Does International Terrorism affect Public Attitudes toward Refugees?

Evidence from a Large-scale Natural Experiment

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Do international terrorist attacks affect the public's attitudes toward refugees? Does terrorism increase public pressure on legislators to restrict refugee policy? Are these effects long- or short-lived? To answer these questions, this article presents results from a large-scale natural experiment to investigate the effects of the 2015 Islamic State terrorist attacks in Paris on attitudes toward Syrian refugees in Canada—a major recipient of refugees. The results demonstrate that the attacks increased (1) anxiety over refugee resettlement; (2) perceptions of refugees as a security and cultural threat; and (3) opposition to resettlement. Furthermore, the attacks led to increased mobilization among opponents of resettlement. Using large independent survey waves fielded each day across a three-week period, however, we show that each of these effects was decidedly short-lived. The findings are highly relevant to our understanding of public reactions to major terrorist attacks, and the responses of political entrepreneurs in their aftermath.

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Paris changes everything.

— Markus Söder (Bavarian Finance Minister)

Introduction

On November 13, 2015, nine heavily armed gunmen and suicide bombers from the terrorist organization Islamic State perpetrated a series of attacks in the heart of Paris, killing 130 civilians and injuring more than 350. The attacks were the largest in the West in more than a decade and they intensified concerns among world leaders and the public about the threat of international terrorism. They also coincided, however, with the Syrian refugee crisis, the largest refugee crisis since the end of the Second World War. Perpetrated by a Syria-based terrorist organization, the Paris attacks would tightly intertwine two of the most salient issues in modern international politics: the fight against terrorism and the large-scale resettlement of refugees.

In the aftermath of the attacks, politicians across Europe and North America sought to mobilize public opposition to refugee resettlement by invoking the perceived threat posed by Syrian refugees to national security. Within a week of the attacks, 30 US governors had voiced opposition to resettlement in their states and the US House of Representatives had passed a bill to suspend the section of the refugee program concerning Syrian and Iraqi refugees. In Canada, Prime Minister Trudeau postponed a plan to admit 25,000 Syrian refugees. In Germany, pressure mounted on Chancellor Merkel to end her government's open-arms refugee policy. Perceptions of the effects of the attacks on attitudes and policy were neatly summarized by Bavaria's Finance Minister: "Paris," he said, "changes everything" (Aust, Malzahn, and Vitzhum, 2015).

The Paris attacks and their political aftermath highlight a series of important questions concerning refugees and the effects of large-scale terrorist attacks on attitudes, emotions, and behaviors. What effects does terrorism have on public attitudes and emotions toward refugees from countries associated with terrorism? Does terrorism mobilize public pressure on political representatives to restrict refugee policy? Are these effects long- or short-lived?

To answer these questions, this article uses a natural experiment to examine the effects of the Paris terrorist attacks on attitudes and emotions toward Syrian refugees. We use data containing an extensive set of questions concerning Syrian refugees that were asked in an exceptionally large-scale national survey (n = 18,634) fielded in Canada—a major recipient of Syrian refugees—less than 48 hours before the Paris attacks, and subsequently fielded to large samples of respondents each day for three weeks thereafter. These data present the first opportunity to estimate, with substantial precision, the effects of major terrorist attacks on attitudes and emotions toward refugees; their effect on issue-based political mobilization; and the duration of these effects.

This article makes four major contributions to the literature. First, by examining the effects of terrorism on public attitudes and emotions toward refugees, we broadly investigate an issue that remains understudied despite its substantial international importance. While there is a growing body of research that investigates the causal effects of real-world terrorist attacks, its focus is primarily on attitudes and behaviors concerning voting and partisanship, and on terrorism's effects on populations in the vicinity of attacks (e.g. Bonanno and Jost, 2006; Bali, 2007; Berrebi and Klor, 2008; Gould and Klor, 2010; Kibris, 2010; Montalvo, 2011; Hersh, 2013; Getmansky and Zeitzoff, 2014).[1] Large-scale terrorist attacks, however, are frequently aimed at international audiences, with wide-ranging consequences for international policy. This article substantially extends past work by examining the effects of terrorism on attitudes toward refugees, and on publics that are not its direct targets.

Second, although an important body of research has examined the link between perceptions of the threat of terrorism and a wide range of attitudes and emotions using cross-sectional surveys and survey experiments (e.g. Davis and Silver, 2004; Huddy et al., 2005; Merolla and Zechmeister, 2009*b*; Hetherington and Suhay, 2011; Malhotra and Popp, 2012; Renshon, Lee, and Tingley, 2015), it remains an open question whether the magnitude of the relationships demonstrated in these studies carries over to real-world terrorist events. We provide an examination of the causal effects of terrorism on public opinion concerning refugees by using a natural experiment

[1] One notable recent exception leverages variation in terrorism across time to examine the effects of terrorism on political tolerance in Israel (Peffley, Hutchison, and Shamir, 2016).

to investigate these relationships in the context of large-scale terrorist attacks.

Third, although research on terrorism has investigated its effect on voter turnout (e.g. Hersh, 2013; Robbins, Hunter, and Murray, 2013; Getmansky and Zeitzoff, 2014), other more immediate forms of mobilization have received less attention. To fill this gap, we examine the effect of the Paris attacks on a quasi-behavioural measure of mobilization: the public's willingness to contact political representatives regarding refugees and resettlement. The results suggest that growth in vocal opposition to resettlement in the aftermath of the attacks was more likely due to changes in mobilization than it was due to changes in attitudes: although the effect of the attacks on opposition to refugee resettlement was modest, their effect on mobilization strongly favored resettlement's political opponents.

Lastly, the data we use provide a remarkably clear illustration of the short-term dynamics of public opinion in the aftermath of large-scale terrorist attacks. Using large independent daily survey waves collected for three weeks after the Paris attacks, we show that although the attacks' effects were immediate, they were decidedly short-lived, with a clear pattern of decay across multiple outcomes. These results have important implications for our understanding of the size of the window of opportunity open to political entrepreneurs in the aftermath of terrorism and for explaining the rapid birth and death of efforts to enact policy after large-scale acts of violence.

The Syrian Refugee Crisis and the Paris Terrorist Attacks

By the end of 2015, more than 4 million refugees had fled the civil war in Syria (United Nations, 2015). The resulting refugee crisis led to serious debate about the issue in Western democracies, particularly in Europe. The intensity of the European debate, however, at first contrasted starkly with the limited attention given to the issue in North America. This changed in September 2015 when a photo was widely published in the international media of Alan Kurdi, a Syrian child who had drowned in an effort to seek refuge with his family in Europe and whose body was pictured washed ashore on a beach in Turkey. Calls came from across Europe and North America for increased support for refugees. In the US, where 2,500 refugees had been admitted since the

beginning of the Syrian civil war, the Obama administration proposed accepting 10,000 more Syrian refugees by the end of 2015. In Canada, Alan Kurdi's death occurred during a federal election campaign. The Liberal Party, which would eventually form government, committed to accept 25,000 Syrian refugees by the end of 2015.

Two months later, the Paris attacks appeared to drastically change the international political landscape. In Europe, anti-immigration parties invoked the attacks to argue for restrictive refugee policies. In the US, House Speaker Paul Ryan called for a "pause" in the US's plan to accept more refugees. "Our nation has always been welcoming," he remarked, "but we cannot let terrorists take advantage of our compassion" (Werner, 2015). In Canada, provincial premier Brad Wall became the voice of opposition to resettlement. Wall, who two months earlier had expressed willingness to increase his initial pledge to resettle Syrian refugees, called for plans to admit 25,000 more refugees to be postponed (CBC News, 2015). The reactions of politicians and commentators suggested that concerns about national security had become the driver of policy positions on refugee resettlement. The attacks in Paris, it appeared, had led political leaders and the public to replace sympathy for Syrian refugees with heightened fears over national security.

Terrorism, Public Opinion, and Attitudes toward Refugees

The effectiveness of international terrorism often rests in large part on the psychological, behavioral, and attitudinal effects of violence on audiences well beyond its immediate victims and targets (Crenshaw, 1986). Research that aims to estimate the causal effects of real-world terrorist attacks on public opinion, however, has tended to focus on domestic audiences and outcomes tied to partisanship and voting behavior (e.g. Bonanno and Jost, 2006; Bali, 2007; Berrebi and Klor, 2008; Kibris, 2010; Montalvo, 2011; Hersh, 2013; Getmansky and Zeitzoff, 2014).[2] Research using cross-sectional survey data and lab and survey experiments, by contrast, has examined a wider array of outcomes (e.g. Huddy et al., 2005; Merolla and Zechmeister, 2009*a*; Malhotra and

[2]Important exceptions include the work of Gould and Klor (2010), who investigate the effects of terrorism on attitudes toward concessions to Palestinians in Israel, and Peffley, Hutchison, and Shamir (2016) who investigate its effects on political tolerance.

Popp, 2012; Brooks and Manza, 2013). Data used in these studies, however, have well-known tradeoffs. On the one hand, cross-sectional research typically seeks to explain differences in attitudes and emotions related to perceptions of threat rather than to estimate the effects of terrorism itself. On the other hand, although lab and survey experiments can provide clean causal estimates, the degree to which these results approximate those from real-world acts of terrorism is generally unknown.

Overcoming these drawbacks is nevertheless difficult due to limitations in the number of cases and data available for study. Large-scale terrorist attacks, in particular, are infrequent and scholarship has generally concentrated on two important cases of terrorism: the 9/11 attacks and the ongoing Israel-Palestine conflict.[3] A small number of studies has, however, advanced our understanding of the effects of terrorism on international public opinion. Two previous studies, for example, investigate the effects of terrorist attacks that occurred during the fielding of the European Social Survey. In one, Finseraas and Listhaug (2013) find that the 2008 Mumbai attacks increased the public's fears of terrorism.[4] In another, Legewie (2013) finds that the 2002 Bali attacks briefly affected the public's perceptions of immigrants, albeit in only three of nine countries surveyed. The findings in these studies are instructive, but research in this area is naturally limited by the questions available in each survey and their fielding schedules. First, the outcomes examined in these studies are typically broad, such as attitudes toward immigration in general or fears of terrorism overall. Although these are important outcomes in themselves, the most consequential effects of terrorism on public opinion are likely to be those specific to the groups that are perceived to be associated with the perpetrators, whether by national origin, religion, and/or ethnicity. Second, research in this area often relies on data from a small number of survey responses collected immediately before and after an attack. This data limitation typically results in responses being pooled across relatively wide time intervals, raising questions about whether events or longer-term dynamics other than terrorism affected

[3] There are some exceptions, such as Montalvo (2011) in Spain, and Kibris (2010) in Turkey.

[4] The authors do not find evidence, however, that the attacks affected attitudes toward restrictions on immigration or support for harsher interrogation techniques.

the outcomes examined. The sparsity of these data, moreover, can render investigation of public opinion dynamics and effect decay far more difficult.

To address the limitations described above, we use data from a large-scale survey that contains a broad set of questions concerning emotions and attitudes toward Syrian refugees and refugee resettlement, and was fielded in large independent daily waves immediately before and after the 2015 Islamic State terrorist attacks in Paris. These data present a unique opportunity to estimate the causal effects of terrorism on a timely set of emotional and attitudinal outcomes regarding refugees and to clearly demonstrate those effects' rates of decay. Below, we lay out our theoretical expectations, after which we turn to our research design and results.

Terrorism and emotions

Past research suggests that in the aftermath of terrorist attacks, two sets of emotions will drive attitudes toward refugees and preferences over refugee policy. On the one hand, terrorism may cause an increase in perceptions that terrorists will infiltrate refugee flows, raising anxiety over the possibility of future terrorist attacks close to home. On the other hand, increased perceptions of a link between refugees and terrorism may cause a decrease in sympathy for refugees themselves.

Anxiety. Observational and experimental studies that investigate emotional responses to terrorism often find evidence of a positive relationship between perceptions of the threat of terrorism and anxiety (Huddy et al., 2005; Huddy, Feldman, and Weber, 2007; Merolla and Zechmeister, 2009*b*). These findings are complemented by research in psychology that demonstrates that anxiety is frequently linked to situations that individuals perceive to be outside of their immediate control (Lerner and Keltner, 2001; Tiedens and Linton, 2001).

Anxiety, moreover, figures prominently in explanations of policy preferences. For example, higher levels of anxiety are associated with preferences for isolationist foreign policies (Huddy et al., 2005), restrictive immigration policies (Brader, Valentino, and Suhay, 2008; Renshon, Lee, and Tingley, 2015), and vote choice (Ladd and Lenz, 2008). There is not strong evidence, however,

that anxiety stemming from the threat of terrorism is associated either with support for restrictive immigration or harsh anti-terrorism policies (Huddy et al., 2005). Still, empirical investigation into these relationships has not been conducted in the context of real-world terrorist attacks. Indeed, it would be surprising if anxiety toward the presence of outgroups such as refugees were not affected by terrorism, or if anxiety were not a predictor of opposition to refugee resettlement. We hypothesize, therefore, that the Paris terrorist attacks caused an increase in the public's anxiety concerning Syrian refugee resettlement ($\mathbf{H}_1$).

Sympathy. The focus in the literature on the 'negative' determinants of attitudes toward outgroups, such as anxiety, has come at the relative neglect of 'positive' determinants, such as sympathy or affect. In one of the few studies to address such emotions, Newman et al. (2013) find that survey respondents with higher levels of empathy who are informed of the difficult conditions faced by prospective immigrants are less likely to favor restrictions on immigration. Furthermore, the reasons for immigration are shown to play a substantial role in the public's preferences over individual migration applications. Those seeking entrance for reasons of persecution, for example, are more likely to be selected for admittance than those seeking to improve their economic conditions (Hainmueller and Hopkins, 2015; Bansak, Hainmueller, and Hangartner, 2016).

One reason underlying the public's sympathy for refugees may be that refugees are generally perceived to face dire situations as a result of factors outside of their own control. Outgroups that are perceived to lack control over outcomes in their lives, for example, have been shown to elicit compassion (Weiner, 2006; Gill and Andreychik, 2007), whereas those who face hardships due to factors perceived to be of their own making, elicit hostility (e.g. Aarøe and Petersen, 2014; Harell, Soroka, and Iyengar, 2017). Terrorism may affect such perceptions, however, by implicating refugees as members of a culture or society perceived to be responsible for growing and exporting violence. In other words, rather than being perceived as victims of violence, terrorism may lead refugees who are indirectly linked to the perpetrators by national, religious, or ethnic association to be perceived, in part, as responsible for it. We hypothesize, therefore, that the Paris attacks

also caused a decrease in the public's sympathy for Syrian refugees overall ($\mathbf{H}_2$).

Terrorism and threat perceptions

Examination of public perceptions of the threat of terrorism is a central concern in the literature on terrorism and public opinion. Research in this area frequently finds that threat perceptions are related both to policy preferences and to intergroup attitudes. Higher perceptions of threat, for example, have been linked to support for restrictive immigration policies (Huddy et al., 2005); policies to curtail civil liberties (Davis and Silver, 2004; Malhotra and Popp, 2012); and pre-emptive war (Malhotra and Popp, 2012). Persistent threats of terrorism, moreover, have been shown to cause decreases in political tolerance (Peffley, Hutchison, and Shamir, 2016). We can expect that terrorism will affect public assessments of refugees similarly, changing perceptions of the security and cultural threats posed by refugees perceived to be associated with the perpetrators.

Security threat. In contrast to debates about immigration, which focus heavily on economic and cultural threats, the Syrian civil war and the expansion of the Islamic State pushed the issue of refugee resettlement to center heavily on concerns that Syrian refugees would pose a threat to national security. Even before the terrorist attacks in Paris, politicians and commentators expressed concerns that Syrian refugee resettlement would pose a security threat. For example, when a series of controversial vetting procedures for Syrian refugees were introduced by the Canadian government, the Prime Minister emphasized the need to keep the "country safe and secure" (Bailey, Galloway, and Leblanc, 2015), and similar concerns were expressed by politicians and commentators across the United States and Europe.

This "securitization" of migration is not a new phenomenon (Messina, 2014), and the claim that migration flows can pose a threat to national security is not without empirical support (Bove and Böhmelt, 2016). Yet, even if refugee flows were not empirically linked to terrorism, terrorism can still be expected to affect *perceptions* of refugees as members of a society, culture, and/or religion thought to bear responsibility, and arise from the inherent uncertainty in determining

which individuals within a group pose a security threat. This can lead terrorism to be perceived as a generalized group-based threat (Huddy and Feldman, 2011), where those responsible are defined in homogenizing terms, causing an increase in negative attitudes toward members of an outgroup, broadly defined (Rothgerber, 1997). We hypothesize, therefore, that the Paris attacks caused an increase in the public's perceptions of refugees as a threat to national security ($\mathbf{H}_4$).

Cultural threat. Prior to the attacks in Paris, opposition to Syrian refugee resettlement often centered on the threat posed by refugees to Western culture. The differences between Western culture and that of Syrian refugees, for example, were used before the attacks by opponents of resettlement to represent refugees as a threat to Western norms and practices (e.g. Traub, 2015). Perceptions of cultural threat have similarly been central to explanations in the literature regarding the public's attitudes toward immigrants (for a recent review, see Hainmueller and Hopkins, 2014).

With respect to terrorism, although its inherent and immediate threat is to physical security, the motivations that drive terrorism, and Islamic terrorism in particular, may also be perceived as an attack on the West's values and culture. The Paris attacks are thus likely to have exacerbated public perceptions of cultural differences with Syrian refugees. Threats to a group's identity or culture such as these—often called 'symbolic' threats—have been shown to increase the strength of ingroup identity; to raise the salience of ingroup-outgroup differences; and to generate outgroup hostility (Kinder and Sears, 1981; Tajfel, 1982; Brewer, 2001). We hypothesize, as a consequence, that the Paris attacks caused an increase in the public's perceptions of Syrian refugees as incompatible with Western society and a threat to national culture ($\mathbf{H}_3$).

Terrorism, Resettlement Policy, and Mobilization

Above, we hypothesized that the Paris attacks affected both the public's emotions toward Syrian refugees and its perceptions of the threat that refugees pose to national security and culture. The effects of the attacks on emotions and threat perceptions are also expected to have meaningful consequences for the public's preferences over policy. As we noted earlier

with respect to immigration, research has frequently demonstrated a link between emotions and threat perceptions, and preferences for restrictive immigration policies (e.g. Sniderman, Hagendoorn, and Prior, 2004; Brader, Valentino, and Suhay, 2008; Newman, Hartman, and Taber, 2012; Renshon, Lee, and Tingley, 2015). Terrorism can be expected to affect attitudes toward resettlement similarly. We hypothesize, therefore, that by affecting the public's emotions and threat perceptions concerning Syrian refugees, the attacks in Paris increased opposition to refugee resettlement ($\mathbf{H}_5$).

Yet, although policy preferences over resettlement and the emotions and perceptions that underlie them represent important outcomes in themselves, whether those preferences translate into pressure on legislators may be as consequential for policy as are the changes in preferences themselves. Indeed, there is good reason to expect that terrorism is politically mobilizing. Changes in emotions and threat perceptions, for instance, have both been demonstrated to increase political participation (e.g. Marcus, Neuman, and MacKuen, 2000; Cho, Gimpel, and Wu, 2006; Valentino et al., 2011). For example, increased perceptions of threat in the form of undesired policy changes have been shown to mobilize issue publics (Miller and Krosnick, 2004); increases in anxiety, to stimulate mobilization (Marcus, Neuman, and MacKuen, 2000; Brader, Valentino, and Suhay, 2008); and terrorist attacks, to increase voter registration and turnout (Cho, Gimpel, and Wu, 2006; Hersh, 2013; Robbins, Hunter, and Murray, 2013). With respect to political mobilization, therefore, we hypothesize that the terrorist attacks in Paris increased mobilization of the public around the issue of Syrian refugee resettlement ($\mathbf{H}_6$).

Lastly, there is also reason to expect that terrorism will result in higher mobilization among some groups more than others. Hersh (2013) finds, for example, that relatives and neighbors of victims of the 9/11 attacks were more likely than otherwise similar individuals to vote in future elections, and Cho, Gimpel, and Wu (2006) find that Arab-Americans mobilized through voter registration in response to the debate over and implementation of the Patriot Act. For the case examined herein, the Paris attacks provided opponents of resettlement with a political opportunity to highlight the potential risks of more liberal resettlement policy. The attacks,

in other words, provided opportunities for advocates on one side of the issue to argue for a preferred policy. But terrorism can also close off opportunities for others. For supporters of resettlement, the Paris attacks appeared to undermine, if indirectly, claims that Syrian refugees would pose no threat to national security. Our final hypothesis, therefore, is that the Paris attacks resulted in higher mobilization among opponents of resettlement than among supporters ($\mathbf{H}_7$).

Research Design

To test our hypotheses, we use a natural experiment that arose from the fortunate timing of an exceptionally large multi-wave post-election study (n = 18,634) that contained a survey module with an extensive set of questions specifically concerning Syrian refugees. The survey was conducted by the public opinion research firm Vox Pop Labs, and was sent to its complete national online panel of respondents in Canada in large independent daily survey waves, the setup of which we detail below.[5] The two primary questions regarding refugees concerned (1) support for Syrian refugee resettlement, and (2) willingness to contact a Member of Parliament about the issue.[6] The survey further captured 21 separate indicators to build indexes measuring feelings of sympathy for Syrian refugees; anxiety regarding Syrian refugee resettlement; and perceptions of Syrian refugees as a potential threat to national security, to culture, and to the economy. The first wave of the survey (n = 1,152) was fielded on November 11, 2015. The terrorist attacks in Paris occurred less than 48 hours later.

In light of the attacks, we modified the fielding schedule of subsequent survey waves. The second wave was fielded to a large sample of respondents (n = 2,448) less than 48 hours after the

[5]The survey was sent daily by e-mail invitation to all respondents in the research firm's national online panel, of whom 68,000 completed the survey and roughly one third received the questions concerning refugees. The survey was sent to all members of the panel, and thus respondents were not purposefully selected to match the socio-demographic characteristics of the national population. Estimates presented in the results section are therefore statistically adjusted through regression and survey weighting to match data from the national census (see Supplementary Material).

[6]The questions were embedded in a survey experiment module concerning refugees' religion and place of resettlement. For the purposes of this study, we do not examine these factors here. As a robustness check, we nevertheless test whether the effects of the Paris attacks are moderated by the experimental conditions. In none of the cases are there statistically significant differences across conditions in any outcome that we investigate.

attacks and, to examine effect duration, fielded in waves to new samples of respondents each day for 18 days thereafter. For each wave of the survey, respondents were drawn at random from the survey firm's online panel and therefore the day on which respondents received the survey was, by design, independent of the timing of the attacks. The attacks, in other words, are exogenous to the timing of survey receipt. As a consequence, respondents were, in effect, randomized to receive the survey immediately before (control), immediately after (treatment), or on one of the following days in the two weeks thereafter. We explain the details and potential complications of this natural experimental setup below.

The Paris attacks as natural experiment

Due to the timing of the survey and the exogeneity of the attacks with respect to survey fielding, we treat the Paris terrorist attacks as an as-if randomly assigned treatment to respondents in the survey waves collected within a short time interval (within 2 days) of the attacks. Each large daily survey wave collected thereafter is used to examine effect duration. We address two primary concerns regarding the credibility of this natural experimental setup below.

The first potential concern is that events or processes other than the Paris attacks may have contributed to differences in survey responses between the immediate pre- and post-attack periods. Theoretically, any differences in outcomes across this short fielding interval could be decomposed into the sum of the effect of the attacks and changes due to other causes. There is good reason, however, to expect that differences in attitudes and emotions due to other events or processes are implausible. First, the attacks occurred outside of any meaningful news cycle concerning either Syrian refugees or the Syrian conflict in general. Second, as noted variously throughout the literature, public opinion in such cases is slow-moving (e.g. Page and Shapiro, 1992; Zaller, 1992; Druckman and Leeper, 2012). As we demonstrate graphically in the results section, once the effects of the attacks return to their pre-attack baseline, there appears to be little if any change across time. We assume, therefore, that any differences between the immediate pre- and post-attacks periods result from the occurrence of the attacks, and that if this assumption were violated, any bias in our estimates would at most be slight.

The second and potentially larger threat to causal inference is differential survey non-response. Although each survey wave was fielded daily to randomly selected sets of respondents (i.e. the treatment is, by design, independent of the day of survey receipt) the composition of the control and treatment groups may differ due to differences in who responds in each survey wave. There is good reason, however, to reject this as a plausible explanation of any differences in observed outcomes. First, the survey invitation itself referred to the post-election survey as such and did not reference either the Paris attacks or refugees, minimizing the possibility of selection as a consequence of survey content. Second, we conduct a series of pre-treatment covariate balance checks. These checks demonstrate that the immediate pre- and post-attack samples are effectively equivalent in composition and none of a variety of pre-treatment covariates individually predict membership in the control or treatment groups. Furthermore, we also test whether these pre-treatment covariates *jointly* distinguish membership in the control and treatment group. They do not. A series of likelihood-ratio tests find no evidence that the full set of pre-treatment covariates jointly differentiate respondents in (1) the immediate pre- and post-attack samples ($p = 0.74$); (2) the pre-attack and complete post-attack samples ($p = 0.33$); or (3) the pre-attack sample and each of the post-attack daily samples separately (see Supplementary Material). The pre- and post-attack samples, in other words, are statistically equivalent across pre-treatment covariates as would be expected given (1) random assignment to survey wave (by design) and (2) an absence of differential non-response. Nevertheless, we statistically adjust for potential differences in the pre- and post-attack samples by including pre-treatment covariates in regression models as appropriate to each outcome of interest. In only one model do the adjusted and unadjusted statistical tests differ, which we discuss explicitly at the relevant point of the text.[7]

[7] Each daily sample consists of those who respond on a given day. As a robustness check, we also examine each of our results using only the sample of respondents who both received and responded within a day of survey receipt (the vast majority of respondents, 95%, respond within one day of receiving the survey). The results are equivalent to those using the full sample (see Supplementary Material).

Survey design

The survey was designed to capture two primary outcomes: (1) support for Syrian refugee resettlement, and (2) willingness to contact a Member of Parliament about the issue. It further captured 21 separate indicators measuring sympathy for and anxiety toward Syrian refugees, and perceptions of Syrian refugees as a threat to security, culture, and the economy. Due to survey length restrictions given by the survey firm, respondents were assigned at random to one of two survey branches containing either questions regarding emotions (sympathy and anxiety), or those regarding threat (security, cultural, and economic).

All respondents read a short paragraph stating that the government was considering admitting more refugees from Syria. Respondents who were assigned to the emotion branch were then asked to specify, on a 0 to 10 scale, the degree to which they felt the following emotions toward Syrian refugees: sympathy, indifference, compassion, sadness, and distress.[8] Responses to the first four of these items were summed to form a sympathy index ($\alpha = 0.79$).[9] Respondents were then asked a similar question regarding another set of emotions regarding Syrian refugee resettlement: anxiety, upset, worry, fear, anger, pride, and hope. Responses to the first four of these items were summed to form an anxiety index ($\alpha = 0.93$).[10,11]

Respondents who were assigned to the threat branch were asked three sets of three questions to measure their beliefs concerning the degree to which Syrian refugee resettlement posed a threat to security, culture, and the economy. To create a security threat index, respondents were asked whether they believed that some refugees would have links to terrorism; whether refugees would pose a threat to national security; and whether refugees' presence would lead respondents to fear for their safety. A six-category likert scale, from "Strongly disagree" to "Strongly agree", was used as the response scale, and responses were summed to form a security threat index

[8] Terminal ends of the scale were labeled 'Not at all' and 'A great deal'.

[9] In a factor analysis, the loading for the distress indicator was low, and excluded from the index.

[10] Following Brader, Valentino, and Suhay (2008), we label this index 'anxiety', but it may also be interpreted as measuring 'negative affect'. Inclusion of the anger indicator in the scale produces both substantively equivalent results (see Supplementary Material) and scale consistency ($\alpha = 0.93$), but is excluded here because anxiety and anger are generally considered to theoretically signify distinct emotions.

[11] In factor analysis, the loadings for 'pride' and 'hope' were low, and excluded from the index.

($\alpha = 0.91$). To measure perceptions of refugees as a cultural threat, respondents were asked whether they believed that Syrian refugees would integrate well into society; whether their values would conflict with those of the society into which they would belong; and whether their presence would benefit national culture ($\alpha = 0.81$). For the final index, respondents were asked whether Syrian refugees' presence would be economically costly; whether refugees would help grow the economy; and whether refugees would increase competition for jobs ($\alpha = 0.64$). All indexes are standardized to have mean zero and unit variance in the pre-attack period, and therefore estimated effects are presented in standardized units.

Finally, all respondents were asked whether they favored Syrian refugee resettlement on a 6-category likert scale ("Strongly disagree" to "Strongly agree"), and whether they would consider contacting their Member of Parliament regarding refugee resettlement ("No"/"Yes"). We treat this latter measure as a quasi-behavioural measure of mobilization, although it may also be regarded more conservatively as a measure of issue salience.

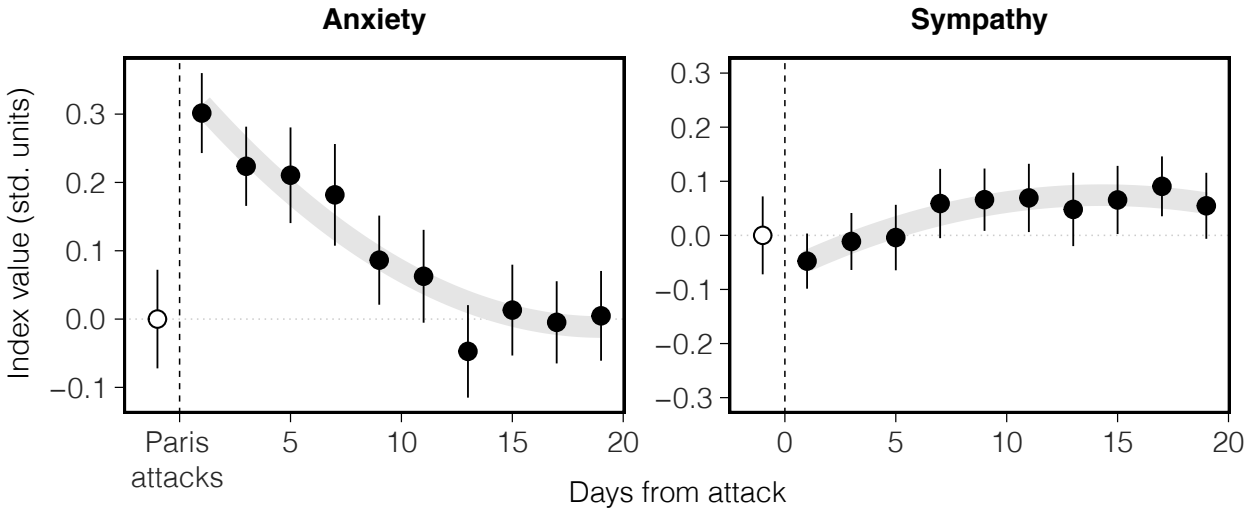
Results

Before testing each hypothesis statistically, we show each measure graphically across time. As we will see, these graphs tell an exceptionally clear and consistent story about how emotions and attitudes shifted (or did not) as a result of the attacks, and how they changed over time.

Emotions and attitudes toward refugees and resettlement

Anxiety and sympathy. Figure 1 presents the raw data for the indexes measuring anxiety concerning resettlement and sympathy for refugees. To ease visual interpretation, changes across time in this figure and subsequent ones are approximated with a second-degree polynomial regression line. As expected, the level of anxiety concerning refugee resettlement increases sharply in the immediate aftermath of the Paris terrorist attacks. In the days that follow, however, the effect of the attacks on anxiety rebounds rapidly. Within roughly a week and a half after the attacks, levels of anxiety concerning refugee resettlement return to their pre-attack level.

Figure 1: Anxiety toward and sympathy for refugees across time



Each point represents a two-day average. The horizontal line indicates the mean index value immediately prior to the attacks (with CI); the vertical lines, the 90% confidence interval.

To examine the effect of the attacks on anxiety statistically, we regress the anxiety index on an indicator variable representing the post-attack period and a set of pre-treatment covariates using data collected within 2 days of the attacks. Regression results are presented in Model (1) of Table 1. Consistent with the first hypothesis, and as is visually evident in Figure 1, there is strong evidence ($p < 0.001$) that the attacks caused a substantial increase in the public's anxiety over Syrian refugee resettlement.

Turning to the second panel of Figure 1, we observe a similarly clear but substantively different picture with respect to the effect of the attacks on sympathy for refugees. In contrast to the pronounced increase in anxiety observable in the first panel, there is no clear indication that the attacks meaningfully affected sympathy for Syrian refugees themselves. Regression results presented in Model (2) of Table 1 bear this out: differences in sympathy for Syrian refugees between the immediate pre- and post-attack period is neither large nor is there strong evidence ($p = 0.52$) that the attacks affected the public's sympathy for refugees.

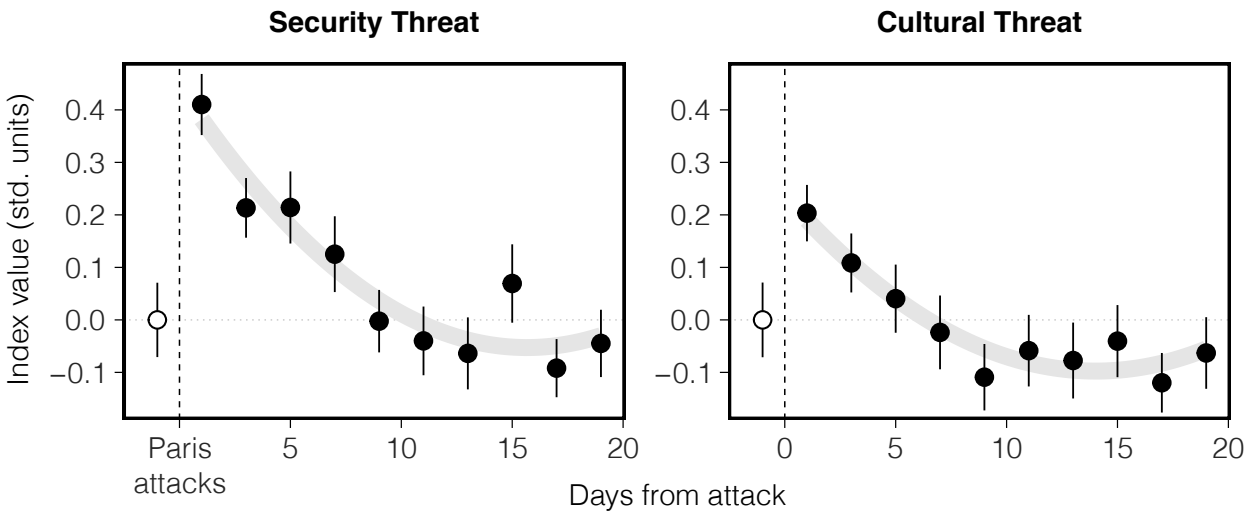
Security and cultural threat. Figure 2 presents the raw data for the security and cultural threat indexes. As can be observed in both panels of the figure, respondents' beliefs regarding whether

Table 1: Emotions and perceptions of threat OLS regression results

	Anxiety	**Sympathy**	**Security threat**	**Cultural threat**	**Economic threat**
	(1)	(2)	(3)	(4)	(5)
Paris attacks	0.262***	−0.020	0.392***	0.190***	0.081
	(0.054)	(0.049)	(0.054)	(0.051)	(0.049)
Female	0.062	0.270***	0.029	−0.119*	0.087
	(0.052)	(0.048)	(0.052)	(0.049)	(0.048)
Age 30-39	0.095	−0.073	0.243**	0.122	0.257**
	(0.087)	(0.079)	(0.091)	(0.085)	(0.083)
Age 40-49	−0.005	0.201*	0.096	0.011	0.066
	(0.095)	(0.086)	(0.098)	(0.091)	(0.089)
Age 50-64	0.033	0.209**	0.126	0.101	0.044
	(0.080)	(0.073)	(0.081)	(0.075)	(0.074)
Age 65+	0.095	0.184*	0.219*	0.141	0.082
	(0.082)	(0.075)	(0.085)	(0.080)	(0.078)
College	0.178*	−0.185*	0.023	−0.049	−0.087
	(0.085)	(0.078)	(0.084)	(0.079)	(0.077)
University degree	−0.185*	0.182**	−0.323***	−0.328***	−0.360***
	(0.074)	(0.068)	(0.074)	(0.069)	(0.068)
Francophone	0.146	−0.089	0.029	−0.0004	−0.048
	(0.092)	(0.084)	(0.100)	(0.094)	(0.092)
Other language	0.015	−0.073	0.019	0.009	−0.042
	(0.084)	(0.076)	(0.087)	(0.081)	(0.079)
Ontario	0.219	−0.262*	0.166	0.263**	0.287**
	(0.120)	(0.110)	(0.108)	(0.100)	(0.098)
Quebec	0.111	−0.435***	0.276*	0.504***	0.347**
	(0.135)	(0.124)	(0.129)	(0.121)	(0.118)
West	0.164	−0.293**	0.042	0.253*	0.289**
	(0.121)	(0.111)	(0.109)	(0.102)	(0.099)
Political ideology	0.199***	−0.140***	0.212***	0.187***	0.191***
	(0.011)	(0.010)	(0.011)	(0.010)	(0.010)
Intercept	−0.983***	0.598***	−0.993***	−0.917***	−0.937***
	(0.146)	(0.134)	(0.143)	(0.134)	(0.131)
N	1,702	1,693	1,805	1,806	1,808

Survey data used in each regression model are those collected within 2 days before and after the attacks. Standard errors in parentheses. $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Figure 2: Security and cultural threat indexes across time



Each point represents a two-day average. The horizontal line indicates the mean index value immediately prior to the attacks (with CI); the vertical lines, the 90% confidence interval.

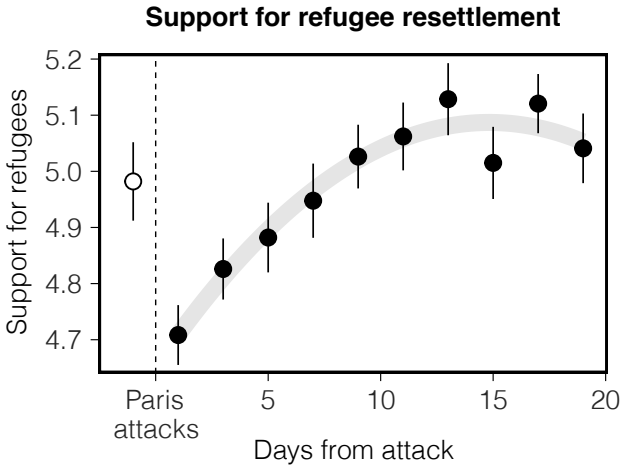
refugees pose a security and cultural threat to the country both increase in the immediate aftermath of the Paris terrorist attacks, with a particularly sharp increase in perceptions of refugees as a security threat. Similar to the pattern of change in anxiety following the attacks, however, these changes in threat perceptions rebound rapidly, returning to their pre-attack levels roughly one to two weeks after the attacks.

To examine the effects of the attacks on threat perceptions statistically, we fit a regression model to each threat index using data collected within 2 days of the attacks. Results from these models are presented in the third and fourth columns of Table 1.[12] The results provide strong evidence that the attacks caused an increase in the public's perceptions of refugees as a threat to both security ($p < 0.001$) and to culture ($p < 0.001$).

Support for refugee resettlement. To investigate the effect of the Paris terrorist attacks on support for refugee resettlement, we begin by presenting the raw data in Figure 3. Consistent with our hypothesis, there is a sharp decrease in support for refugee resettlement immediately following the attacks. In a now-familiar pattern, in the days that follow, attitudes toward refugee

[12] Results for the economic threat index are shown for completeness (for further details, see the Supplementary material).

Figure 3: Support for refugee resettlement across time



Each point represents a two-day average, with 90% confidence intervals. Response categories to the question concerning agreement that Syrian refugees should be permitted to resettle are coded 1 ("Strongly disagree") through 6 ("Strongly agree").

resettlement rebound rapidly. Within roughly a week after the attacks, support for resettlement rises to its pre-attack level, increasing slightly further before remaining relatively constant in the final week during which data were collected.

To examine the effect of the attacks on support for refugee resettlement statistically, we fit an ordinal regression model to the data collected within two days of the attacks. Results from the model are presented in Table 2. Consistent with expectations, there is strong evidence ($p < 0.001$) that the attacks caused a decrease in the public's support for refugee resettlement.

To calculate the magnitude of this effect on the original response scale, we use parameter estimates from the fitted model to calculate the probability of support for resettlement for each individual in the dataset, first by setting the treatment indicator to 0 and then to 1, after which we calculate an average of the differences in these probabilities. Results from this procedure are presented in Figure 4. As the figure shows, the Paris attacks are estimated to have caused a 4.2 percentage point decrease in the public's support for refugee resettlement (agree vs. disagree), a relatively modest effect size, especially given the scale of the attacks.

To examine why support for refugee resettlement declined, we investigate the role of each emotion and threat perception as a causal mechanism through which the attacks affected

Table 2: Support for refugee resettlement ordinal logistic regression results

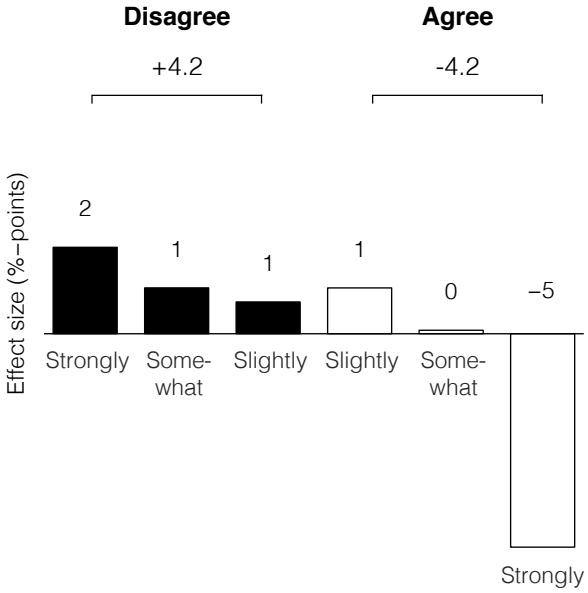
	Support for resettlement	
	Coef	SE
Paris attacks	-0.284^{***}	(0.070)
Female	0.187^{**}	(0.068)
Age 30-39	-0.223	(0.116)
Age 40-49	0.078	(0.125)
Age 50-64	0.087	(0.105)
Age 65+	-0.028	(0.109)
College	-0.194	(0.108)
University degree	0.426^{***}	(0.096)
Francophone	-0.265^{*}	(0.122)
Other language	-0.283^{**}	(0.109)
Ontario	-0.544^{***}	(0.160)
Quebec	-0.916^{***}	(0.180)
West	-0.538^{***}	(0.161)
Political ideology	-0.387^{***}	(0.016)
N	3,548	

Survey data included in the regression model are those collected within 2 days of the attacks. Cut-point parameter estimates now shown. *p < .05; **p < .01; ***p < .001

attitudes toward resettlement. To so do, we turn to recent advancements in methods for the study of causal mechanisms by applying the method proposed by Imai et al. (2011) and Imai and Yamamoto (2013) to estimate the extent to which changes in support for refugee resettlement operated through each threat perception and emotion. A detailed description of the estimation procedure and results is provided in the Supplementary Material. Given the well-known challenges in assessing causal mechanisms in survey research (see Imai, Tingley, and Yamamoto, 2013; Imai and Yamamoto, 2013),[13] we also conduct sensitivity analyses of our results, which show that our estimates are robust to the presence of strong unmeasured (pre-treatment) confounders (see Supplementary Material).

[13]A design-based approach to identifying causal mechanisms—in which the mechanism is itself manipulated by the researcher (see Imai, Tingley, and Yamamoto, 2013)—is not possible given our natural experimental setup. This limitation highlights the tradeoff between the control afforded to researchers by survey- and lab-based experimentation, and the benefits to validity of assessing a real-world terrorist attack using a quasi-experimental research design.

Figure 4: Estimated effect of Paris terrorist attacks on public support for refugee resettlement

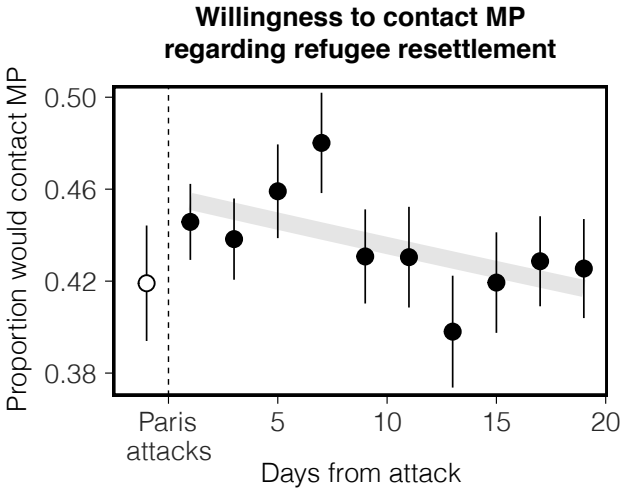


The results of the causal mechanisms analysis suggest that security concerns were the primary mechanism through which the attacks affected support for resettlement, followed by anxiety and cultural threat. Estimates of the effect of the attacks on support for resettlement that operate through sympathy, however, are neither substantively nor significantly different from zero. That threat and anxiety, rather than sympathy, drive the decline in support for resettlement suggests that terrorism may work through channels principally linked to physical safety rather than those due to decreases in positive emotions toward groups associated with the perpetrators by religion, national origin, or ethnicity. The implications of this result, we discuss further below.

Political mobilization

Lastly, we investigate whether the Paris terrorist attacks politically mobilized the public around the issue of refugee resettlement and whether the attacks resulted in differences in mobilization among supporters and opponents of refugee resettlement. To do so, we examine, as a quasi-behavioral measure, respondents' expressed willingness to contact a Member of Parliament (MP) regarding Syrian refugee resettlement. As we noted earlier, because we cannot directly measure respondents' contact with their Member of Parliament, a more conservative interpretation of

Figure 5: Willingness to contact Member of Parliament across time



Each point represents a two-day average, with 90% confidence intervals.

our analysis is that of the effect of the attacks on the salience of refugee resettlement as an issue among resettlement's supporters and opponents.

The raw data for this outcome are presented in Figure 5. Unlike data shown in previous figures, the effect of the attacks on the public's willingness to contact a political representative concerning refugee resettlement is less apparent visually. To examine the effect of the attacks on political mobilization statistically, we fit a logistic regression model to the data collected within two days of the attacks, including pre-treatment covariates. Results from this model are presented in Model (1) in Table 3. The model provides evidence that the Paris attacks increased the probability of respondents expressing willingness to contact their MP regarding Syrian refugee resettlement ($p = 0.04$). We note, however, that although the regression-adjusted estimate is statistically significant, evidence from the unadjusted difference (as is evident in Figure 5) is weaker ($p = 0.15$).

More consequential for policy and our understanding of political responses to international terrorism, however, is whether terrorism can lead to *asymmetry* in political mobilization among supporters and opponents of a given policy. Because attitudes toward refugee resettlement is a post-treatment variable, we do not aim to estimate the effect of the attacks on mobilization

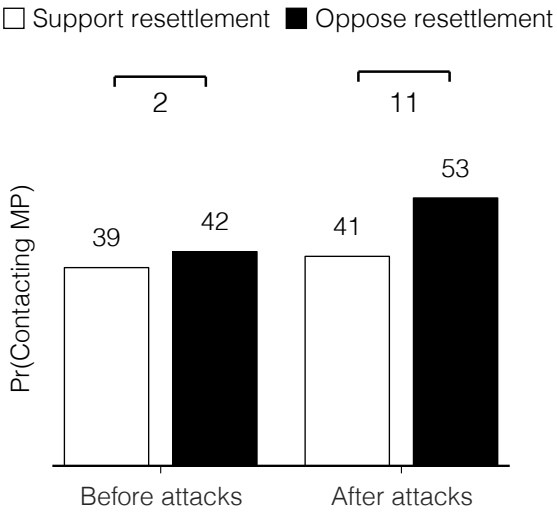
among those who opposed or supported resettlement before the attacks. Instead, we examine how willingness to contact a political representative about the issue differed between opponents and supporters of refugee resettlement immediately before and after the attacks.

We begin by fitting two models to the data. The first model is fit to evaluate the difference in willingness to contact a political representative between opponents and supporters of refugee resettlement among those surveyed immediately before the attacks; the second, among those surveyed immediately afterward. Results from these models are presented in Models (2) and (3) of Table 3. As Model (2) demonstrates, before the attacks there is little evidence that political mobilization regarding refugee resettlement differed between those who opposed or supported refugee resettlement ($p = 0.65$). In the immediate aftermath of the attacks, however, those opposed to resettlement were substantially more likely to express willingness to contact an MP regarding Syrian refugee resettlement ($p < 0.001$). To examine these differences statistically, Model (4) in Table 3 is fit to the data collected within two days of the attacks, and includes an interaction term between support for resettlement and the Paris attacks indicator. The model demonstrates that the difference in mobilization between supporters and opponents in the post-attack period is different from that in the pre-attack period ($p < 0.01$).

To illustrate this difference in political mobilization between opponents and supporters of refugees before and after the attacks, we generate predicted probabilities of willingness to contact an MP regarding Syrian refugee resettlement using parameter estimates from the models fit separately to the pre- and post-attack data (Models (2) and (3)). Predicted probabilities are calculated using these models for all respondents in the dataset, holding (pre-treatment) covariates at their observed values.

Figure 6 presents the result of this calculation. As the figure shows, willingness to contact a political representative prior to the attacks is roughly equivalent between opponents and supporters of refugee resettlement: the probability of contacting an MP is slightly higher among opponents (2 percentage points). After the attacks, however, the difference in political mobilization between opponents and supporters is substantial. Among opponents of resettlement, the

Figure 6: Willingness to contact an MP regarding resettlement before and after Paris attacks



probability of expressing willingness to contact a political representative regarding refugees is 11 percentage points higher, a substantial difference in political mobilization; among supporters, only 2 percentage points.[14] The difference is thus a substantial 10 percentage points higher among opponents for the model fit to the post-attack data. Large-scale terrorist attacks, in other words, can lead to major differences in political mobilization between opponents and supporters of related policies.

Conclusion

Although research into the effects of terrorism has grown in recent years, relatively few studies have examined the effects of real-world acts of terrorism on public opinion and behavior internationally, or on the public's attitudes toward refugees and refugee resettlement. Remedying this is important because the audiences affected by terrorism and its policy implications are often international, and refugee resettlement is one of the most pressing issues in contemporary international politics.

[14] Unadjusted estimates show even larger differences: 0.5 percentage points among supporters of resettlement between the pre- and post-attack periods; 13 percentage points among opponents.

Table 3: Willingness to contact MP regarding resettlement logistic regression results

	Willingness to contact MP regarding Syrian refugee resettlement			
	(1) Within 2 days of attacks	(2) Before attacks	(3) After attacks	(4) Within 2 days of attacks
Paris attacks	0.157*			0.051
	(0.079)			(0.087)
Oppose refugees		0.149	0.522***	0.020
		(0.206)	(0.123)	(0.192)
Female	0.180*	0.178	0.190*	0.185*
	(0.076)	(0.140)	(0.091)	(0.076)
Age 30-39	0.137	−0.174	0.248	0.113
	(0.131)	(0.242)	(0.158)	(0.132)
Age 40-49	0.437**	0.527*	0.413*	0.444**
	(0.141)	(0.261)	(0.169)	(0.142)
Age 50-64	0.447***	0.243	0.546***	0.452***
	(0.118)	(0.217)	(0.143)	(0.119)
Age 65+	0.500***	0.405	0.545***	0.498***
	(0.123)	(0.229)	(0.147)	(0.123)
College	0.054	0.104	0.023	0.053
	(0.123)	(0.223)	(0.150)	(0.124)
University degree	−0.062	0.073	−0.054	−0.012
	(0.109)	(0.196)	(0.133)	(0.110)
Francophone	−0.496***	−0.219	−0.713***	−0.513***
	(0.144)	(0.249)	(0.181)	(0.145)
Other language	−0.377**	−0.517*	−0.336*	−0.387**
	(0.122)	(0.226)	(0.147)	(0.123)
Ontario	−0.145	0.025	−0.227	−0.165
	(0.155)	(0.300)	(0.183)	(0.156)
Quebec	−1.383***	−1.376***	−1.350***	−1.404***
	(0.187)	(0.346)	(0.226)	(0.188)
West	−0.129	0.161	−0.253	−0.145
	(0.156)	(0.304)	(0.184)	(0.157)
Political ideology	−0.050**	−0.126***	−0.055**	−0.077***
	(0.016)	(0.034)	(0.021)	(0.018)
Oppose refugees × Paris attacks				0.558*
				(0.218)
Intercept	0.001	0.149	0.115	0.102
	(0.203)	(0.370)	(0.233)	(0.206)
N	3,551	1,134	2,408	3,542

Survey data included in regression models are those collected within 2 days before and after the attacks. Standard errors in parentheses. *p < .05; **p < .01; ***p < .001

This study helped fill these gaps in the literature by using a natural experiment to estimate the effects of the 2015 Paris terrorist attacks on the public's attitudes, emotions, and mobilization concerning refugees and resettlement. The Paris attacks are a critical case not only because they were the largest in the West in over a decade, but also because they coincided with the Syrian refugee crisis, the largest international refugee crisis since the end of the Second World War. Unlike previous attacks in the West, whose policy implications centered primarily on anti-terrorism and national security policy generally, the Paris case is defined by the intersection of national security policy and concerns over international migration. It represents one of the clearest examples of overlap between national security concerns tied to terrorism and a set of domestic and international policies consequential for a wide range of actors. The implications of this study are therefore many.

Attitudes and emotions. To begin, our findings demonstrate that, as hypothesized, the Paris attacks increased the public's anxiety toward refugees and perceptions of refugees as a threat to national security and culture. Contrary to expectations, however, we do not find strong evidence that the attacks affected sympathy for Syrian refugees themselves. Combined with the clear effects of the attacks on threat perceptions and anxiety, these results suggests that although terrorism affects both attitudes and emotions toward refugees and resettlement, it does not necessarily lead the public to paint with a broad brush those who share a national, religious, and/or ethnic identity with the perpetrators. Terrorism may increase security concerns and anxiety about a minority of refugees, but concerns over security appear to increase in the absence of a simultaneous decrease in sympathy (positive affect) toward refugees as a whole.

Our results suggest, furthermore, that the public's preferences over policy are highly resilient, even in the face of what were substantial, dramatic, and widely covered terrorist attacks. Despite the attacks increasing opposition to refugee resettlement as hypothesized, the magnitude of the effect was a modest 4.2 percentage points.

Our natural experimental research design allows us to provide this as a credible causal estimate of the effect of the attacks, but it is worthwhile to consider how well this finding—

specific to a given national context (i.e. Canada)—might generalize. Absent new data, this question is inherently difficult, but contextual and policy similarities across Western countries in the aftermath of the attacks suggest that it is unlikely that the modest effect we estimate in one national context differed substantially from those in European countries or the United States. First, as in Europe and the US, the issue of Syrian refugee resettlement in Canada was a highly political and sensitive issue. As elsewhere, there was substantial debate about resettlement, and the attacks in Paris led to intense concern over the threat posed by refugees to national security and a vocal political backlash against resettlement. Second, the resilience of public opinion to the attacks appears to be mirrored elsewhere in policy. For example, in Germany and Sweden—two major recipients of refugees—resettlement policy changed little in the aftermath of the attacks despite heated debate. Furthermore, in France, the government promised to accept 30,000 Syrian refugees shortly after the attacks, despite their occurring in the French capital (Tharoor, 2015).[15] In the United States, the Obama administration maintained its plan to accept 10,000 refugees by the end of 2016. In both political discourse and policy, in other words, responses to the attacks appeared relatively similar across Western countries.

Political mobilization. If the effect of the attacks on attitudes toward resettlement policy was modest, what explains the appearance, in a wide range of countries, of a substantial increase in vocal opposition to Syrian refugees and refugee resettlement in political discourse? Our findings suggest that while terrorist attacks may shift public attitudes on policy only moderately, they can lead to large differences in mobilization among politically important sub-groups of the population. This is suggested by the fact that although before the attacks supporters and opponents of resettlement were roughly equally likely to consider contacting their Members of Parliament about resettlement, the difference between supporters and opponents of refugee resettlement widened substantially in the immediate aftermath of the attacks: among opponents of resettlement, willingness to express attitudes concerning refugees to a political representative

[15] Silva (2018) finds, for example, that the attacks did not affect the French public's overall attitudes toward immigration or refugees. This result should be treated with caution, however, due to its reliance a small treatment group ($n = 96$) pooled across 4 days after the attacks.

increased by 11 percentage points; among supporters, only 2.

These differences in political mobilization highlight a critical complication for the democratic process. In the aftermath of terrorism, the signal received from the public by political representatives will, in part, result from the mobilizing effect of terrorism. If mobilization differs between supporters and opponents of a given policy, however, then as a measure of public opinion, this signal will be misleading: the growth in *expressions* of opposition to refugees can increase even if underlying *attitudes* shift little or not at all. Absent attention to information distinguishing expressions of political preferences from changes in attitudes, political mobilization may be mistaken for increases in opposition to or support for highly consequential policies. At minimum, this suggests that commentators and political leaders should exercise caution in their interpretations of increases in expressions of opposition to or support for policies in the aftermath of terrorism.

Duration. Lastly, one of the most striking findings in this study is the speed with which the effects of the Paris attacks rebounded. Using large daily survey waves collected for nearly three weeks after the attacks, we show that despite the severity of the attacks, their effects were surprisingly short-lived. These patterns, furthermore, are both clear and similar across multiple indicators.

The rapid decay in the effects of the attacks raises important questions, and opens up multiple avenues for future research. Because this is the first study to track the effects of a major terrorist attack with substantial precision, whether the effects of comparable events cause similar dynamics is unknown. Although research in political communication also shows that effects often disappear rapidly (e.g. Druckman and Nelson, 2003; Gerber et al., 2011; Hill et al., 2013; Luskin, Fishkin, and Jowell, 2002; Mutz and Reeves, 2005), it is relatively surprising that the effects of a massive terrorist attack follow a similar pattern. This decay may be due to rapidly decreasing news exposure or be particular to the actions of politicians in the attacks' aftermath. The mediating role of news coverage and of politicians in lengthening or shortening the duration of the effects of large-scale events are important, if empirically difficult avenues for

future research. It is nevertheless important to highlight the scope of the Paris attacks. Because the attacks were the deadliest in the West in more than a decade, these effects, compared to those of other cases, should be those most likely to be both substantial and persistent. Our results suggest, however, that large-scale events may not have the large and long-term effects on public opinion that are often presented as fact by politicians and political commentators.

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Does International Terrorism affect Public Attitudes toward Refugees?

Evidence from a Large-scale Natural Experiment

Supplementary Material

Contents

A. Survey data and balance checks

The survey data used in the article were collected by the public opinion research firm Vox Pop Labs as part of a large-scale 2015 Canadian federal election post-election survey. The survey was sent to all members of the firm's national online public opinion panel (~480,000 potential respondents), from which 68,116 respondents completed the survey, a response rate of 14%, and 18,634 recieved and completed the survey module concerning Syrian refugees.[1] The survey was

[1]Within-survey assignment to receive the Syrian refugee question module, or an alternative unrelated module, was randomly assigned.

sent through e-mail invitation to the first wave of randomly sampled respondents less than 48 hours before the Paris terrorist attacks (n = 1,152), and to a second wave of randomly selected respondents less than 48 hours afterward (n = 2,448). Further survey waves of independent randomly sampled survey panelists were conducted each day for 18 days thereafter (n = 835 on average per day). As noted in the article, because the survey was sent to all members of the research firm's online panel, respondents were not purposefully selected to match the socio-demographic characteristics of the national population. Estimates presented in the article's results section are therefore statistically adjusted through regression and survey weighting to match the population's demographic and geographic distribution as indicated by the national census. Weighting variables include gender, age, education, mother tongue, and region of residence.

Balance checks

Because survey panelists were assigned to each survey wave at random, the timing of survey receipt is, by design, independent of the Paris attacks. Nevertheless, it is possible that the attacks or other confounders could have caused differences in sample composition between the pre- and post-attack samples due to differential survey response. To investigate this, we examine pre-treatment covariate balance between samples. To begin, Table A1 presents descriptive statistics of the sample of survey respondents who were invited and responded to the post-election survey less than two days before the November 13, 2015 Paris terrorist attacks and the sample of respondents who were invited and responded less than two days afterward. The fourth column displays the normalized difference between the two samples for each covariate (Imbens and Rubin, 2015, 310-313), calculated as follows:

$$\Delta \equiv \frac{\mu_{t=0} - \mu_{t=1}}{\sqrt{(\sigma^2_{t=0} + \sigma^2_{t=1})/2}}, \tag{A1}$$

where $\mu_{t=0}$ and $\mu_{t=1}$ denote the sample means calculated from the data collected before ($t = 0$) and after ($t = 1$) the attacks, and $\sigma_{t=0}$ and $\sigma_{t=1}$ denote the respective standard deviations.

Table A1: Balance checks for data collected within 2 days of the Paris terrorist attacks

	Mean ($\mu_{t=0}$) < 2 days before	**Mean ($\mu_{t=1}$) < 2 days after**	**Normalized difference (Δ)**
Political ideology (0 = left, 10 = right)	4.13	4.19	-0.03
Female	0.39	0.4	-0.01
Male	0.61	0.6	0.01
Age 18-29	0.15	0.16	0
Age 30-39	0.18	0.17	0.03
Age 40-49	0.13	0.13	-0.03
Age 50-64	0.31	0.3	0.02
Age 65+	0.23	0.24	-0.03
High school or below	0.16	0.14	0.03
College	0.24	0.24	0.01
University degree	0.6	0.62	-0.03
Quebec	0.27	0.26	0.02
West	0.31	0.32	-0.04
Ontario	0.37	0.35	0.03
Atlantic	0.05	0.06	-0.03
English	0.67	0.67	0.01
French	0.16	0.17	-0.02
Other language	0.17	0.16	0.02

This table shows the mean level of pre-treatment covariates (political ideology, gender, age, education, region, mother tongue) from the survey sample collected less than 2 days before the attacks (n = 1,121) and that collected less than 2 days after the attacks (n = 2,418). The fourth column displays the normalized difference in means between the two samples. Political ideology is an ideological self-placement scale where 0 indicates left-wing and 10 indicates right-wing.

As is clear from Table A1, sample characteristics before and after the Paris attacks are extremely similar across all observed pre-treatment covariates, showing no evidence of meaningful differences in survey non-response.[2] To test this further, we regress an indicator variable that represents responding to the survey invitation after the attacks on the full set of pre-treatment covariates. As shown in Table A2, none of the model parameters for these covariates significantly differentiate respondents in the pre- and post-attack samples, providing further evidence that non-response among the random sample of respondents surveyed after the attacks does not meaningfully differ from that of respondents sampled before the attacks.[3]

[2]Note that all pre-treatment covariates (i.e. demographics and political ideology) are collected prior to the attacks when respondents were first included in the public opinion research firm's online survey panel, and thus not affected by the attacks.

[3]Note that a parameter for the variable "Survey language: French" is included in the regression specification

Table A2: Regression results to examine sample composition before and after the Paris attacks

	Response after Paris attacks	
Female	−0.003	(0.076)
Age 30-39	−0.132	(0.130)
Age 40-49	0.023	(0.142)
Age 50-64	−0.095	(0.118)
Age 65+	−0.025	(0.123)
College	0.053	(0.123)
University degree	0.113	(0.108)
Francophone	0.157	(0.157)
Other language	−0.024	(0.137)
Ontario	−0.159	(0.172)
Quebec	−0.289	(0.229)
West	−0.039	(0.174)
Political ideology	0.016	(0.016)
Survey language: French	−0.578**	(0.204)
Intercept	0.964***	(0.208)
N	3,550	

This table presents results from a logistic regression model fit to survey data collected within 2 days before and after the attacks. *p < .05; **p < .01; ***p < .001

Furthermore, a likelihood ratio test between a model with and without pretreatment covariates provides no strong evidence that the covariates *jointly* differentiate respondents in the pre- and post-attack samples (p = 0.74).

Because the article also examines effect duration, we further investigate differential non-response by comparing the pre-attack sample to the complete post-attack sample. A likelihood ratio test finds that pretreatment covariates do not significantly differentiate the pre-attack from the full post-attack sample (p = 0.33). Lastly, we conduct a series of 10 separate likelihood ratio tests, correcting for multiple comparisons, by comparing the pre-attack sample to each of the 10 post-attack 2-day periods as are shown graphically by each point in Figures 1, 2, 3, and 5 in the article. None of the likelihood ratio tests suggest any statistical differences

because the proportion of survey invitations to panelists who take surveys in the French language was sampled at a higher frequency in the first wave of the post-election survey by design for reasons unrelated to goal of the refugee questions. The raw data presented graphically in the main article are weighted by survey language to reflect this.

between the pre-attack sample and each of the post-attack samples. Table A3 shows the sample characteristics for each of these samples.

Table A3: Balance checks for data collected across full period

	< 2 days before	**< 2 days after**	**3-4**	**5-4**	**7-8**	**9-10**	**11-12**	**13-14**	**15-16**	**17-18**	**19-20**
Political ideology (0-10)	4.12	4.19	4.06	4.25	4.25	4.15	4.25	4.16	4.17	4.08	4.27
Female	0.39	0.4	0.39	0.37	0.37	0.36	0.38	0.39	0.36	0.37	0.39
Male	0.61	0.6	0.61	0.63	0.63	0.64	0.62	0.61	0.64	0.63	0.61
Age 18-29	0.15	0.16	0.16	0.18	0.15	0.14	0.16	0.16	0.17	0.16	0.17
Age 30-39	0.18	0.17	0.19	0.16	0.16	0.17	0.16	0.19	0.18	0.17	0.18
Age 40-49	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.13	0.15	0.15	0.14
Age 50-64	0.31	0.3	0.28	0.29	0.29	0.33	0.3	0.3	0.28	0.29	0.27
Age 65+	0.23	0.24	0.23	0.25	0.27	0.22	0.25	0.22	0.22	0.23	0.24
High school or below	0.16	0.14	0.13	0.14	0.15	0.12	0.14	0.12	0.15	0.15	0.15
College	0.24	0.24	0.24	0.27	0.26	0.26	0.26	0.25	0.24	0.24	0.24
University degree	0.6	0.62	0.64	0.59	0.59	0.62	0.6	0.63	0.62	0.61	0.61
Quebec	0.27	0.26	0.25	0.27	0.26	0.27	0.25	0.27	0.28	0.26	0.26
West	0.31	0.32	0.34	0.33	0.34	0.33	0.36	0.29	0.27	0.33	0.35
Ontario	0.37	0.35	0.36	0.35	0.35	0.35	0.34	0.37	0.39	0.35	0.32
Atlantic	0.05	0.06	0.06	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06
English	0.67	0.67	0.68	0.66	0.69	0.66	0.65	0.66	0.66	0.66	0.66
French	0.16	0.17	0.14	0.17	0.16	0.17	0.17	0.16	0.17	0.15	0.18
Other language	0.17	0.16	0.17	0.17	0.15	0.17	0.18	0.18	0.17	0.19	0.17

This table shows the mean level of pre-treatment covariates (political ideology, gender, age, education, region, mother tongue) across each of the pre- and post-attack periods corresponding to each point shown in the figures in the main article.

Furthermore, we note that the invitation to the survey referred to it as a post-election study, and did not reference either the Paris attacks or refugees. We can expect, therefore, that no respondents in the immediate post-attack period would have responded (or not responded) to the survey invitations based on the inclusion of questions regarding refugees. Moreover, within-survey non-response to the questions regarding refugees is extremely low (~0.5%) and there is no evidence that non-response to the refugee questions varied between the pre- and post-attack periods ($p = 0.57$). In sum, both empirically, given the comparison of observed pretreatment variables, and theoretically, given the construction of the survey, there is a very strong case that responding to the survey before and after the attacks is independent of treatment assignment.

B. Robustness check concerning the timing of survey completion

In this section, we conduct a robustness check on our results by excluding respondents in each survey wave who did not respond to the survey within a day of survey invitation. The vast majority of respondents who received and completed the survey immediately before or immediately after the attacks responded to the survey within a day of survey receipt (95%). Tables A4, A5, and A6 present the main regression results from the article. Each table allows us to compare model results from the full sample to those from the subset of respondents who responded within a day of survey receipt. In each table, the results are effectively identical, with no substantive or meaningful statistical differences.

Table A4: Emotions and perceptions of threat OLS regression results

	Anxiety		**Sympathy**		**Security threat**		**Cultural threat**		**Economic threat**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Paris attacks	0.262***	0.277***	−0.020	−0.042	0.392***	0.405***	0.190***	0.192***	0.081	0.079
	(0.054)	(0.055)	(0.049)	(0.050)	(0.054)	(0.055)	(0.051)	(0.052)	(0.049)	(0.051)
Female	0.062	0.073	0.270***	0.271***	0.029	0.031	−0.119*	−0.113*	0.087	0.091
	(0.052)	(0.053)	(0.048)	(0.049)	(0.052)	(0.054)	(0.049)	(0.050)	(0.048)	(0.049)
Age 30-39	0.095	0.094	−0.073	−0.067	0.243**	0.215*	0.122	0.094	0.257**	0.242**
	(0.087)	(0.088)	(0.079)	(0.080)	(0.091)	(0.092)	(0.085)	(0.087)	(0.083)	(0.085)
Age 40-49	−0.005	0.009	0.201*	0.208*	0.096	0.115	0.011	0.022	0.066	0.060
	(0.095)	(0.096)	(0.086)	(0.088)	(0.098)	(0.101)	(0.091)	(0.094)	(0.089)	(0.092)
Age 50-64	0.033	0.026	0.209**	0.229**	0.126	0.129	0.101	0.106	0.044	0.048
	(0.080)	(0.082)	(0.073)	(0.075)	(0.081)	(0.082)	(0.075)	(0.077)	(0.074)	(0.076)
Age 65+	0.095	0.092	0.184*	0.179*	0.219*	0.224**	0.141	0.144	0.082	0.054
	(0.082)	(0.084)	(0.075)	(0.077)	(0.085)	(0.087)	(0.080)	(0.082)	(0.078)	(0.080)
College	0.178*	0.180*	−0.185*	−0.186*	0.023	0.030	−0.049	−0.037	−0.087	−0.064
	(0.085)	(0.087)	(0.078)	(0.080)	(0.084)	(0.085)	(0.079)	(0.080)	(0.077)	(0.078)
University degree	−0.185*	−0.186*	0.182**	0.179*	−0.323***	−0.301***	−0.328***	−0.309***	−0.360***	−0.355***
	(0.074)	(0.076)	(0.068)	(0.069)	(0.074)	(0.075)	(0.069)	(0.071)	(0.068)	(0.069)
Francophone	0.146	0.161	−0.089	−0.080	0.029	0.055	−0.0004	0.013	−0.048	−0.032
	(0.092)	(0.095)	(0.084)	(0.086)	(0.100)	(0.102)	(0.094)	(0.096)	(0.092)	(0.094)
Other language	0.015	0.043	−0.073	−0.080	0.019	0.046	0.009	0.029	−0.042	−0.011
	(0.084)	(0.086)	(0.076)	(0.078)	(0.087)	(0.088)	(0.081)	(0.083)	(0.079)	(0.081)
Ontario	0.219	0.151	−0.262*	−0.272*	0.166	0.205	0.263**	0.300**	0.287**	0.314**
	(0.120)	(0.123)	(0.110)	(0.114)	(0.108)	(0.110)	(0.100)	(0.103)	(0.098)	(0.100)
Quebec	0.111	0.043	−0.435***	−0.449***	0.276*	0.327*	0.504***	0.544***	0.347**	0.362**
	(0.135)	(0.140)	(0.124)	(0.129)	(0.129)	(0.131)	(0.121)	(0.123)	(0.118)	(0.120)
West	0.164	0.123	−0.293**	−0.305**	0.042	0.077	0.253*	0.295**	0.289**	0.316**
	(0.121)	(0.124)	(0.111)	(0.115)	(0.109)	(0.111)	(0.102)	(0.104)	(0.099)	(0.101)
Political ideology	0.199***	0.201***	−0.140***	−0.142***	0.212***	0.214***	0.187***	0.187***	0.191***	0.191***
	(0.011)	(0.011)	(0.010)	(0.010)	(0.011)	(0.011)	(0.010)	(0.011)	(0.010)	(0.010)
Intercept	−0.983***	−0.947***	0.598***	0.621***	−0.993***	−1.065***	−0.917***	−0.975***	−0.937***	−0.967***
	(0.146)	(0.149)	(0.134)	(0.137)	(0.143)	(0.146)	(0.134)	(0.137)	(0.131)	(0.134)
Respondents who responded within a day of receiving survey		✓		✓		✓		✓		✓
N	1,702	1,633	1,693	1,624	1,805	1,711	1,806	1,712	1,808	1,714

Standard errors in parentheses. *p < .05; **p < .01; ***p < .001

Table A5: Support for refugee resettlement before and after Paris terrorist attacks

	Support for resettlement	
	(1)	(2)
Paris attacks	-0.284^{***}	-0.306^{***}
	(0.070)	(0.071)
Female	0.187^{**}	0.185^{**}
	(0.068)	(0.070)
Age 30-39	-0.223	-0.200
	(0.116)	(0.118)
Age 40-49	0.078	0.081
	(0.125)	(0.129)
Age 50-64	0.087	0.084
	(0.105)	(0.107)
Age 65+	-0.028	-0.034
	(0.109)	(0.111)
College	-0.194	-0.185
	(0.108)	(0.110)
University degree	0.426^{***}	0.429^{***}
	(0.096)	(0.098)
Francophone	-0.265^{*}	-0.283^{*}
	(0.122)	(0.125)
Other language	-0.283^{**}	-0.319^{**}
	(0.109)	(0.112)
Ontario	-0.544^{***}	-0.534^{**}
	(0.160)	(0.163)
Quebec	-0.916^{***}	-0.902^{***}
	(0.180)	(0.185)
West	-0.538^{***}	-0.540^{**}
	(0.161)	(0.164)
Political ideology	-0.387^{***}	-0.391^{***}
	(0.016)	(0.016)
κ_1	-5.285^{***}	-5.316^{***}
	(0.219)	(0.224)
κ_2	-4.570^{***}	-4.595^{***}
	(0.213)	(0.217)
κ_3	-4.098^{***}	-4.115^{***}
	(0.210)	(0.214)
κ_4	-3.246^{***}	-3.269^{***}
	(0.205)	(0.210)
κ_5	-2.018^{***}	-2.055^{***}
	(0.201)	(0.205)
Respondents who responded within a day of receiving survey		✓
N	3,548	3,383

*p < .05; **p < .01; ***p < .001

Table A6: Willingness to contact MP regarding resettlement logistic regression results

	Willingness to contact MP regarding Syrian refugee resettlement							
	(1) Within 2 days of attacks	(2) Within 2 days of attacks	(3) Before attacks	(4) Before attacks	(5) After attacks	(6) After attacks	(7) Within 2 days of attacks	(8) Within 2 days of attacks
Paris attacks	0.157*	0.163*					0.051	0.064
	(0.079)	(0.081)					(0.087)	(0.088)
Oppose refugees			0.149	0.182	0.522***	0.492***	0.020	0.043
			(0.206)	(0.209)	(0.123)	(0.126)	(0.192)	(0.195)
Female	0.180*	0.189*	0.178	0.203	0.190*	0.194*	0.185*	0.194*
	(0.076)	(0.078)	(0.140)	(0.142)	(0.091)	(0.093)	(0.076)	(0.078)
Age 30-39	0.137	0.125	−0.174	−0.114	0.248	0.214	0.113	0.105
	(0.131)	(0.133)	(0.242)	(0.244)	(0.158)	(0.160)	(0.132)	(0.134)
Age 40-49	0.437**	0.435**	0.527*	0.587*	0.413*	0.379*	0.444**	0.443**
	(0.141)	(0.144)	(0.261)	(0.264)	(0.169)	(0.174)	(0.142)	(0.145)
Age 50-64	0.447***	0.481***	0.243	0.295	0.546***	0.573***	0.452***	0.485***
	(0.118)	(0.120)	(0.217)	(0.220)	(0.143)	(0.145)	(0.119)	(0.121)
Age 65+	0.500***	0.546***	0.405	0.438	0.545***	0.597***	0.498***	0.544***
	(0.123)	(0.125)	(0.229)	(0.233)	(0.147)	(0.150)	(0.123)	(0.126)
College	0.054	0.053	0.104	0.079	0.023	0.027	0.053	0.050
	(0.123)	(0.125)	(0.223)	(0.226)	(0.150)	(0.153)	(0.124)	(0.126)
University degree	−0.062	−0.045	0.073	0.089	−0.054	−0.040	−0.012	0.003
	(0.109)	(0.110)	(0.196)	(0.198)	(0.133)	(0.136)	(0.110)	(0.111)
Francophone	−0.496***	−0.516***	−0.219	−0.244	−0.713***	−0.739***	−0.513***	−0.536***
	(0.144)	(0.148)	(0.249)	(0.251)	(0.181)	(0.187)	(0.145)	(0.149)
Other language	−0.377**	−0.409***	−0.517*	−0.525*	−0.336*	−0.376*	−0.387**	−0.422***
	(0.122)	(0.124)	(0.226)	(0.227)	(0.147)	(0.151)	(0.123)	(0.125)
Ontario	−0.145	−0.100	0.025	0.074	−0.227	−0.182	−0.165	−0.119
	(0.155)	(0.159)	(0.300)	(0.303)	(0.183)	(0.188)	(0.156)	(0.159)
Quebec	−1.383***	−1.293***	−1.376***	−1.300***	−1.350***	−1.244***	−1.404***	−1.313***
	(0.187)	(0.192)	(0.346)	(0.348)	(0.226)	(0.233)	(0.188)	(0.193)
West	−0.129	−0.106	0.161	0.184	−0.253	−0.228	−0.145	−0.122
	(0.156)	(0.160)	(0.304)	(0.308)	(0.184)	(0.189)	(0.157)	(0.161)
Political ideology	−0.050**	−0.049**	−0.126***	−0.125***	−0.055**	−0.053*	−0.077***	−0.075***
	(0.016)	(0.016)	(0.034)	(0.034)	(0.021)	(0.021)	(0.018)	(0.018)
Oppose refugees × Paris attacks							0.558*	0.507*
							(0.218)	(0.222)
Intercept	0.001	−0.065	0.149	0.055	0.115	0.067	0.102	0.033
	(0.203)	(0.207)	(0.370)	(0.373)	(0.233)	(0.239)	(0.206)	(0.210)
Respondents who responded within a day of receiving survey		✓		✓		✓		✓
N	3,551	3,386	1,134	1,099	2,408	2,278	3,542	3,377

Standard errors in parentheses. *p < .05; **p < .01; ***p < .001

C. Anxiety index results including anger indicator

Although we excluded 'anger' as a component of the anxiety index, it is useful to examine whether its inclusion would affect the results. It does not. As we show in Table A7, the effect of the attacks on anxiety is effectively equivalent whether the 'anger' indicator is excluded from or included in the anxiety index. Furthermore, the Cronbach's α for the anxiety index including and excluding 'anger' are equivalent ($\alpha_{\text{w/ anger}} = 0.93$, $\alpha_{\text{w/o anger}} = 0.93$). Lastly, as the regression model in the third column of Table A7 shows, the effect of the attacks on reported levels of anger about the presence of Syrian refugees (i.e. not as part of the index) is substantively equivalent to results from the regression results in which it is included as part of the anxiety index.

D. Causal mechanisms analysis

In the article, we focus on the direct effects of the Paris terrorist attacks on perceptions of threat from and emotions toward Syrian refugees. However, as we note at the end of the section "Emotions and attitudes toward refugees and resettlement," such threats and emotions are also expected to be mechanisms through which the attacks affected support for Syrian refugee resettlement. To investigate this, we examine threat and emotion as mechanisms through which the attacks caused a decrease in support for resettlement. To do so, we turn to recent advancements in methods for the study of causal mechanisms (Imai et al., 2011; Imai, Tingley, and Yamamoto, 2013).

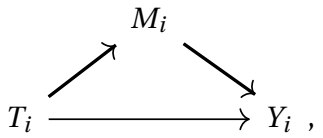
Definition and estimation. A causal mechanism represents the process through which a causal variable affects an outcome (Imai et al., 2011, 765). The basic set up for a single

Table A7: Comparison of OLS regression results including and excluding anger indicator in anxiety index

	Anxiety index (excl. anger) (1)	Anxiety index (incl. anger) (2)	Anger (not in index) (3)
Paris attacks	0.271***	0.265***	0.193***
	(0.055)	(0.054)	(0.054)
Female	0.062	0.050	−0.003
	(0.053)	(0.053)	(0.053)
Age 30-39	0.089	0.089	0.056
	(0.088)	(0.088)	(0.088)
Age 40-49	−0.004	−0.003	−0.018
	(0.095)	(0.095)	(0.095)
Age 50-64	0.035	0.030	−0.005
	(0.081)	(0.081)	(0.081)
Age 65+	0.105	0.107	0.087
	(0.083)	(0.083)	(0.083)
College	0.181*	0.176*	0.122
	(0.086)	(0.086)	(0.086)
University degree	−0.178*	−0.189*	−0.176*
	(0.075)	(0.075)	(0.075)
Francophone	0.138	0.120	0.012
	(0.093)	(0.093)	(0.093)
Other language	0.034	0.056	0.124
	(0.085)	(0.085)	(0.084)
Ontario	0.223	0.221	0.164
	(0.121)	(0.120)	(0.121)
Quebec	0.115	0.120	0.118
	(0.136)	(0.136)	(0.136)
West	0.163	0.169	0.155
	(0.122)	(0.121)	(0.122)
Political ideology	0.197***	0.199***	0.165***
	(0.011)	(0.011)	(0.011)
Intercept	−0.989***	−0.985***	−0.773***
	(0.148)	(0.148)	(0.148)
N	1,692	1,688	1,702

Survey data used in each regression are those collected within 2 days before and after the attacks. *p < .05; **p < .01; ***p < .001

mechanism can be diagrammed as follows:



where T_i denotes treatment status, M_i denotes the mechanism of interest, and Y_i denotes the outcome. The goal of causal mechanisms analysis is to decompose the effect of a treatment into the effect that operates through a causal mediator of interest ($T_i \longrightarrow M_i \longrightarrow Y_i$) and that which operates through other channels ($T_i \longrightarrow Y_i$).[4]

To calculate the average causal mediation effect (ACME), we use the two-step procedure proposed by Imai et al. (2011).[5] In the first step, two regression models are fit to the data: first, the mediator is modeled as a function of the treatment and pre-treatment covariates; second, the outcome is modeled as a function of the mediator, treatment, and pre-treatment covariates. In the second step, the fitted models are used to predict support for refugee resettlement, first by using the predicted values of the mediator under the treatment condition, and then under the control condition, holding all other variables constant. To calculate the average causal mediation effect, we then take the average in the difference in these two predicted outcomes.

In the following, we examine anxiety, sympathy, and security and cultural threat as causal mechanisms. Because two independent branches of the survey were used to capture the two sets of mechanisms (threat and emotion), the models are fit to the relevant subset of the sample collected within 2 days of the attacks. First-stage regression models are those presented in Table 1 in the article, and those for the second stage in Table A8. Before examining the

[4]A causal mediation effect can be formally defined, using potential outcomes notation (Rubin, 1974), as follows:

$$\tau_i \equiv Y_i(t, M_i(1)) - Y_i(t, M_i(0)), \tag{A2}$$

where $M_i(t)$ denotes the potential value of the mediator for individual i under treatment status $t \in \{0,1\}$, and $Y_i(t,m)$ denotes the potential value of the outcome when the treatment status and mediator are set to t and m respectively. As Equation A2 indicates, the causal mediation effect represents the difference in the effect of the treatment, holding the value of the treatment constant, and manipulating the value of the mediator as would be realized under conditions $t = 1$ and $t = 0$. For further details, see Imai et al. (2011) and Imai, Tingley, and Yamamoto (2013).

[5]All results provided in this section were generated using the statistical package `mediation` (Tingley et al., 2014).

results, it is important to note that causal mediation analysis relies on a sequential ignorability assumption (see Imai et al., 2011; Imai, Tingley, and Yamamoto, 2013). This assumption requires first, that conditional on pre-treatment covariates, the treatment is independent of the potential outcome and potential mediator. This assumption is satisfied by design if the treatment is randomly assigned as in an experimental or "as-if" natural-experimental research design. Second, the mediator is assumed to be independent of the potential outcome conditional on pre-treatment covariates and observed treatment status. To make this second assumption plausible, the second-stage regression models include covariates for socio-demographics and political ideology. However, because the second of the sequential ignorability assumptions is generally considered to be a strong assumption, we conduct a sensitivity analysis for each causal mediation estimate further below.

Causal mechanism results. Table A9 presents estimates of the effect of the Paris attacks on support for refugee resettlement that operate through each mechanism. As the table shows, the model provides evidence that the Paris attacks decreased support for refugee resettlement by increasing the public's anxiety about the presence of refugees: the attacks are estimated to have caused a 3.1 percentage point decrease (95% CI: -4.4, -1.8)[6] in support for refugee resettlement by increasing anxiety about the presence of refugees. There is little evidence, on the other hand, that the attacks decreased support for refugee resettlement by decreasing sympathy for refugees themselves.

Turning to the threat measures, we find strong evidence that the effect of the attacks on support for refugee resettlement operated through respondents' concerns about security. The Paris attacks are estimated to have caused a 5.9 percentage point decrease (95% CI: -7.6, -4.4) in support for refugee resettlement by increasing the public's concerns over perceptions of the security threat posed by refugees.[7] An important caveat is that although both anxiety and

[6]Confidence intervals are calculated through non-parametric bootstrapping.

[7]Note that this estimate is larger than the estimated (total) average treatment effect of the attacks. This is because the estimate for the direct effect (that not operating through security concerns) is positive, although not significantly so. Changes operating through the security threat channel, in other words, explain the entirety of the effect on support for resettlement.

Table A8: Second-stage causal mechanism regression models

	Support for refugee resettlement			
	Anxiety	**Sympathy**	**Security**	**Culture**
	(1)	(2)	(3)	(4)
Index	−1.495***	1.797***	−1.751***	−2.283***
	(0.061)	(0.072)	(0.061)	(0.075)
Paris attacks	0.112	−0.323**	0.155	−0.141
	(0.110)	(0.112)	(0.105)	(0.108)
Female	0.363***	−0.208	0.280**	−0.004
	(0.109)	(0.111)	(0.102)	(0.105)
Age 30-39	−0.030	−0.005	−0.055	−0.236
	(0.175)	(0.183)	(0.178)	(0.183)
Age 40-49	0.046	−0.364	0.144	0.063
	(0.190)	(0.199)	(0.191)	(0.199)
Age 50-64	0.390*	−0.085	0.180	0.207
	(0.163)	(0.168)	(0.159)	(0.164)
Age 65+	0.324	−0.255	0.180	0.069
	(0.168)	(0.173)	(0.167)	(0.170)
College	−0.163	−0.165	−0.009	−0.093
	(0.168)	(0.171)	(0.160)	(0.165)
University degree	0.398**	0.315*	0.257	0.214
	(0.149)	(0.152)	(0.142)	(0.147)
Francophone	−0.327	−0.370	−0.255	−0.233
	(0.184)	(0.190)	(0.191)	(0.198)
Other language	−0.284	−0.121	−0.419*	−0.393*
	(0.173)	(0.177)	(0.166)	(0.172)
Ontario	−0.687*	−0.555	−0.529*	−0.205
	(0.296)	(0.291)	(0.221)	(0.229)
Quebec	−1.200***	−0.617	−0.913***	−0.491
	(0.319)	(0.317)	(0.258)	(0.267)
West	−0.727*	−0.470	−0.692**	−0.251
	(0.296)	(0.292)	(0.222)	(0.231)
Political ideology	−0.177***	−0.260***	−0.183***	−0.216***
	(0.025)	(0.025)	(0.024)	(0.025)
κ_1	−5.769***	−6.563***	−6.265***	−6.869***
	(0.378)	(0.386)	(0.336)	(0.356)
κ_2	−4.675***	−5.453***	−5.132***	−5.550***
	(0.363)	(0.370)	(0.320)	(0.336)
κ_3	−4.115***	−4.871***	−4.178***	−4.450***
	(0.357)	(0.362)	(0.311)	(0.325)
κ_4	−2.953***	−3.728***	−2.467***	−2.587***
	(0.348)	(0.351)	(0.299)	(0.311)
κ_5	−1.097**	−1.832***	−0.630*	−0.588
	(0.340)	(0.340)	(0.292)	(0.303)
N	1,661	1,661	1,795	1,797

Ordinal regression results where the outcome is support for refugee resettlement. Each model is specified with a set of pre-treatment control variables and the causal mechanism of interest. Survey data used in each regression are those collected within 2 days before and after the attacks. $\boldsymbol{\kappa}$ denote cut-point parameter estimates. $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table A9: Estimates of causal mechanisms

A. Emotion branch

Causal mechanism	ACME	95% CI
Anxiety	-3.1	(-4.4, -1.8)
Sympathy	-0.3	(-1.7, 1.2)
N = 1,828		

B. Threat branch

Causal mechanism	ACME	95% CI
Security threat	-5.9	(-7.6, -4.4)
Cultural threat	-2.7	(-4.2, -1.3)
N = 1,789		

security appear to be substantial mechanisms through which the Paris attacks operated on public attitudes toward refugee resettlement, these mechanisms may be strongly linked within a longer causal chain, whereby terrorism affects security concerns which in turn affects anxiety or vice versa. However, because the survey was not designed to untangle this relationship and used two independent branches to measure emotion and threat, we cannot investigate this more complex relationship further. Untangling this and other similar relationships is a difficult, but important empirical question that we leave for future research.

Finally, we estimate the average causal mediation effect of the Paris attacks through cultural threat perceptions. To do so, we use a model that relaxes the assumption of causal independence between security and cultural threat because it is unlikely that perceptions of cultural threat are causally independent of the effect that the attacks have on security concerns. We therefore posit a model whereby the Paris attacks cause an increase in perceptions of security threat, which in turn affect perceptions of cultural threat. To fit this model, we use the estimation procedure proposed by Imai and Yamamoto (2013) that allows one to account for post-treatment confounding. Using this model, the Paris attacks are estimated to have caused a 2.7 percentage point decrease (95% CI: -4.2, -1.3) in support for refugee resettlement

by increasing the public's perceptions of refugees as a threat to national culture.[8]

Sensitivity analysis. As noted above, the validity of estimates of average causal mediation effects relies on the sequential ignorability assumption (see Imai, Keele, and Yamamoto, 2010; Imai et al., 2011). This assumption states that (1) the potential outcomes of the mediator and of the outcome are independent of treatment status conditional on pre-treatment covariates, and (2) the potential outcome of the outcome is independent of the observed mediator, conditional on treatment assignment and pre-treatment covariates.[9]

Although the first assumption holds when treatment assignment is randomized (or is plausibly assigned as-if randomly as in a natural experiment), the second assumption cannot be tested with observed data. Imai, Keele, and Yamamoto (2010, 60-62) therefore propose a sensitivity analysis procedure to quantify the robustness of average causal mediation effect estimates to the presence of an unobserved pre-treatment confounder. The procedure allows researchers to test the degree to which the sequential ignorability assumption must be violated before the average causal mechanism effect estimate would be zero.

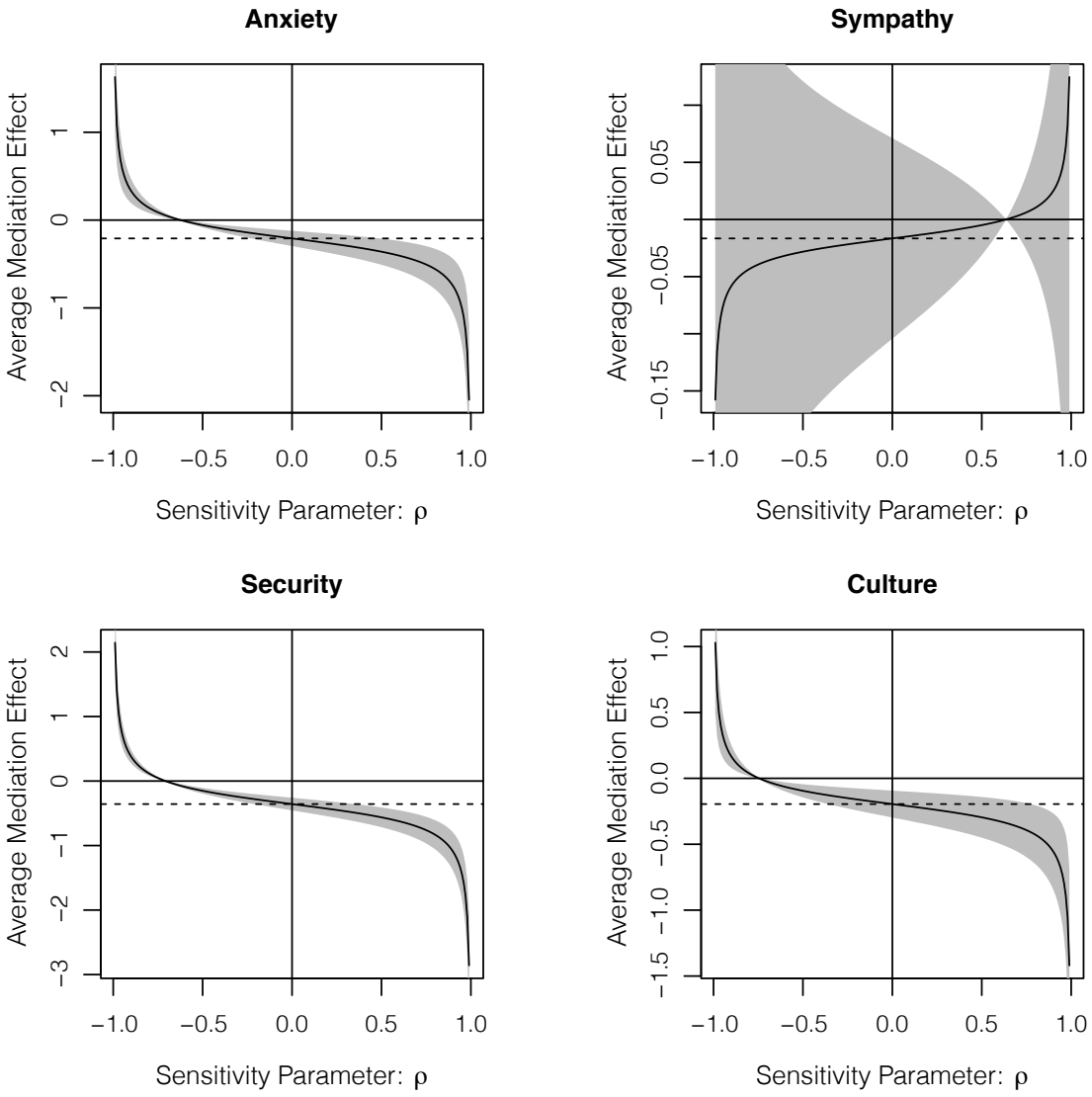
To examine the robustness of our causal mechanism results to an unobserved pre-treatment confounder, we apply this sensitivity analysis procedure to each causal mechanism examined in the article.[10] Results from this procedure are shown in Figure A1. Each panel presents estimates of the average casual mediation effect in the presence of a confounder that is correlated with the mediator at levels of correlation ρ from -1 to 1. As the figures shows, the average causal mediation effect estimates for anxiety, security, and culture are each robust to the presence of a strong confounder. In each case, the effects are reversed only when an unobserved confounder is very highly correlated with each mediator of interest: $\rho^{(anxiety)} = -0.62$, $\rho^{(security)} = -0.71$, and $\rho^{(culture)} = -0.75$. In sum, each of the average causal mechanism effect estimates appears highly robust to the presence of unobserved pre-treatment confounders.

[8] If we assume, by contrast, that perceptions of security threat is not a post-treatment confounder, the estimated average causal mediation effect of cultural threat is -3.4 (95% CI: -5.2, -1.7) percentage points.

[9] Note that these conditional independence assumptions rely on there not being any *post*-treatment confounders.

[10] Sensitivity analysis results were generated using the library `mediation` (Tingley et al., 2014) in ℝ (R Core Team, 2017).

Figure A1: Sensitivity analysis for sequential ignorability assumption



E. Economic threat

For completeness, we examine the effect of the attacks on perceptions of Syrian refugees as an economic threat. Theoretically, it is unlikely that large-scale terrorist attacks would provide a meaningful signal to the public concerning the threat to the domestic economy posed by refugee resettlement. Nevertheless, it is possible that terrorism may cause an increase in negative attitudes toward refugees generally, and thus that the attacks may also affect

evaluations of seemingly unrelated threats concerning refugees, regardless of threat type. To investigate this, we examine the economic threat index concerning Syrian refugee resettlement, and, for comparison, two retrospective indicators of economic evaluations unrelated to refugee resettlement, which should not be affected by the attacks otherwise. The latter indicators are questions regarding (1) evaluations of respondents' personal financial circumstances over the past year (worse, same, better), and (2) evaluations of the national economy in the past year (worse, same, better) (for complete question text, see section F.).

Data for the economic threat index are presented graphically in Figure A2 and those for the retrospective national economic and personal financial evaluations in Figure A3. As Figure A2 shows, there appears to be a slight increase in perceptions of Syrian refugee resettlement as a threat to the economy, although as shown in Table 1 of the article, this difference is not statistically significant. The absence of statistical significance does not, of course, mean that the attacks did not affect perceptions of refugees as an economic threat. However, the estimated magnitude of this effect in standardized units ($\beta = 0.08$) is, as one would expect, substantially smaller than that of anxiety ($\beta = 0.27$), and of security ($\beta = 0.39$) and cultural threat ($\beta = 0.19$) (cf. Figures 1 and 2 in article). Similar to the other indexes, the economic threat index appears to decline, albeit slightly, to the pre-attack baseline within roughly a week after the attacks.

By comparison, the two retrospective economic indicators show no meaningful difference between the immediate pre- and post-attack period (p = 0.74; p = 0.13) and demonstrate no clear pattern that would be consistent with an effect that decays in response to the attacks similar to the indicators theoretically related to Syrian refugee resettlement. Although there is more variability in retrospective evaluations of the economy in the weeks after the attacks, we can expect this as a response to economic or related news as a basis for comparison to the previous year's economy.

Figure A2: Economic threat index across time

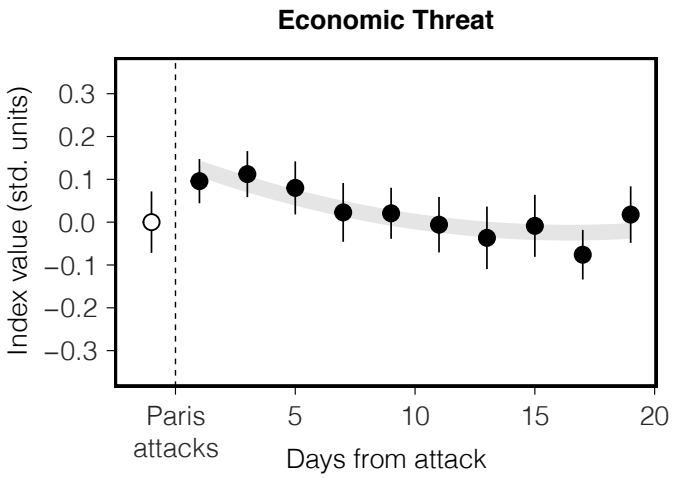
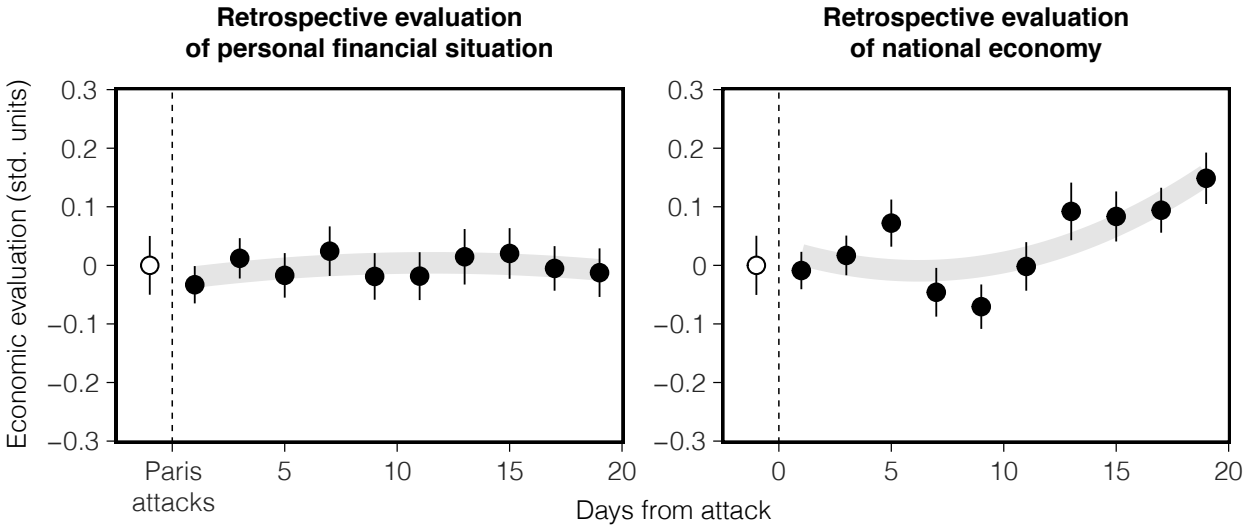


Figure A3: Retrospective economic evaluations across time



F. Survey question text

Below we present the wording for each question analyzed in the article.

Received by all respondents:

`The Canadian government is currently considering whether to admit more refugees from Syria. Many of these refugees are [(blank), Muslims,`

Christians] fleeing from the civil war.

Received by respondents in the threat branch of the survey (security, values/integration, and economic threat):

Imagine that these [(blank), Muslim, Christian] refugees are permitted to settle in your own community. To what extent would you agree or disagree with the following:

- Their presence would be economically costly
- They would increase competition for jobs
- They would help grow the economy

Answer categories:

Strong disagree, Somewhat disagree, Slightly disagree, Slightly agree, Somewhat agree, Strongly agree

Imagine that these [(blank), Muslim, Christian] refugees are permitted to settle in your own community. To what extent would you agree or disagree with the following:

- Their values would conflict with those of Canadians
- They would fit well into Canadian society
- They would enrich our culture

Answer categories:

Strong disagree, Somewhat disagree, Slightly disagree, Slightly agree, Somewhat agree, Strongly agree

Imagine that these [(blank), Muslim, Christian] refugees are permitted to settle in your own community. To what extent would you agree or disagree with the following:

- Their presence would pose a threat to national security
- Their presence would lead me to fear for my safety
- Some would have links to terrorism

Answer categories:

Strong disagree, Somewhat disagree, Slightly disagree, Slightly agree, Somewhat agree, Strongly agree

Received by respondents in the emotion branch of the survey (anxiety and sympathy):

Imagine now that these [(blank), Muslim, Christian] refugees are permitted to settle in your own community. To what degree do you feel the following toward them:

- Sympathy
- Indifference
- Compassion
- Sadness
- Distress

Answer categories:

0(None at all), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10(A great deal)

When you think about these [(blank), Muslim, Christian] refugees settling in your community, to what degree do you feel the following:

- Anxiety
- Pride
- Upset
- Worry
- Anger
- Hope
- Fear

Answer categories:

0(None at all), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10(A great deal)

Received by all respondents:

If it were up to you, would you agree or disagree that these [(blank), Muslim, Christian] refugees should be permitted to settle in [Canada / your own community]?

Answer categories:

Strong disagree, Somewhat disagree, Slightly disagree, Slightly agree, Somewhat agree, Strongly agree

Would you consider contacting your Member of Parliament regarding this issue?

Answer categories:

No, Yes

If these [(blank), Muslim, Christian] refugees were permitted to settle in your own community, would you be willing to donate to a program that would help them integrate?

Answer categories:

No, Yes

Questions regarding national economy and personal financial circumstances

Over the past 12 months, do you think Canada's economy has become worse, better, or stayed about the same?

Answer categories:

Worse, Stayed about the same, Better

Over the past 12 months, has your own economic situation and that of your family become better, worse, or stayed about the same?

Answer categories:

Worse, Stayed about the same, Better

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