

SOCIAL SCIENCES

Explaining opposition to refugee resettlement: The role of NIMBYism and perceived threats

Jeremy Ferwerda,^{1*} D.J. Flynn,^{2*} Yusaku Horiuchi^{1,2*†}

One week after President Donald Trump signed a controversial executive order to reduce the influx of refugees to the United States, we conducted a survey experiment to understand American citizens' attitudes toward refugee resettlement. Specifically, we evaluated whether citizens consider the geographic context of the resettlement program (that is, local versus national) and the degree to which they are swayed by media frames that increasingly associate refugees with terrorist threats. Our findings highlight a collective action problem: Participants are consistently less supportive of resettlement within their own communities than resettlement elsewhere in the country. This pattern holds across all measured demographic, political, and geographic subsamples within our data. Furthermore, our results demonstrate that threatening media frames significantly reduce support for both national and local resettlement. Conversely, media frames rebutting the threat posed by refugees have no significant effect. Finally, the results indicate that participants in refugee-dense counties are less responsive to threatening frames, suggesting that proximity to previously settled refugees may reduce the impact of perceived security threats.

INTRODUCTION

On 27 January 2017, President Donald Trump signed an executive order that temporarily barred citizens of seven Muslim-majority countries from entering the United States, suspended refugee admissions for 120 days, and banned Syrian refugees from entering the United States indefinitely. After a federal court blocked the order, President Trump issued a revised version on 6 March 2017. These orders sharply reversed the expansion in refugee admissions under the Obama Administration. Moreover, they elevated the U.S. refugee resettlement program into the global spotlight and contributed to an international debate over whether to expand or curtail refugee admissions (1, 2).

Despite the contemporary relevance of refugee policy, our understanding of the factors that shape public attitudes toward resettlement programs remains incomplete. Although a growing social science literature investigates public attitudes toward refugees or asylum seekers (1, 3–7), few studies directly examine the factors that shape citizens' opposition to resettlement programs (rather than refugees or asylum seekers as persons) or leverage experimental designs. This study addresses these gaps by implementing a survey experiment to evaluate two factors hypothesized to shape public support for resettlement programs: not-in-my-back-yard syndrome (NIMBYism) and media framing.

First, given that the economic and cultural impacts of refugee resettlement are distributed spatially, we investigate whether public support varies by the geographic location of potential resettlement. According to the Office of Refugee Resettlement's (ORR) *Annual Report to Congress* (8), refugees are now placed in 232 metropolitan areas across the United States. While humanitarian values may lead many citizens to support refugee resettlement in principle, conflicts between self-interest and societal interest may arise in directly affected localities. These spatial collective action problems—generally referred to as NIMBYism—occur when people oppose developments in their vicinity despite accepting the necessity for such developments elsewhere

(9–13). Although traditionally limited to physical facilities (for example, nuclear power plants), NIMBYism has increasingly been used as a theoretical framework to understand attitudes toward service provision, including asylum centers (14–16). Our survey experiment investigates whether participants display a pattern consistent with this collective action problem, namely, reduced support for local resettlement relative to resettlement elsewhere in the country.

Second, we examine the influence of media frames that depict refugees as threatening or nonthreatening to national security. An extensive body of literature has documented that media coverage often depicts refugees as threats to public safety, health, local economies, and culture (3, 17–20). In framing the executive order, President Trump explicitly invoked refugees as a threat to national security—a frame that was subsequently reinforced by media coverage, which highlighted the large number of Muslims admitted under the auspices of the refugee program. In response, pro-refugee advocates have spent considerable effort attempting to rebut the claim that refugees undermine security. However, extant studies have not used experimental designs to examine the extent to which these frames affect support for resettlement. We expect that threatening and counterthreatening frames may be especially consequential in shaping attitudes toward refugee resettlement because public knowledge about refugee-related programs is low (21), citizens often hold competing considerations on these issues [see p. 61 of Druckman *et al.* (22)], and such frames often emphasize threats to personal safety (23).

In addition to examining the effects of NIMBYism and media frames on public support for refugee resettlement, we also investigate whether spatial proximity to previously settled refugees moderates either of these effects. Research suggests that citizens in diversifying areas are more likely to adopt xenophobic attitudes when immigration is nationally salient (24, 25), and reactions to refugee resettlement also appear to be sensitive to local context (26–29). More broadly, an extensive body of literature suggests that local intergroup contact—and the cooperation or conflict that ensues—shapes subsequent attitudes toward outgroups such as refugees (30–38). However, we are not aware of any existing study that examines whether intergroup contact conditions responsiveness to media coverage. Thus, we investigate the potential moderating role of spatial proximity using data from the

Copyright © 2017
The Authors, some
rights reserved;
exclusive licensee
American Association
for the Advancement
of Science. No claim to
original U.S. Government
Works. Distributed
under a Creative
Commons Attribution
NonCommercial
License 4.0 (CC BY-NC).

Downloaded from <http://advances.sciencemag.org/> on November 22, 2017

¹Department of Government, Dartmouth College, Hanover, NH 03755, USA.

²Program in Quantitative Social Science, Dartmouth College, Hanover, NH 03755, USA.

*The authors contributed equally to this work.

†Corresponding author. Email: yusaku.horiuchi@dartmouth.edu

ORR (8). Specifically, we divide study participants into those living in counties with high refugee density and those living in counties with low refugee density (as defined by the ORR) and examine whether treatment effects vary across these subgroups.

DESIGN AND RESULTS

We fielded a preregistered survey experiment 1 week after the first executive order. Participants were randomly assigned into one of three conditions. In the first condition, which serves as the control, participants did not read any news coverage. Participants in the two treatment groups read an excerpt from a news article focusing on the extent to which refugees are linked to terrorism. The first treatment, which we refer to as the threatening frame, was entitled “Islamic State finds success infiltrating its terrorists into refugee flows to West.” This article states that terrorists “inflict refugee flows to the West with mass killers” and subsequently mentions both recent terrorist attacks in the United States and President Trump’s executive order to ban immigration from “high-risk Muslim-majority countries.” The second treatment, which we refer to as the counterthreatening frame, was published on the same day. It was entitled “How many fatal terror attacks have refugees carried out in the US? None.” As the title suggests, the article attempts to rebut the claim that refugees pose security threats. Thus, it represents a “counterframe” (39).

After reading one (or neither) of these media frames, participants recorded their support for national and local resettlement in two separate questions (order randomized). These questions asked participants to indicate their preferences for future resettlement on a scale from 0 to 10. Specifically, participants were asked, “Do you support or oppose refugee resettlement in [your local community/the United States]? Suppose that people who feel that absolutely no refugees should be placed in [your local community/the United States] are at one end of a scale, at point 0; and others who feel that as many refugees as possible should be placed in [your local community/the United States] are at the other end, at point 10. Where would you place YOURSELF on this scale?” If people did not demonstrate attitudes consistent with NIMBYism (that is, if people expressed, on average, similar willingness to accept refugees across spatial contexts), we would not expect to observe a substantial difference between these two questions.

Not-in-my-back-yard syndrome

We first assess general support for refugee resettlement within our sample by calculating the average level of support for both forms of resettlement among participants in the control group (that is, under no exposure to media frames). Pooling the national and local resettlement measures, we find that the mean support for resettlement on the 11-point scale is 5.29 (SE = 0.05). To identify which types of participants are supportive of each form of resettlement, we estimate two ordinary least squares (OLS) regression models (table S1). Several variables significantly predict support for resettlement. Female participants are more supportive of each form of resettlement than male participants ($b = 0.46$, SE = 0.21 for local resettlement; $b = 0.43$, SE = 0.21 for national resettlement). More educated participants are also more supportive than less educated participants ($b = 0.65$, SE = 0.23 for local resettlement; $b = 0.62$, SE = 0.22 for national resettlement). There are also clear partisan differences in support. Compared to independents, Democrats are more supportive of refugee resettlement ($b = 2.40$, SE = 0.24 for local resettlement; $b = 2.30$, SE = 0.23 for

national resettlement) whereas Republicans are less supportive ($b = -2.11$, SE = 0.30 for local resettlement; $b = -2.27$, SE = 0.28 for national resettlement).

However, more relevant to our analysis is the extent to which support for resettlement varies by spatial context. Consistent with our expectation, support for local resettlement is lower than support for national resettlement (difference, -0.28 ; $t = -11.33$). This finding indicates that participants are consistently less willing to accept refugees in their local communities compared to elsewhere in the country. Although the estimate is statistically significant, the difference in support may initially appear small. However, an effect of this size is understandable given the hypothetical nature of our experiment and the possibility of social desirability bias.

One might expect NIMBYism to be more prevalent among particular sociodemographic profiles. Yet our analysis suggests that this collective action problem is nearly universal across demographic, political, and geographic subsamples in our data. As shown in Table 1, the extent

Table 1. Reduced level of support for local refugee resettlement is associated with neither individual-level variables nor location-specific variables. Only respondents in the control group in our experiment are included. Cell entries represent OLS coefficients, with SEs in parentheses. The dependent variable is the difference between the level of support for local resettlement and the level of support for national resettlement. The level of support ranges from 0 (“absolutely no refugees”) to 10 (“as many refugees as possible”). The omitted reference group for partisanship is independent.

	Model		
	1	2	3
Individual-specific variables			
Above median age	0.068 (0.098)		0.108 (0.104)
Female	0.027 (0.096)		0.043 (0.101)
Bachelor’s degree or higher	0.026 (0.104)		0.031 (0.111)
Non-Hispanic white	0.025 (0.117)		0.010 (0.125)
Above median income	0.077 (0.104)		0.032 (0.109)
Employed	-0.145 (0.122)		-0.105 (0.127)
Democrat	0.099 (0.108)		0.088 (0.115)
Republican	0.152 (0.133)		0.154 (0.139)
Location-specific variables			
Refugee-dense county		0.053 (0.105)	0.082 (0.108)
Census population		0.003 (0.003)	0.003 (0.003)
Population density		-0.006 (0.008)	-0.005 (0.008)
Unemployment rate		0.015 (0.013)	0.015 (0.014)
Constant	-0.432 (0.169)	-0.562 (0.141)	-0.689 (0.234)
Number of observations	740	709	678

Downloaded from <http://advances.sciencemag.org/> on November 22, 2017

of NIMBYism is not associated with the demographic or political attributes of participants. Similarly, an examination of location-specific variables suggests that NIMBYism is not strongly correlated with local population size, population density, unemployment rates, or whether a county has a high density of previously resettled refugees. Moreover, a joint test indicates that a fully saturated model including all these covariates has no predictive power (F statistic = 0.59, P = 0.85). Although we cannot isolate the specific mechanism driving reduced support for local resettlement, the tendency toward NIMBYism does not appear to be rooted in either particular backgrounds of citizens or pragmatic concerns for local capacity.

Perceived threats

We next turn to the effects of media frames on attitudes toward resettlement. Before estimating framing effects, we verified the success of our treatments with manipulation checks that examined perceptions of refugee threat across experimental conditions (table S2). Compared to participants in the control group, participants who were presented with the threatening frames were more likely to report that refugees pose a threat to the United States. By contrast, participants who were presented with the counterthreatening frames were less likely to consider refugees a threat compared to the control group. Both effects are statistically significant at conventional levels (see additional manipulation checks in table S2). These results suggest that our treatments successfully manipulated the perceived threat posed by refugees. But do these frames influence opinions toward refugee resettlement?

The experimental results suggest that threatening media frames play a key role in shaping opposition to resettlement (table S3). As seen in the top panel of Fig. 1, threatening frames reduce support for both national and local resettlement. Relative to the control group, participants who were exposed to the threatening frame were 0.55 points (SE = 0.17) less supportive of national resettlement and 0.43 points (SE = 0.17) less supportive of local resettlement. The effects of the counterthreatening frames are more modest: Compared to the con-

trol group, participants exposed to the counterthreatening frames were 0.18 points (SE = 0.17) more supportive of national resettlement and 0.25 points (SE = 0.17) more supportive of local resettlement. Although these effects are in the expected direction, both are insignificant at conventional levels.

We also observe individual-level heterogeneity in responsiveness to media frames. The bottom panel of Fig. 1 displays treatment effect estimates among participants in high-refugee density counties and those in low-refugee density counties (also see tables S4 and S5). Our results indicate that spatial context may influence responsiveness to media frames. As shown in the bottom panel of Fig. 1, although threatening frames reduce support for resettlement among participants in low-refugee density counties (red dots), these frames have no detectable effects on the attitudes of participants in high-refugee density communities (blue dots). In tables S4 and S5, we show that this effect is particularly pronounced among Republicans. When Republicans in low-refugee density counties are exposed to the counterthreatening frame, their support for refugee resettlement decreases (that is, it moves in the opposite direction of the frame). By contrast, Republicans in high-refugee density counties increase their support for resettlement after reading the counterthreatening frame. These findings are consistent with recent research, which suggests that proximity to refugees moderates negative attitudes (40, 41). However, given that respondent location is not randomly assigned, the moderating effect should be viewed as suggestive and should be examined further in future research.

DISCUSSION

This study identifies two factors that undermine public support for the refugee resettlement program. First, our results highlight a collective action problem: Participants are consistently more supportive of national refugee resettlement than resettlement in their local communities. NIMBYism is apparent among participants of different political and demographic backgrounds and geographic contexts. This collective

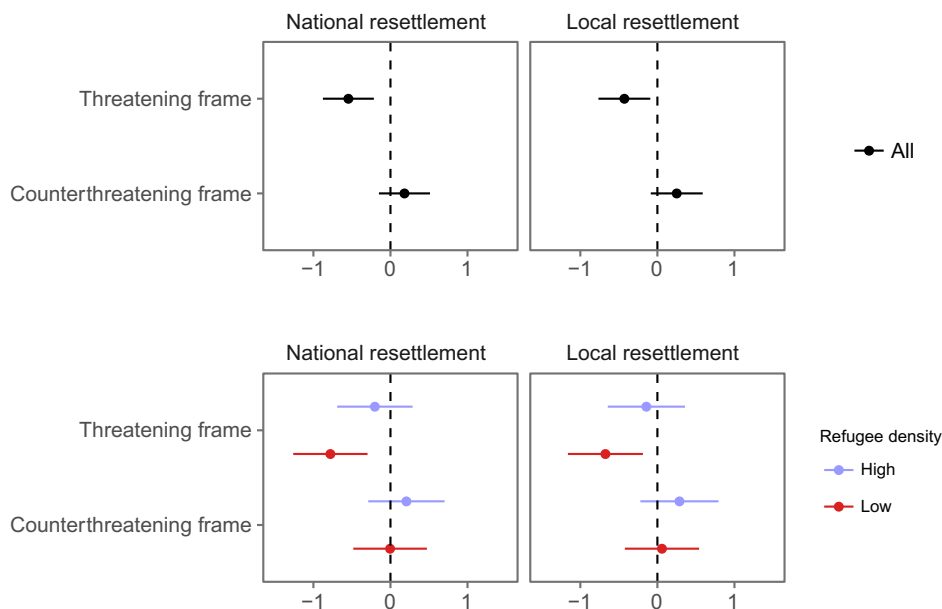


Fig. 1. Framing effects on support for national and local refugee settlement. Estimated effects are based on OLS regression. The dependent variable is support for national or local refugee resettlement, ranging from 0 (“absolutely no refugees”) to 10 (“as many refugees as possible”). The control group (no media frames) serves as the baseline. **(Top)** All observations. **(Bottom)** Subgroup treatment effects. Horizontal bars represent 95% confidence intervals.

action problem is likely to become more pronounced if the Trump Administration continues to emphasize the potential costs of refugee resettlement in Americans' local communities. Although current law provides states and municipalities with limited recourse to veto refugee assignment, President Trump's recent executive order instructs the Department of Homeland Security to consider implementing a system in which localities may opt out of resettlement (Section 5g). If such a system is established, our results suggest that the resettlement program will likely encounter profound challenges in distributing refugees across the country.

Second, we find that media frames depicting refugees as threatening to national security, which are increasingly common in Western democracies (42), can significantly reduce support for resettlement. Moreover, frames that attempt to rebut the proposed security threat with counterarguments did little to boost support for the resettlement program. This finding is consistent with past framing experiments, which reported large effects of negative frames about immigrants and weaker effects of positive frames (43). More broadly, this asymmetry is consistent with the extensive literature on negativity bias in information processing (44) and attempts to rebut previously encountered claims (39, 45). In this light, our results provide clear evidence that pro-resettlement advocates may be wise to focus their appeals on other considerations (for example, humanitarianism) rather than directly attempting to refute security arguments.

Finally, our results suggest that local proximity to previously settled refugees might mitigate the effects of threatening frames. Although this finding does not imply that proximity necessarily engenders support for resettlement, as predicted by contact theory, it does suggest that citizens living in refugee-dense areas may be less likely to react to negative media coverage of refugees. Given that the U.S. refugee program has successfully placed individuals in American communities since 1980, citizens in affected locales appear to recognize that alleged security threats may be overstated.

MATERIALS AND METHODS

Experimental design

We fielded our survey experiment from 7 February to 10 February 2017. Participants were recruited from Amazon.com's Mechanical Turk (MTurk), an online labor market that is increasingly being used in social science research (46). Although MTurk samples are not nationally representative, scholars have successfully replicated canonical experimental findings, including framing effects, using MTurk samples (47–49). MTurk is especially attractive for our study because it allowed us to rapidly field the experiment while the executive order was being widely debated. Moreover, our sample contained variance on a theoretically relevant moderating variable (that is, high refugee density versus low refugee density), increasing our confidence in the generalizability of treatment effect estimates (50). Table S6 presents descriptive statistics for our sample.

Data collection occurred in two waves. First, on 1 February 2017, we recruited a sample of 2994 respondents in the United States to complete a preliminary survey containing standard demographic, political, and geographic questions (see the Supplementary Materials for details). Using self-reported zip codes, we coded whether individuals lived in a county with a large refugee population, drawing on data from the ORR (8). Next, we recontacted participants 6 days after the initial wave to invite them to participate in a short follow-up that contained the experiment. Participants were paid US\$1.25 for com-

pleting the preliminary survey and US\$0.40 for the follow-up. In total, 2295 participants took part in the experiment.

At the beginning of the experiment, all participants read the following information: "On Friday, January 27, 2017, President Donald Trump signed an executive order which temporarily banned citizens of Iraq, Iran, Libya, Somalia, Sudan, Syria, and Yemen from entering the U.S.; suspended refugee admissions for 120 days; and banned Syrian refugees from entering the U.S. indefinitely. [Paragraph break] Please carefully read the article on the next page, which was published online on Sunday, January 29, 2017, and answer some questions on the following pages."

Participants in one of the two treatment groups were then presented with a media frame: the threatening frame or the counterthreatening frame (see the Supplementary Materials for details). Both treatments were excerpted from news articles that were published online on 29 January 2017. The threatening frame was from an article that appeared in *The Washington Times* (<http://go.shr.lc/2jkExEx>). The counterthreatening frame was from an article that appeared on CNN's website (<http://cnn.it/2kgNJHh>).

After reading their assigned treatment, participants were asked two questions about national and local resettlement (order randomized). See figs. S1 and S2 for question wordings.

Statistical analysis

Table 1 is based on an OLS regression using all study participants. The dependent variable was the difference between the level of support for local resettlement (0 to 10) and the level of support for national resettlement (0 to 10). All individual-level independent variables were binary (see the Supplementary Materials for question wordings).

Figure 1 is based on a set of OLS regressions. In all models, the dependent variable was the level of support for either local or national resettlement (0 to 10). The two treatment variables were binary indicators for whether the threatening frame or the counterthreatening frame was assigned. The no-frame condition served as the baseline. The top figures were based on regressions using all study participants. The bottom figures were based on regressions using one of the two subsets of study participants: those who are living in high-refugee density counties (blue) and those who are living in low-refugee density counties (red). Zip code-level data (including measures of population, population density, and unemployment) were from The Splitwise Blog (51). Data on refugee density were from the ORR (8).

We verified the main results reported in Table 1 and Fig. 1 by excluding inattentive participants in the bottom 10th percentile of total survey completion time (see table S7 and fig. S3). Our results remained substantively the same after excluding inattentive participants.

Preregistration information

Our hypotheses were preregistered before we accessed the outcome data (Experiments in Governance and Politics registration ID 20170207AA). Our preregistration plan indicated that we will report between-subject NIMBYism estimates in the main text and report within-subject estimates in an appendix. Although treatment effect estimates were similar using both approaches, we chose to report within-subject estimates in the main text because they offer two key advantages. First, within-subject comparisons reduce measurement error by accounting for individual-level heterogeneity in how the response scale is interpreted. Second, this approach estimates treatment effects with greater precision than the between-subject approach because the effective sample size is doubled (that is, because we

can use participants' answers to both questions). One potential concern with within-subject comparisons is question order effects. Although question order was randomized, we verified that the results reported above were not affected by the order. When we controlled the order in which participants answered the questions, the estimated media framing effects remained almost exactly the same as those reported above. This was unsurprising because both media frames and the order of resettlement support measures were randomly assigned.

SUPPLEMENTARY MATERIALS

Supplementary material for this article is available at <http://advances.sciencemag.org/cgi/content/full/3/9/e1700812/DC1>

Questions in preliminary survey

table S1. Support for local and national resettlement.

table S2. Manipulation checks.

table S3. Framing effects.

table S4. Heterogeneous effects of media frames (local resettlement).

table S5. Heterogeneous effects of media frames (national resettlement).

table S6. Sample characteristics.

table S7. Attentive subsample (replication of Table 1).

fig. S1. Measurement of outcome variables: Asking a question about support for local resettlement first.

fig. S2. Measurement of outcome variables: Asking a question about support for national resettlement first.

fig. S3. Attentive subsample (replication of Fig. 1).

REFERENCES AND NOTES

1. K. Bansak, J. Hainmueller, D. Hangartner, How economic, humanitarian, and religious concerns shape European attitudes toward asylum seekers. *Sci. Adv.* **3**, 217–222 (2016).
2. T. J. Hatton, Refugees, asylum seekers, and policy in OECD countries. *Am. Econ. Rev.* **106**, 441–445 (2016).
3. F. H. McKay, S. L. Thomas, S. Kneebone, 'It would be okay if they came through the proper channels': Community perceptions and attitudes toward asylum seekers in Australia. *J. Refug. Stud.* **25**, 113–133 (2012).
4. L. Hartley, A. Pedersen, Asylum seekers: How attributions and emotion affect Australians' views on mandatory detention of "the other". *Aust. J. Psychol.* **59**, 119–131 (2007).
5. W. R. Louis, J. M. Duck, D. J. Terry, R. A. Schuller, R. N. Lalonde, Why do citizens want to keep refugees out? Threats, fairness and hostile norms in the treatment of asylum seekers. *Eur. J. Soc. Psychol.* **37**, 53–73 (2007).
6. A. Pedersen, J. Attwell, D. Heveli, Prediction of negative attitudes toward Australian asylum seekers: False beliefs, nationalism, and self-esteem. *Aust. J. Psychol.* **57**, 148–160 (2005).
7. R. Schweitzer, S. Perkoulidis, S. Krome, C. Ludlow, M. Ryan, Attitudes towards refugees: The dark side of prejudice in Australia. *Aust. J. Psychol.* **57**, 170–179 (2005).
8. Office of Refugee Resettlement (ORR), "Annual Report to Congress" (2015); www.acf.hhs.gov/sites/default/files/orr/arc_15_final_508.pdf.
9. G. M. Maney, M. Abraham, Whose backyard? Boundary making in NIMBY opposition to immigrant services. *Soc. Justice* **35**, 66–82 (2008–2009).
10. B. C. Davis, V. A. Bali, Examining the role of race, NIMBY, and local politics in FEMA trailer park placement. *Soc. Sci. Quart.* **89**, 1175–1194 (2008).
11. R. D. Wilton, Colouring special needs: Locating whiteness in NIMBY conflicts. *Soc. Cult. Geogr.* **3**, 303–321 (2002).
12. L. Pulido, Rethinking environmental racism: White privilege and urban development in Southern California. *Ann. Assoc. Am. Geogr.* **90**, 12–40 (2000).
13. S. L. Cutter, Race, class, and environmental justice. *Prog. Hum. Geogr.* **19**, 111–122 (1995).
14. P. Hubbard, Accommodating otherness: Anti-asylum centre protest and the maintenance of white privilege. *Trans. Inst. Br. Geogr.* **30**, 52–65 (2005).
15. M. Wolsink, Invalid theory impedes our understanding: A critique on the persistence of the language of NIMBY. *Trans. Inst. Br. Geogr.* **31**, 85–91 (2006).
16. P. Hubbard, NIMBY by another name? A reply to Wolsink. *Trans. Inst. Br. Geogr.* **31**, 92–94 (2006).
17. R. Bleiker, D. Campbell, E. Hutchison, X. Nicholson, The visual dehumanisation of refugees. *Aust. J. Pol. Sci.* **48**, 398–416 (2013).
18. V. M. Esses, S. Medianu, A. S. Lawson, Uncertainty, threat, and the role of the media in promoting the dehumanization of immigrants and refugees. *J. Soc. Issues* **69**, 518–536 (2013).
19. M. J. Breen, E. Devereux, A. Haynes, Fear, framing, and foreigners: The othering of immigrants in the Irish print media. *Int. J. Crit. Psychol.* **16**, 100–121 (2006).
20. R. Kaye, Redefining the refugee: The UK media portrayal of asylum seekers, in *The New Migration in Europe: Social Constructions and Social Realities*, K. Koser, H. Lutz, Eds. (Palgrave, 1998), chap. 9.
21. J. Citrin, J. Sides, Immigration and the imagined community in Europe and the United States. *Polit. Stud.* **56**, 33–56 (2008).
22. J. N. Druckman, E. Peterson, R. Slothuus, How elite partisan polarization affects public opinion formation. *Am. Polit. Sci. Rev.* **107**, 57–79 (2013).
23. S. A. Fryberg, N. M. Stephens, R. Covarrubias, H. R. Markus, E. D. Carter, G. A. Laiduc, A. J. Salido, How the media frames the immigration debate: The critical role of location and politics. *Anal. Soc. Issues Public Policy* **12**, 96–112 (2012).
24. D. J. Hopkins, Politicized places: Explaining where and when immigrants provoke local opposition. *Am. Polit. Sci. Rev.* **104**, 40–60 (2010).
25. B. J. Newman, Acculturating contexts and Anglo opposition to immigration in the United States. *Am. J. Polit. Sci.* **57**, 374–390 (2013).
26. N. Finney, V. Robinson, Local press, dispersal and community in the construction of asylum debates. *Soc. Cult. Geogr.* **9**, 397–413 (2008).
27. N. Spicer, Places of exclusion and inclusion: Asylum-seeker and refugee experiences of neighbourhoods in the UK. *J. Ethn. Migr. Stud.* **34**, 491–510 (2008).
28. M. Lubbers, M. Coenders, P. Scheepers, Objections to asylum seeker centres: Individual and contextual determinants of resistance to small and large centres in the Netherlands. *Eur. Sociol. Rev.* **22**, 243–257 (2006).
29. S. Ghatak, M. I. Pop Silaghi, V. Daly, Trade and migration flows between some CEE countries and the UK. *J. Int. Trade Econ. Dev.* **18**, 61–78 (2009).
30. B. J. Newman, Unfamiliar others: Contact with unassimilated immigrants and public support for restrictive immigration policy. *Int. J. Public Opin. Res.* **27**, 197–219 (2015).
31. L. Quillian, Prejudice as a response to perceived group threat: Population composition and anti-immigrant and racial prejudice in Europe. *Am. Sociol. Rev.* **60**, 586–611 (1995).
32. R. D. Enos, Causal effect of intergroup contact on exclusionary attitudes. *Proc. Natl. Acad. Sci. U.S.A.* **111**, 3699–3704 (2014).
33. S. K. Jolly, G. M. DiGusto, Xenophobia and immigrant contact: French public attitudes toward immigration. *Soc. Sci. J.* **51**, 464–473 (2014).
34. L. M. McLaren, Anti-immigrant prejudice in Europe: Contact, threat perception, and preferences for the exclusion of migrants. *Soc. Forces* **81**, 909–936 (2003).
35. D. Broockman, J. Kalla, Durably reducing transphobia: A field experiment on door-to-door canvassing. *Science* **352**, 220–224 (2016).
36. H. Blumer, Race prejudice as a sense of group position. *Pac. Sociol. Rev.* **1**, 3–7 (1958).
37. G. W. Allport, *The Nature of Prejudice* (Basic Books, 1954).
38. R. M. Williams Jr., *The Reduction of Intergroup Tensions: A Survey of Research on Problems of Ethnic, Racial, and Religious Group Relations* (Social Science Research Council, 1947).
39. D. Chong, J. N. Druckman, Counterframing effects. *J. Polit.* **75**, 1–16 (2013).
40. A. Steinmayr, Exposure to refugees and voting for the far-right: (Unexpected) results from Austria. Institute for the Study of Labor (2016); <http://ftp.iza.org/dp9790.pdf> [accessed 19 August 2017].
41. J. Smith, Towards consensus? Centre-right parties and immigration policy in the UK and Ireland. *J. Eur. Public Policy* **15**, 415–431 (2008).
42. R. Vliegthart, C. Roggeband, Framing immigration and integration: Relationships between press and parliament in the Netherlands. *Int. Commun. Gazette* **69**, 295–319 (2007).
43. T. Brader, N. A. Valentino, E. Suhay, What triggers public opposition to immigration? Anxiety, group cues, and immigration threat. *Am. J. Polit. Sci.* **52**, 959–978 (2008).
44. D. Kahneman, A. Tversky, Choices, values, and frames. *Am. Psychol.* **39**, 341–350 (1983).
45. D. J. Flynn, B. Nyhan, J. Reifler, The nature and origins of misperceptions: Understanding false and unsubstantiated beliefs about politics. *Adv. Polit. Psychol.* **38**, 127–150 (2017).
46. A. J. Berinsky, G. A. Huber, G. S. Lenz, Evaluating online labor markets for experimental research: Amazon.com's Mechanical Turk. *Polit. Anal.* **20**, 351–368 (2012).
47. K. J. Mullinix, T. J. Leeper, J. N. Druckman, J. Freese, The generalizability of survey experiments. *J. Exp. Polit. Sci.* **2**, 109–138 (2015).
48. G. Paolacci, J. Chandler, P. G. Ipeirotis, Running experiments on Amazon Mechanical Turk. *Judgm. Decis. Mak.* **5**, 411–419 (2011).
49. J. Weinberg, J. Freese, D. McElhattan, Comparing data characteristics and results of an online factorial survey between a population-based and a crowdsourced sample. *Sociol. Sci.* **1**, 292–310 (2014).
50. J. N. Druckman, C. Kam, Students as experimental participants: A defense of the 'narrow data base,' in *Cambridge Handbook of Experimental Political Science*, J. N. Druckman, D. P. Green, J. H. Kuklinski, A. Lupia, Eds. (Cambridge Univ. Press, 2011), chap. 4.
51. The Splitwise Blog, Free US Population Density and Unemployment Rate by Zip Code (2017); <https://blog.splitwise.com/2014/01/06/free-us-population-density-and-unemployment-rate-by-zip-code/> [accessed 19 August 2017].

Acknowledgments: We thank A. Agadjanian, J. Carey, K. Clayton, J. Druckman, J. Friedman, B. Goldsmith, B. Greenhill, M. Herron, K. Hinckley, R. Kage, H. Katsumata, D. Lawrence, K. Mullinix, Y. Ono, D. Smith, B. Nyhan, Y. Velez, S. Westwood, A. Woodruff, T. Yamamoto, D. Zhang, and anonymous reviewers for helpful comments. The Committee for the Protection of Human Subjects at Dartmouth College reviewed this project (STUDY00030078 and MOD0004982).

Funding: The authors did not receive any specific funding or research grants in support of this work. **Author contributions:** J.F., D.J.F., and Y.H. designed the experiment, conducted the statistical analyses, and wrote the manuscript. **Competing interests:** The authors declare that they have no competing interests. **Data and materials availability:** The original survey data in Comma Separated Value format and a complete set of computer language (specifically R) scripts used to reproduce all results will be made publicly available at the Yusaku Horiuchi Dataverse (<https://dataverse.harvard.edu/dataverse/horiuchi>) as soon as the manuscript is

published online. All data needed to evaluate the conclusions in the paper are present in the paper and/or the Supplementary Materials. Additional data related to this paper may be requested from the authors.

Submitted 13 March 2017

Accepted 8 August 2017

Published 6 September 2017

10.1126/sciadv.1700812

Citation: J. Ferwerda, D.J. Flynn, Y. Horiuchi, Explaining opposition to refugee resettlement: The role of NIMBYism and perceived threats. *Sci. Adv.* **3**, e1700812 (2017).

Explaining opposition to refugee resettlement: The role of NIMBYism and perceived threats

Jeremy Ferwerda, D.J. Flynn and Yusaku Horiuchi

Sci Adv 3 (9), e1700812.
DOI: 10.1126/sciadv.1700812

ARTICLE TOOLS

<http://advances.sciencemag.org/content/3/9/e1700812>

SUPPLEMENTARY MATERIALS

<http://advances.sciencemag.org/content/suppl/2017/09/01/3.9.e1700812.DC1>

REFERENCES

This article cites 44 articles, 2 of which you can access for free
<http://advances.sciencemag.org/content/3/9/e1700812#BIBL>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science Advances (ISSN 2375-2548) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. 2017 © The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works. The title *Science Advances* is a registered trademark of AAAS.