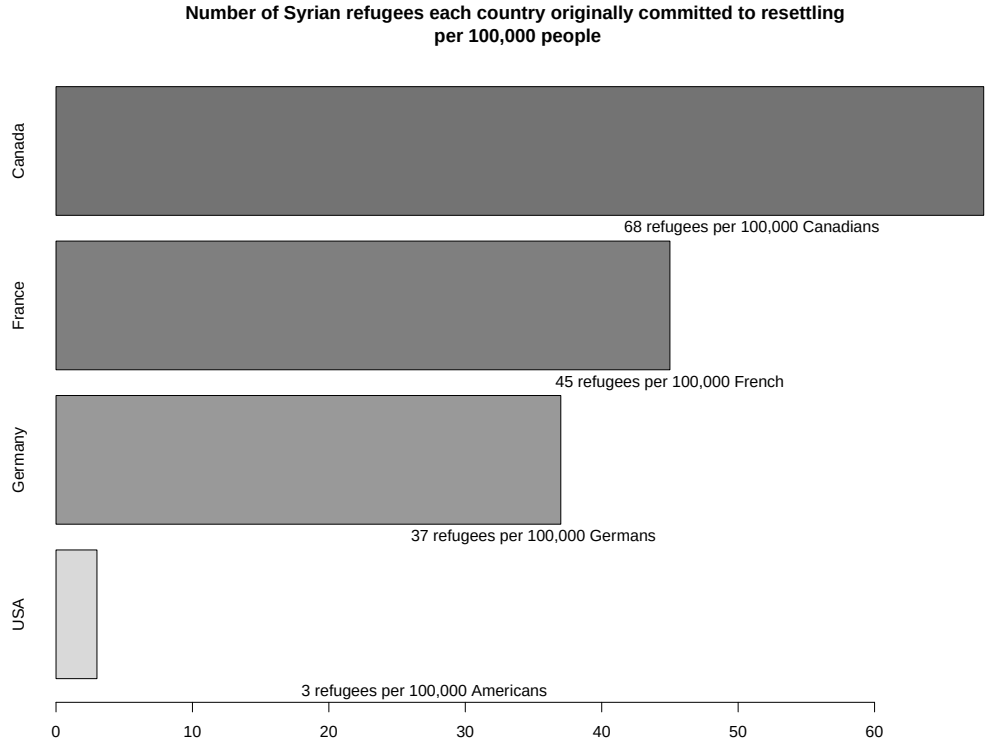

Fig. S2. Information treatment

3. Results by wave

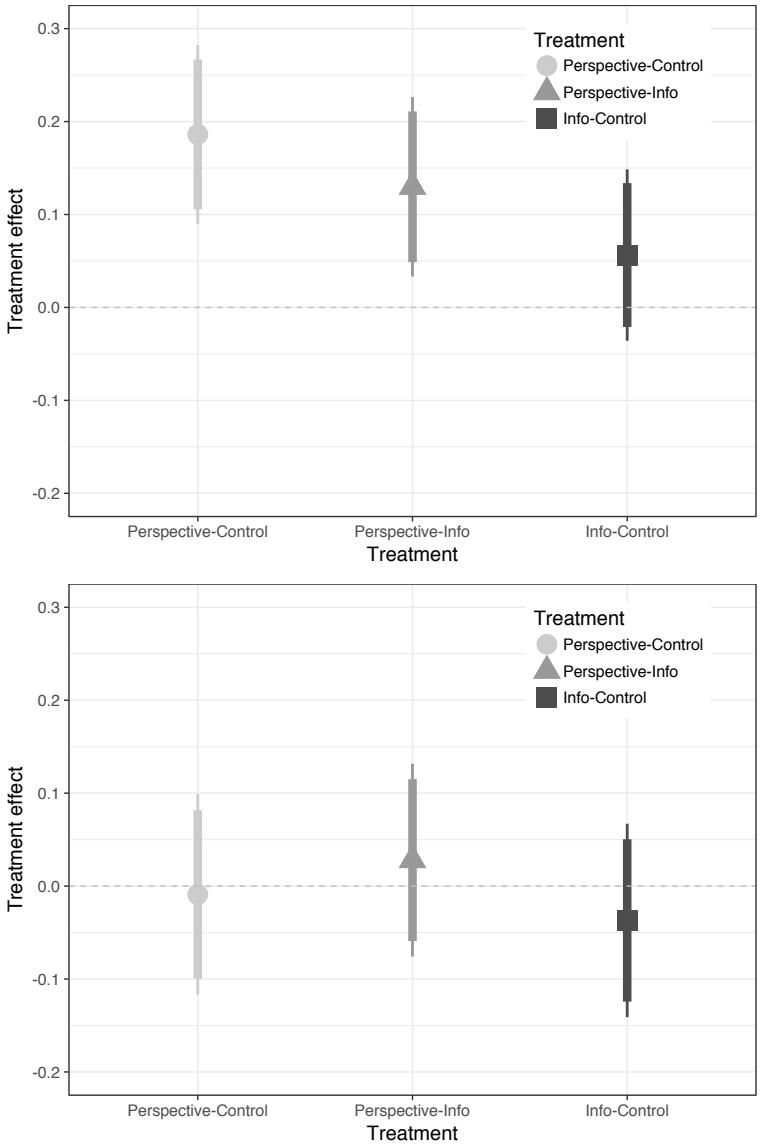

Fig. S3. Top: Average treatment effect of perspective-taking relative to the control condition (left-most) and the information condition (middle); Average treatment effect of information relative to control condition (right-most). Bars represent 90% and 95% confidence intervals. Wave 1 sample. **Bottom:** Average treatment effect of perspective-taking relative to the control condition (left-most) and the information condition (middle); Average treatment effect of information relative to control condition (right-most). Bars represent 90% and 95% confidence intervals. Wave 2 sample. All graphs show average treatment effects based on a OLS regression estimating Equation 1.

4. Weighted Least Squares

When we estimate our average treatment effects using sample weights to adjust for the sampling process described above, our results hold:

Table S1. Weighted Least Squares Analysis

	Treatment: Information		Treatment: Perspective-taking	
	(1)	(2)	(3)	(4)
Variable	DV: *Rating*	DV: *Letter*	DV: *Rating*	DV: *Letter*
Intercept	4.622^{***}	0.165^{***}	4.622^{***}	0.165^{***}
	(0.08)	(0.01)	(0.08)	(0.02)
Treatment	-0.088	-0.027	-0.006	$0.040^{(.)}$
	(0.11)	(0.02)	(0.11)	(0.02)
Observations	10,800	1,800	10,800	1,800

Notes: Coefficients are from a simple regression of outcome on treatment with errors robust, and clustered for models (1) and (3), weighted by sample inclusion probability. Sample is from Wave 1 only, as pre-registered. *** $p \geq 0.001$; ** $p \geq 0.01$; * $p \geq 0.05$; (.) $p \geq 0.10$.

5. Wave effect on writing a letter

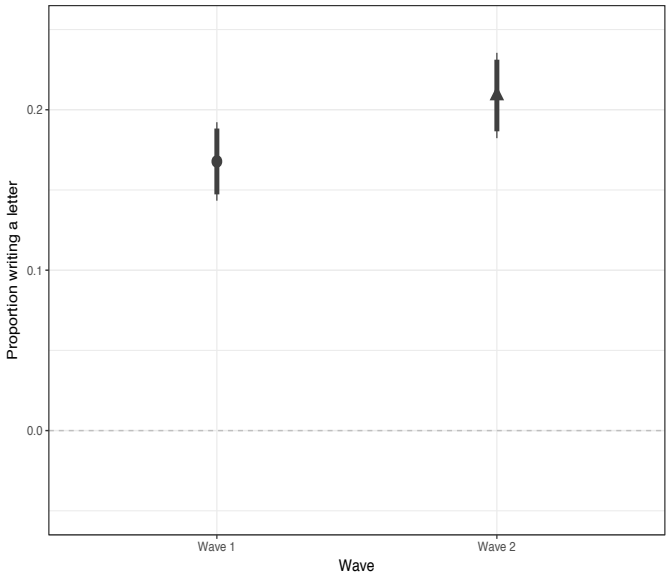

Fig. S4. DV: Letter. Proportion of sample in control condition that wrote a positive letter for Wave 1 (left) and Wave 2 (right). Bars are 95% and 90% confidence intervals from difference-of-means tests.

6. Example letters

Table S2. Examples of anonymous letters to President 45

Supportive messages	Unsupportive messages
“Give me your tired, your poor, Your huddled masses yearning to breathe free, The wretched refuse of your teeming shore. Send these, the homeless, tempest-tost to me, I lift my lamp beside the golden door!"	“I absolutely do not support accepting refugees into the US. We have people here who are suffering. Help Americans before you help everyone else."
“After being very well vetted, I see no reason why the United States should not admit a Syrian refugee to our country. This is a humanitarian crisis and the United States should do its part in helping to alleviate the displacement and immense suffering the Syrian people. The people we admit will ultimately contribute to our society and can be an asset. Please make a careful, thoughtful consideration of this important matter. Thank you."	“Don’t do it. We are over crowded and can’t even take care of our own. We have homeless veterans on our street’s and can’t help them. How do we have money to help immigrant’s who will potentially blow us up in the end? It’s a waste of our resources! Even pssing a background check you can’t measure their true intention! I would much rather see the US help US citizens instead of refugees. I’m scared to leave my home. There are refugees every where and they are rude and treat me like i’m invading their space!Their invading mine! I held the door open for one at a department store and was called a female dog! Please save our country!"
“Dear POTUS, I express my support of refugees coming to the United States. Especially the women and children, they need food and healthcare. Thanks so much."	“Sorry have no support for them. They should be banned as all Muslims should."

7. Other HTEs

	Model 1: Perspective-taking vs Control	Model 2: Information vs Control	Model 3: Perspective-taking vs Information
Treatment	0.045* (0.02)	-0.002 (0.2)	0.048** (0.02)
Education: College	0.106*** (0.02)	0.106*** (0.02)	0.118*** (0.02)
Education: Postgrad	0.281*** (0.06)	0.282*** (0.06)	0.227*** (0.06)
Treatment*College	-0.001 (0.04)	0.012 (0.03)	-0.013 (0.04)
Treatment*Postgrad	-0.108 (0.79)	-0.055 (0.08)	-0.053 (0.08)
Party: Independent	-0.021 (0.03)	-0.021 (0.03)	-0.098** (0.03)
Party: Republican	-0.185*** (0.03)	-0.185*** (0.03)	-0.197*** (0.03)
Treatment*Independent	-0.118* (0.05)	-0.076(.) (0.05)	-0.042 (0.05)
Treatment*Republican	-0.082(.) (0.043)	-0.012 (0.04)	-0.070 (0.04)
Race: White	0.022 (0.03)	0.022 (0.03)	0.016 (0.03)
Treatment*White	-0.011 (0.4)	-0.006 (0.04)	-0.005 (0.04)
Sex: Male	0.011 (0.013)	0.011 (0.02)	-0.0001 (0.01)
Treatment*Male	-0.021 (0.019)	-0.011 (0.02)	-0.010 (0.02)
Wave: Wave 2	0.041* (0.02)	0.041* (0.02)	0.043* (0.02)
Treatment*Wave 2	-0.052* (0.03)	0.002 (0.03)	-0.054* (0.03)

Notes: Our treatment coefficient is obtained from a simple model of our outcome variable, *Letter*, on treatment on wave 1 sample with robust standard errors in parentheses. For covariates, the model regresses our outcome variable, *Letter* on the treatment, the covariate in question, and the interaction of the two on wave 1 sample (except for the model estimating wave effects) with robust standard errors in parentheses. The baseline category for Education is High school. The baseline category for Party is Democrat. The baseline category for Sex is Female. The baseline category for Race is Non-White. The baseline category for Wave is Wave 1. $^{(.)}$ indicates statistical significance at 90%, * indicates statistical signficance at 95%, ** indicates statistical significance at 99%, and *** indicates significance greater than 99% confidence level.

8. Analysis on other outcome variables

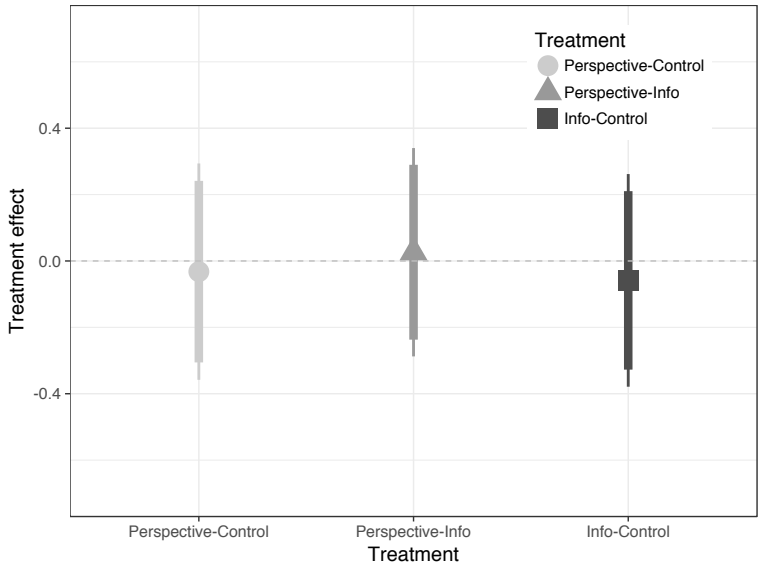

Fig. S5. DV: Refugee rating. Average treatment effect of perspective-taking relative to the control condition (left-most) and the information condition (middle); Average treatment effect of information relative to control condition (right-most). Bars represent 90% and 95% confidence intervals. Full sample. Average treatment effects based on an OLS estimating Equation 1.

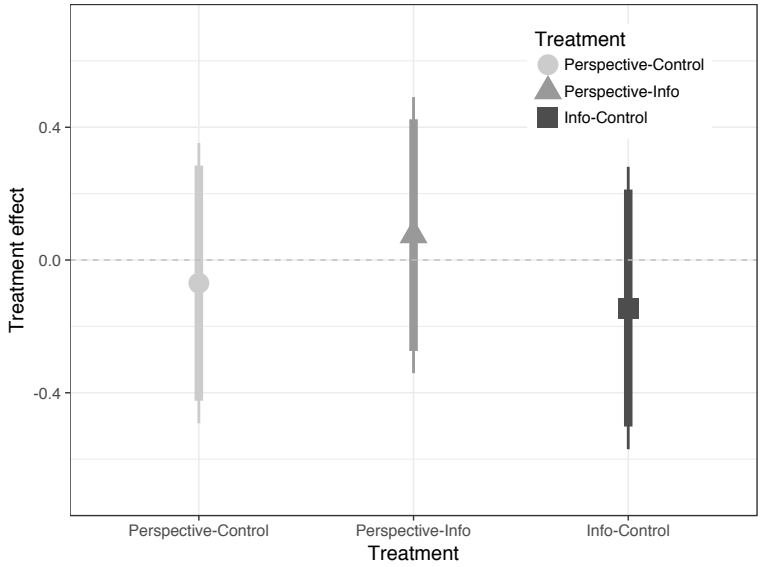

Fig. S6. DV: Refugee rating, Wave 1. Average treatment effect of perspective-taking relative to the control condition (left-most) and the information condition (middle); Average treatment effect of information relative to control condition (right-most). Bars represent 90% and 95% confidence intervals. Wave 1 sample. Average treatment effects based on an OLS estimating Equation 1.

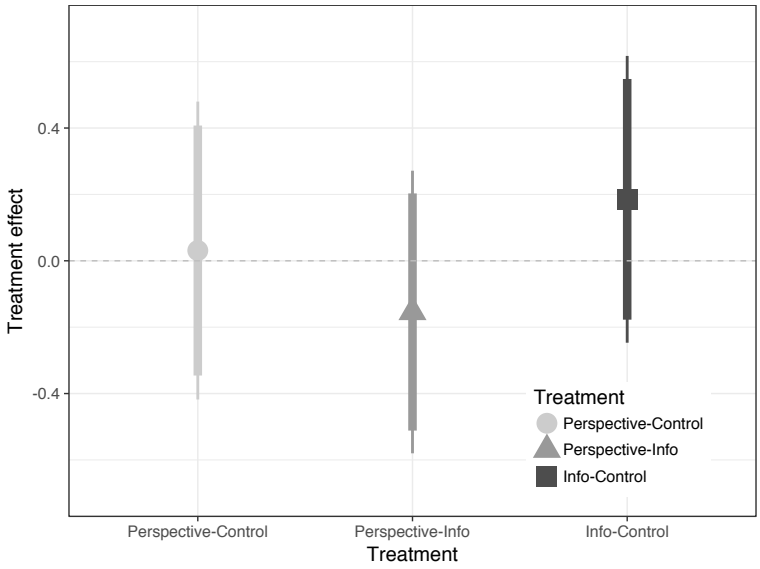

Fig. S7. DV: Refugee rating, Wave 2. Average treatment effect of perspective-taking relative to the control condition (left-most) and the information condition (middle); Average treatment effect of information relative to control condition (right-most). Bars represent 90% and 95% confidence intervals. Wave 2 sample. Average treatment effects based on an OLS estimating Equation 1.

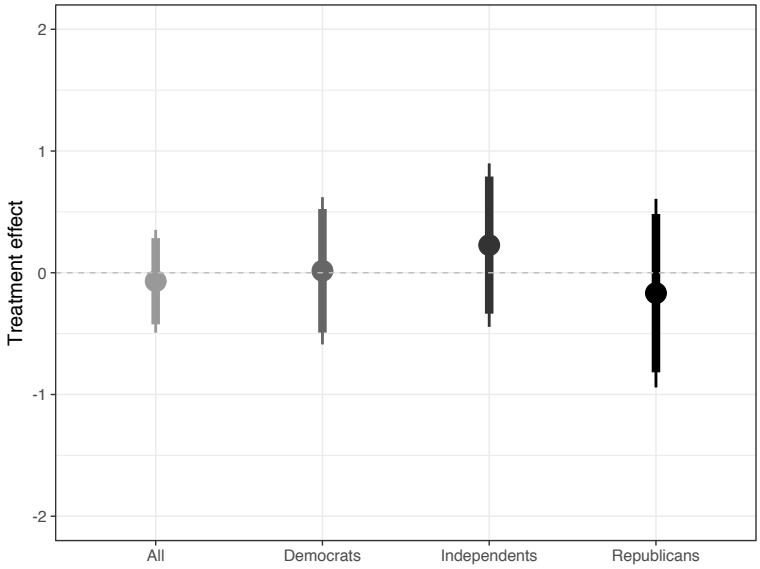

Fig. S8. DV: Refugee rating. From left to right: Average treatment effect of perspective-taking treatment on refugee rating for full sample, sub-sample of Democrats, sub-sample of Independents, and sub-sample of Republicans. Bars represent 90% and 95% confidence intervals. Wave 1 sample. All graphs show treatment effects based on a OLS regression estimating Equation 1.

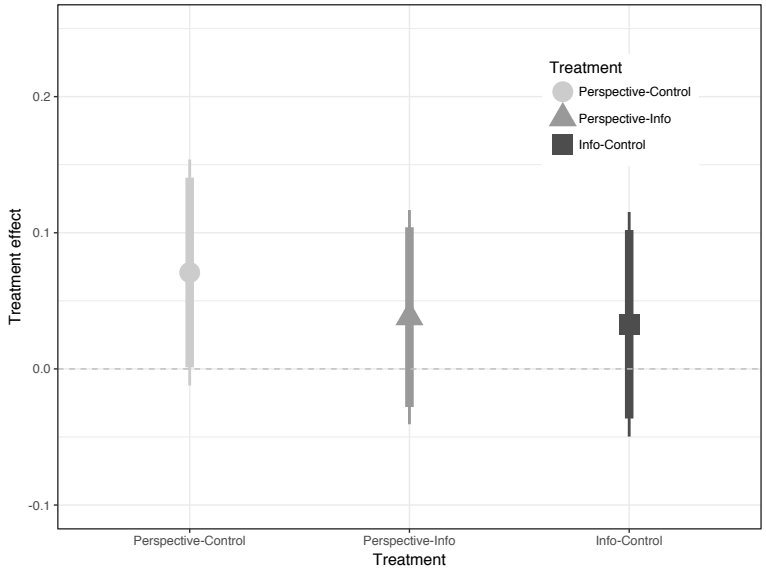

Fig. S9. DV: Refugee screening. Average treatment effect of perspective-taking relative to the control condition (left-most) and the information condition (middle); Average treatment effect of information relative to control condition (right-most). Bars represent 90% and 95% confidence intervals. Full sample. Average treatment effects based on a OLS regression estimating Equation 1.

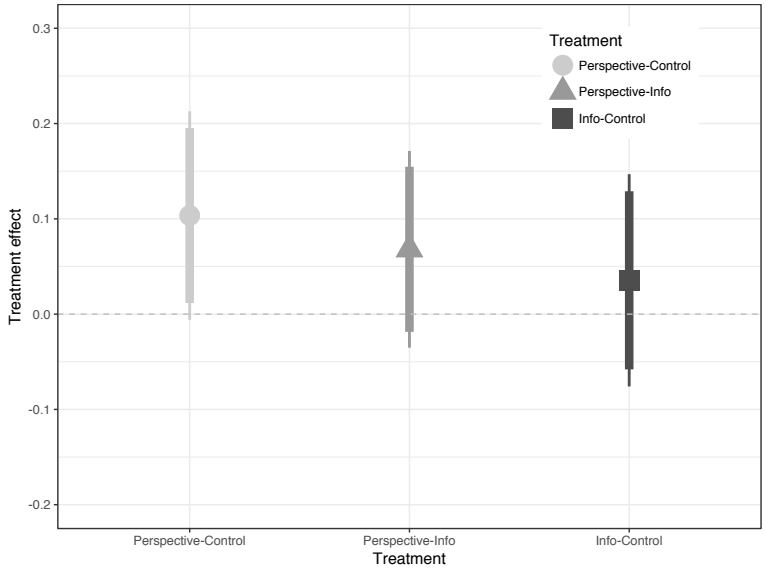

Fig. S10. DV: Refugee screening, Wave 1. Average treatment effect of perspective-taking relative to the control condition (left-most) and the information condition (middle); Average treatment effect of information relative to control condition (right-most). Bars represent 90% and 95% confidence intervals. Wave 1 sample. Average treatment effects based on a OLS regression estimating Equation 1.

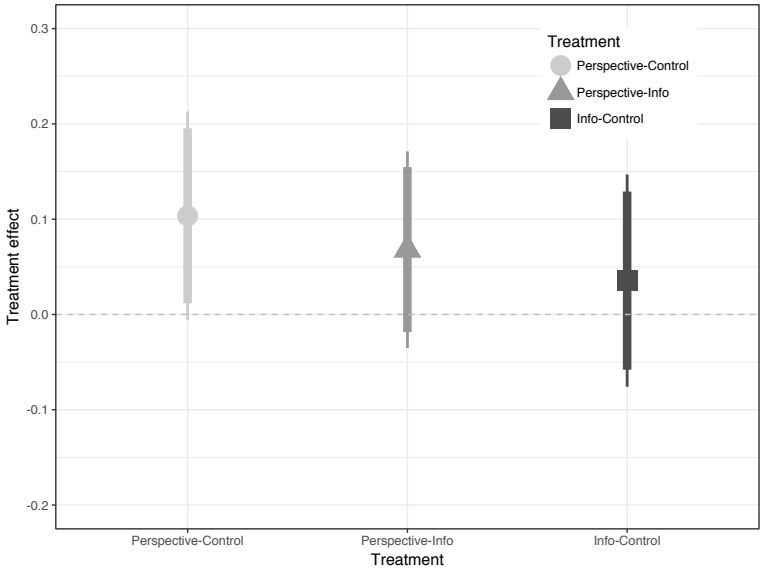

Fig. S11. DV: Refugee screening, Wave 2. Average treatment effect of perspective-taking relative to the control condition (left-most) and the information condition (middle); Average treatment effect of information relative to control condition (right-most). Bars represent 90% and 95% confidence intervals. Wave 2 sample. Average treatment effects based on a OLS regression estimating Equation 1.

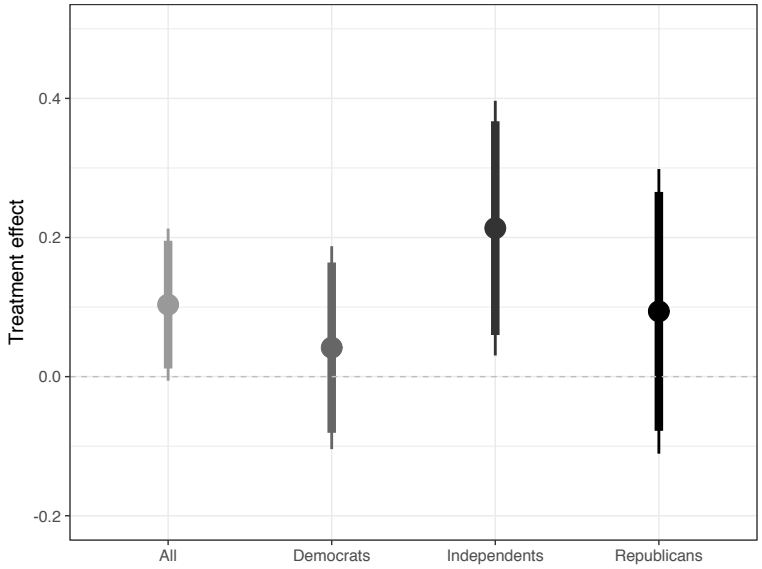

Fig. S12. DV: Refugee screening. From left to right: Average treatment effect of perspective-taking treatment on refugee screening for full sample, sub-sample of Democrats, sub-sample of Independents, and sub-sample of Republicans. Bars represent 90% and 95% confidence intervals. Wave 1 sample. All graphs show treatment effects based on a OLS regression estimating Equation 1.

9. Exploring the link between the attitudinal measure (Y2) and the semi-behavioral measure (Y6)

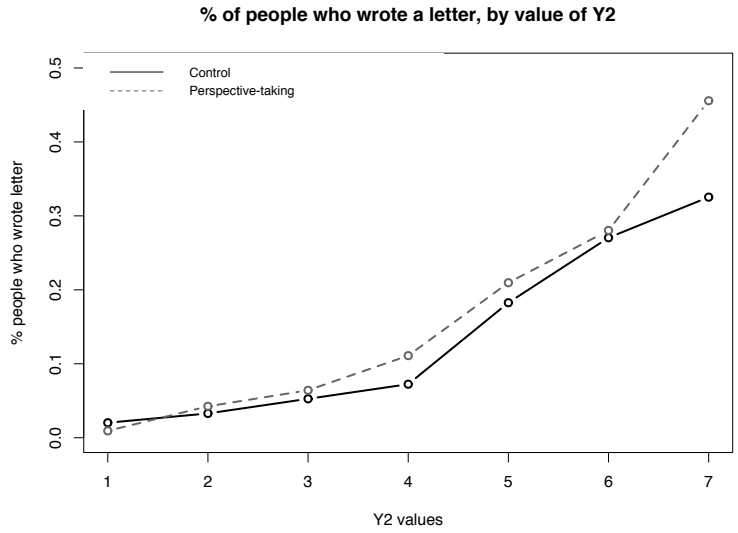

Fig. S13. Full wave 1 sample. Probability of writing a letter at each refugee rating value in the control (solid line) and perspective-taking (dashed line) conditions. Wave 1 sample.

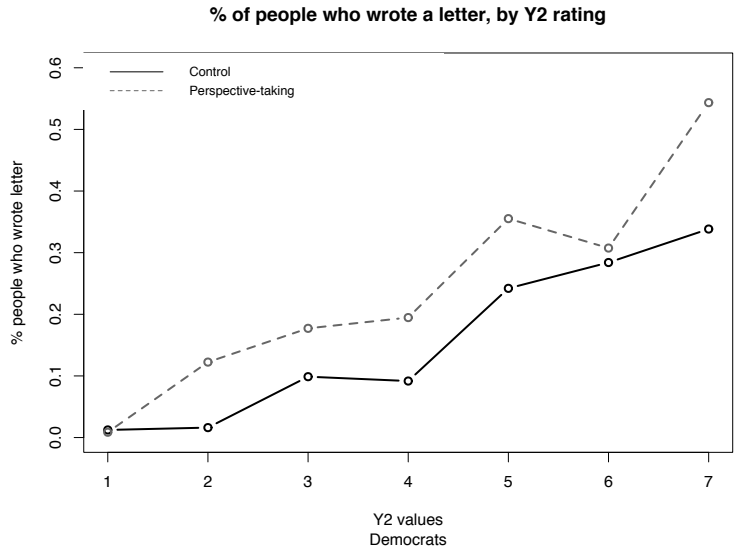

Fig. S14. Democrats wave 1 sample. Probability of writing a letter at each refugee rating value for Democrats in the control (solid line) and perspective-taking (dashed line) conditions. Wave 1 sample.

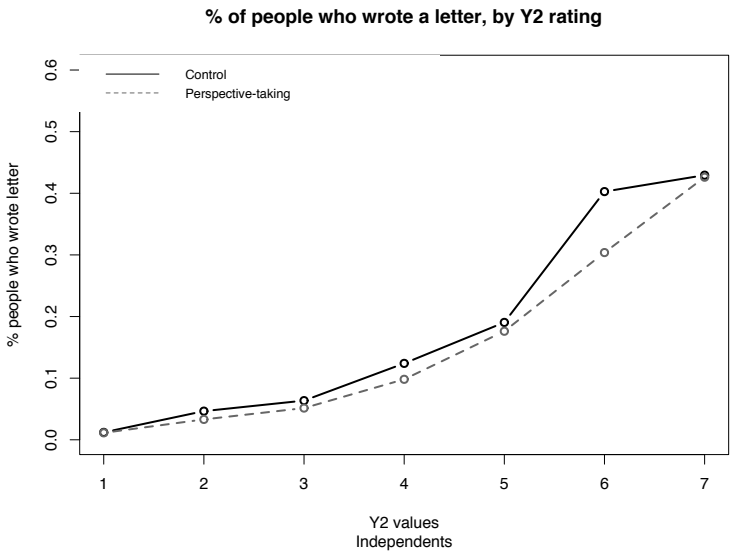

Fig. S15. Independents wave 1 sample. Probability of writing a letter at each refugee rating value for Independents in the control (solid line) and perspective-taking (dashed line) conditions. Wave 1 sample.

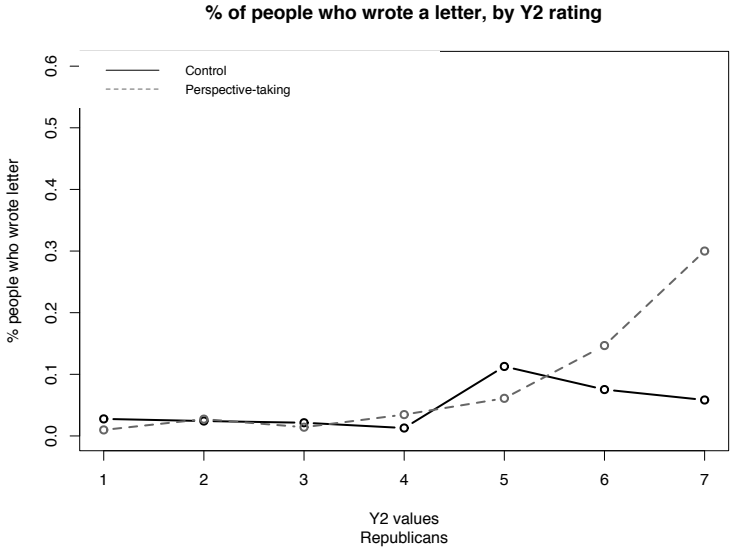

Fig. S16. Republicans wave 1 sample. Probability of writing a letter at each refugee rating value for Republicans in the control (solid line) and perspective-taking (dashed line) conditions. Wave 1 sample.

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