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toward immigrants after terrorist attacks: The case
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ABSTRACT

Growing research focusing on the psychological reactions to terrorism by citizens finds that terrorist attacks perpetrated by individuals belonging to Muslim minorities increase negative attitudes towards those perceived as the "outgroup", and especially immigrants and refugees. However, few attempts have been made so far to assess the short-term impact of these attacks. While we know that immediate emotional reactions are deemed to cause stereotyping effects in the days following traumatic events (as a result of coping mechanisms by individuals reacting to a perceived threat), we need more research to assess how long this effect endures. By means of a quasi-experimental before-after design based on the Manchester bombing of May 22, 2017, we ask whether the stereotyping effect occurs, and whether it fades away after a few days. We present evidence consistent with the stereotyping effect hypothesis, but we also show the role of temporality: while the effect is strong and significant in the first 3 days after the attacks, it disappears after 4-7 days. These findings suggest that the emotional, immediate reactions that trigger stereotyping processes right after a terrorist attack are reabsorbed after a few days as a result of rational processing.

Author Keywords

terrorism, quasi-experiments, Manchester bombing, outgroup, anti-immigrant attitudes, UK

INTRODUCTION

During the last few years, several terrorist attacks targeting civilians have been perpetrated across Europe, mainly by people with a foreign ancestry, claiming affiliation to the Islamic terrorist organization, the Islamic State of Iraq and the Levant (ISIS). Moreover, the refugee crisis that sparked in Europe in 2011 resulted in the intensification of xenophobic attitudes toward people with different ethnic background, polarizing positions towards the outgroup by the natives (see Castanho Silva, 2018). The intensification of these attacks led the academic research to focus on psychological reactions that terrorism produces among citizens, and especially the stereotyping effect towards outgroups (Vasilopoulos, Marcus, and

Foucault, 2017). According to the psychological literature, terrorism activates mechanisms of stereotyping towards those perceived as members of the outgroup, resulting in the attribution of the blame of a crime committed by an individual belonging to a minority group to the whole group (Bar-Tal and Labin, 2001). As a result, scholars find that terrorist attacks can have a significant impact on public opinion towards outgroups, and in particular towards immigrants (Legewie, 2013) and refugees (Castanho Silva, 2018).

Despite these important contributions, research on the short-term effects of terrorism on attitude change is still underdeveloped. We know that emotional factors are deemed to cause stereotyping effects in the days following traumatic events, as a result of coping mechanisms by individuals reacting to a perceived threat (Vasilopoulos, Marcus, and Foucault, 2017). However, we need more research to assess how long this effect endures. The temporal horizon taken into account in previous works goes from a few dozens of hours after the attacks (Castanho Silva, 2018; Echebarria-Echabe and Fernandez-Guede, 2006) to a week after the facts (see, for instance, Legewie, 2013), but none of these works distinguishes between immediate and non-immediate reactions to the attacks, even though testing this hypothesis was feasible, at least in principle (see for instance Legewie, 2013; Castanho Silva, 2018).

Because terrorist attacks are, by nature, unpredictable, it is not possible to design in advance experiments able to measure the direct impact of these events. Therefore, research has rarely been able to measure causal effects of terrorism on attitude change. One way to overcome this pitfall is to rely on datasets in which responses were collected in the proximity of an attack. These types of dataset offer, indeed, the opportunity to develop a quasi-experiment design when fieldwork was conducted partly right before the attack and partly after it (see also Legewie, 2013; Castanho Silva, 2018). To this purpose our analysis relies on the Eurobarometer 87.3 survey data, as it offers the opportunity to develop quasi-experimental design and observe attitudes of comparable individuals towards immigrants and refugees before and after the 2017 Manchester bombing in the UK. The event took place on May 22, 2017, and it was perpetrated by 22-years-old British citizen with Libyan ancestry. The suicide bombing occurred in the Manchester arena, right after the concert of Ariana Grande's, a famous teen pop star, killing 22 (10 of them under 20) and injuring more than 800 people. By interviewing respondents from May 20 to May 29, Eurobarometer data allow us to evaluate the before-after effect that the attack exerted on attitudes towards the outgroup (immigrants

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and refugees) and to observe the development of the attitudes up to a week after the attack.

Our results show that the before-after effect of the attack produces an increase in negative attitudes toward immigrants and, to a lesser extent, refugees. It also illustrates that this effect lasts for about three days after the attack, becoming not significant in the after 4 days/1 week after it. We explain these findings by suggesting that that stereotyping processes are emotional, immediate reactions to traumatic events and that they decrease in intensity after a few days, as a result of a rational processing by the citizenry.

BACKGROUND: TERRORISM AND SHORT-TERM ATTITUDE CHANGES

In the last 15 years, scholars have collected ample evidence of the impact of terrorist attacks on individuals behaviors and attitudes. Studies of the psychological aftermath of 9/11 attacks in New York and Washington showed quite clearly that anxiety, fear, and depression rose after these traumatic events (Bonanno et al., 2006). Similar evidence was found in other national contexts, such as after multiple suicide bombings perpetuated in Israel (Bar-Tal and Sharvit, 2004), the 2004 bombing in Madrid (Miguel-Tobal et al., 2006), the 2005 strikes in London (Rubin et al., 2005), as well as the 2015 Charlie Hebdo and Bataclan attacks in Paris (Castanho-Silva, 2018). These studies suggest that emotional reactions to traumatic events can trigger a set of attitudes and behaviors, such as authoritarianism (Jost et al., 2003; Jost et al., 2007), antiterrorism policy preferences (Huddy et al., 2005), and modifications in vote intentions (Montalvo, 2010; Tena-Snchez, 2017). Considering the intensification of terrorist attacks, together with the outbreak of the refugee crisis in Europe, there is increasing interest among scholars in the ways in which emotional responses unleashed by terrorist attacks have an effect on Europeans attitudes towards immigrants (Legewie, 2013) and refugees (Castanho Silva, 2018): anger, fear, and anxiety, indeed, are able to trigger xenophobic reactions, with an increase of negative attitudes towards the perceived outgroup.

According to the psychological literature, stereotyping mechanisms help to explain the relationship between emotional reactions and xenophobia. Bodenhausen (1993, 18), for instance, points that physiological changes associated with anger and anxiety may have disruptive effects on performance, leading people to utilize simpler, less resource-demanding strategies. The use of stereotypes in social judgment would constitute one such strategy. Thus, people who find themselves in a stressful and anxious situation can tend to simplify causes and dynamics of traumatic events, relying on coping mechanisms that provide clear and straightforward answers. As a side effect, people employ a simplification of the perpetrators of the attacks, by relying on stereotyping (Wilder, 1993), thus generalizing the source of the threat to everyone resembling the perpetrator.

Immigrants are particularly susceptible to stereotyping, being the most recognizable representation of the perceptions that natives have of the outgroup (Bodenhausen, 1993). Previous literature has shown that the 9/11 attacks affected the levels of tolerance towards minority groups of American citizens

(Skitka, Bauman, and Mullen 2004) and that anti-Arab and anti-Semitic prejudices increased in Spain after the 2004 Madrid attack (Echebarria-Echabe and Fernandez-Guede, 2006). Other contributions find that exposure to terrorism in Israel increased exclusionist attitudes towards the Palestinian citizens of Israel (see Bar-Tal and Labin, 2001; Canetti-Nisim et al., 2009). In a similar vein, anti-immigrant attitudes increased after the Theo van Gogh's murder in The Netherlands in 2004 (Boomgaarden and De Vreese, 2007). Hence, we can argue that Islamic terrorism may be a powerful determinant of stereotyping. As such, we derive our first hypothesis:

H1: Attitudes towards immigrants and refugees become more negative after terrorist attacks

How long do stereotyping processes persist in affecting outgroup evaluations? From a theoretical point of view, we can argue that processes of stereotyping after terrorist attacks are mainly emotional mechanisms that undermine the rational processing of information. According to the literature (Kirschenbaum, 2005; Legewie, 2013), stereotyping represents an adaptive mechanism to cope with anxiety and fear provoked by terrorist attacks, leaving apart usual processes of analysis. In this respect, we can hypothesize that, if a stereotyping mechanism actually unfolds after a terrorist attack, it would fade once the threat is seen as less salient and levels of fear and anxiety come back to usual levels. For this reason, our second hypothesis reads as follows:

H2: Attitudes towards immigrants and refugees become more negative immediately after a terrorist attack and return to pre-attack levels after some time

DATA, METHODS, AND MODELS

To test our hypotheses, we use Eurobarometer 87.3 data. Eurobarometer is a cross-national EU-funded program that produces survey-based representative samples in all of the 28 member states of the European Union. Standard Eurobarometer employs multi-stage random sampling procedure. Interviews are conducted by using the CAPI (Computer Assisted Personal Interview) mode. Being the attack perpetrated in the United Kingdom, we selected only this countrys national sample (1,042 cases, see Appendix 2 for descriptive statistics of the data). This dataset is particularly useful for our purpose since it contains variables on individuals attitudes towards immigrants and refugees and was fielded right before and right after the Manchester bombing took place.

The experimental design

This study is based on a before-after natural experiment. In social science, natural experiments allow to examine the effect of exogenous shocks (usually real-world events) on perceptions, opinions, and preferences. With reference to our dataset, fieldwork of the survey was conducted between May 20 and 29, 2017. The Manchester attack occurred on the night of May 22 at about 10.30 p.m. Thus, the dataset allows us to

divide our sample in two main groups: the control group - responses between May 20 and 22 - and the treatment group - responses between May 23 and 29 - (for a similar design see Boomgaarden and de Vreese, 2007; Legewie, 2013; Cas-tanho Silva, 2018) to test our first hypothesis, namely, the impact of the terrorist event on attitudes towards immigrants and refugees. In the first parametrization of the models, respondents are subdivided as in (1).

$$T_{1i} = \begin{cases} 0 & \text{if } i \text{ is interviewed before the attack} \\ 1 & \text{if } i \text{ is interviewed after the attack} \end{cases} \quad (1)$$

Hypothesis 2 argues that stereotyping loses its strength after some time from the attack. We can test this formally by subdividing the treatment effect according to how much time has passed since the Manchester bombing. Considering that the fieldwork lasted a week after the attack, we have the possibility to split the treatment group in (1) in two parts. The resulting treatment variable is a trichotomous variable, as in (2).

$$T_{2i} = \begin{cases} 0 & \text{if } i \text{ is interv. before the attack} \\ 1 & \text{if } i \text{ is interv. within 3 days after the attack} \\ 2 & \text{if } i \text{ is interv. from 4 to 7 days after the attack} \end{cases} \quad (2)$$

This subdivision has been arranged in order to deal with a variable with time-spans and sample size as similar as possible (see below).

The main assumption of our experimental design is that no other individual or collective characteristic in the survey is correlated with the treatment - ignorability assumption¹. This requires that every individual have, a priori, the same probability of being interviewed before or after the treatments. In this way, the treatment assignment is actually randomized. In a usual fieldwork, this assumption could fail: for instance, younger people might be more likely to being reached immediately (becoming over-represented in the pre-treatment group) and older citizens might be more difficult to be interviewed (leading to higher propensity of finding older people in the post-attack group). It is possible to address this problem by controlling for those covariates that are detected to influence the levels of reachability of respondents (see Legewie, 2013; Ares and Hernandez, 2017). Hence, to test the ignorability assumption we performed an imbalance analysis (see Rubin, 2001; Legewie, 2013) to estimate whether a number of individual and regional covariates changed significantly between the control and the treatment groups, namely,

¹A further assumption of the before-after experimental designs, the temporal stability assumption, requires that people change their characteristics and attitudes in the time-span considered only because of the exogenous event. In our case, the fieldwork of the survey that we employ is compressed in 10 days, and the exogenous event is approximately in the middle of this short time-span. Subjects have thus at their disposal an extremely reduced amount of time to change some of their attitudinal characteristics for any other exogenous event than the Manchester bombing.

if subjects were sufficiently similar on a number of characteristics before and after the exogenous shock. The analysis revealed that the differences were not significant, allowing to consider the treatments as an experimental design (See Appendix 1 for the detailed imbalance analysis)².

Variables and models

This analysis takes into account two different dependent variables, namely, citizens attitudes towards non-European immigrants and refugees. Eurobarometer data contains two questions asking respondents about their feelings towards immigrants from outside the EU (very negative, fairly negative, fairly positive, or very positive) and whether they agree that their country should help refugees (with answer categories being Totally disagree, Tend to disagree, Tend to agree, Totally agree). Considering that we have hypothesized that emotions triggered by the Manchester bombing might play a role in shaping Britons attitudes towards immigrants, these items are particularly appropriate for our purposes.

The first treatment variable takes value 0 for respondents who were interviewed in the UK before the Manchester attack (namely, before the night of May 22) and 1 for respondents interviewed after the attack (the control counts 429 cases and the treatment 613). The second treatment variable distinguishes those exposed within three days after the bombing from those who have been interviewed after four days from the attack. In this case, the control still counts 429 cases, the first treatment 374 and the second 239. The average causal effect of the exogenous event is estimated with 4 ordered logit regression models. The first set of models is represented in the following equations:

$$\text{logit}[\text{pr}(Noeu_{ij} > s)] = \alpha_{ij} + \beta_1 T_{1ij} \quad (3)$$

$$\text{logit}[\text{pr}(Refu_{ij} > s)] = \alpha_{ij} + \beta_1 T_{1ij} \quad (4)$$

In (3) and (4) T_{1ij} is the first treatment, while s categories are indicated by $Noeu_{ij}$ and $Refu_{ij}$ (the two ordinal dependent variables). The subscript i indexes the responses and j the individuals.

The second set of models estimates average causal effects in a time interval between the first and the third day, and then between the fourth and seventh day after the attack. Thus, the second set of models is represented in the following equations:

$$\text{logit}[\text{pr}(Noeu_{ij} > s)] = \alpha_{ij} + \beta_1 T_{21ij} + \beta_2 T_{22ij} \quad (5)$$

²As an additional evaluation of the quasi-experimental nature of the data, we tested whether terrorism became a salient issue after the Manchester bombing (in the Eurobarometer questionnaire it was asked whether a certain number of issues including terrorism were important at the moment of the interview). After the Manchester attack, terrorism was 25 percentage points more salient than before the attack (rising from 16% to 44%), suggesting that the event was hugely perceived by the public opinion.

| Dep. Var. | Model 1 | | Model 2 | | Model 4 | | Model 4 | |
|-------------------------------|-----------------|----------|-----------------|----------|-----------------|----------|-----------------|----------|
| | Non-EU migrants | Refugees | Non-EU migrants | Refugees | Non-EU migrants | Refugees | Non-EU migrants | Refugees |
| | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. | Coef. | S.E. |
| Treatment 1 (ref. Pre-attack) | | | | | | | | |
| Post-attack | -0.25** | (0.12) | -0.09 | (0.12) | | | | |
| Treatment 2 (ref. Pre-attack) | | | | | | | | |
| Post-attack ($t=3$ days) | | | | | -0.26* | (0.14) | -0.28** | (0.14) |
| Post-attack (4-7 days) | | | | | -0.22 | (0.16) | 0.21 | (0.16) |
| Thresholds | | | | | | | | |
| 1 | -1.82** | (0.12) | -3.06** | (0.17) | -1.82** | (0.12) | -3.08** | (0.17) |
| 2 | -0.33** | (0.10) | -1.76** | (0.12) | -0.33** | (0.10) | -1.77** | (0.12) |
| 3 | 1.76** | (0.12) | 0.79** | (0.10) | 1.76** | (0.12) | 0.79** | (0.10) |
| Log-likelihood | -1213.0 | | -1049.9 | | -1213.0 | | -1045.7 | |
| Observations | 947 | | 947 | | 947 | | 947 | |

Standard errors in parentheses

** p < 0.05, * p < 0.10

Table 1. Four ordered logistic models to test treatment effects on attitudes towards non-EU immigrants and refugees

$$\text{logit}[\text{pr}(\text{Refu}_{ij} > s)] = \alpha_{ij} + \beta_1 T_{21ij} + \beta_2 T_{22ij} \quad (6)$$

These two models are equivalent equation with respect to (3) and (4) with the difference that the treatment is represented by the variable in (2).

RESULTS

Table 1 shows results for the four models considered. As it is possible to observe in models 1 and 2, the treatment effect is negative for both the model referring to attitudes toward non-European immigrants and for attitudes toward refugees as dependent variable. However, the effect is significant only in the first case. Considering the role of the temporal horizon, models 3 and 4 show a more complex picture: if in the first three days the treatment effect is negative and statistically significant for both models, it remains negative but statistically non-significant when non-European immigrants are considered, and even slightly positive when attitudes towards refugees are taken into account.

Figures 1 and 2 show that the marginal effect for manifesting positive attitudes toward immigrants and refugees for the post-attack sub-sample, with 95% and 90% confidence intervals. Figure 1 reports a decrease in positive attitudes of about 6.1 percentage points for what concerns non-EU immigrants - namely, the post-attack sample is less prone to evaluate positively non-EU immigrants - while the effect is of 1.1 percentage points for what concerns refugees. It is thus possible to say that Hp1 is only partly confirmed. The other two models (Models 3 and 4) in Figure 2 estimate the treatment effects 3 days and from 4 to 7 days after the attack.

Overall, these results support evidence for Hp2: right after the terrorist attack (namely, the first three days after the attacks) we see a significant increase in negative attitudes towards non-EU immigrants and refugees (the former being at the edge of 5% significance, with a p-value=0.053).

Subsequently, both the effects become non-significant. In other words, the decrease in positive attitudes towards non-European immigrants and refugees is consistent with a stereotyping mechanism mainly driven by an immediate emotional shock that the attack elicits, which fades after a few days.

DISCUSSION

An expanding body of research stresses that psychological reactions to terrorist attacks lead to stereotyping and, in turn, to more negative attitudes towards immigrants and refugees, symbolically assimilated to an outgroup. However, with some exceptions (Legewie, 2013; Castanho Silva, 2018), few studies have shown evidence of the short-term stereotyping effects occurring right after these events and even less research exists on whether stereotyping processes after an attack expire after a few days. Employing a before-after quasi-experimental design, we tested whether the stereotyping effect occurred, and whether the effect persisted a week after the 2017 Manchester Arena bombing. To this purpose, we assessed the evolution of the effect of outgroup stereotyping up to 3 days and between 4 to 7 days after the attack.

Our results show that the before-after effect exists, but that the effect is stronger in the immediate aftermath of a terrorist attack and fades away after the 3rd day the event occurred, leading to a non-significant figure between the 4th and the 7th day. The separate analysis of the two dependent variables employed in the models (attitudes towards non-European immigrants and attitudes towards refugees) clearly illustrates this point. As for attitudes towards non-European immigrants, we observe that while the effect remains negative and relatively strong with respect to the before-attack figure, it becomes non-significant in the second part of the week. This might be a sub-sample size problem (since the first treatment has a larger size than the second one). However, looking at two treatments on attitudes towards refugees we find a clear evidence in the direction of the degradation of the negative

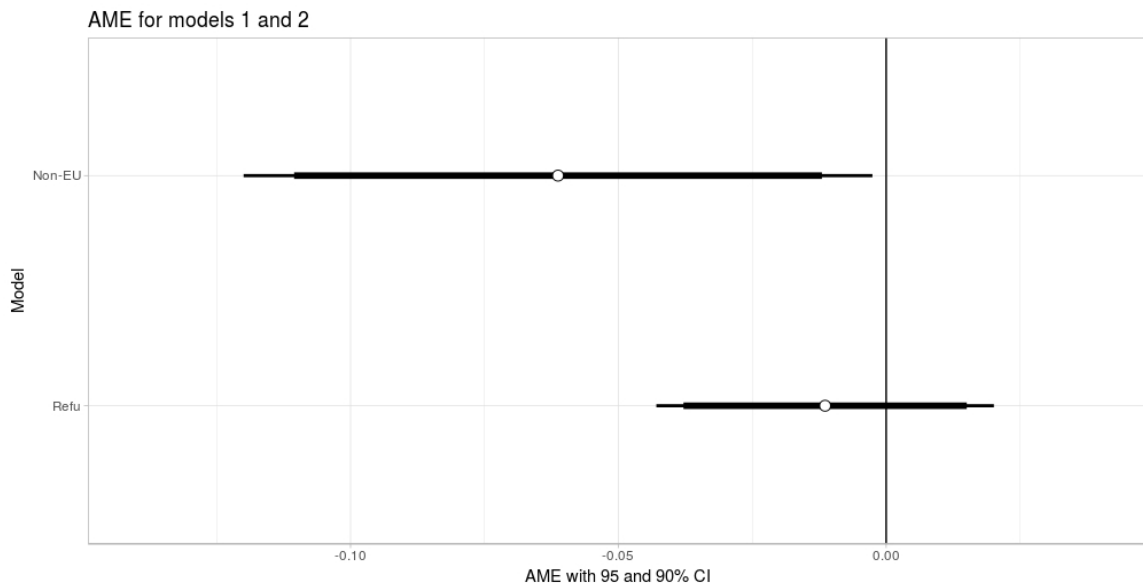


Figure 1. Average Marginal effects to study Manchester attack treatment effects (Models 1 and 2 coefficients).

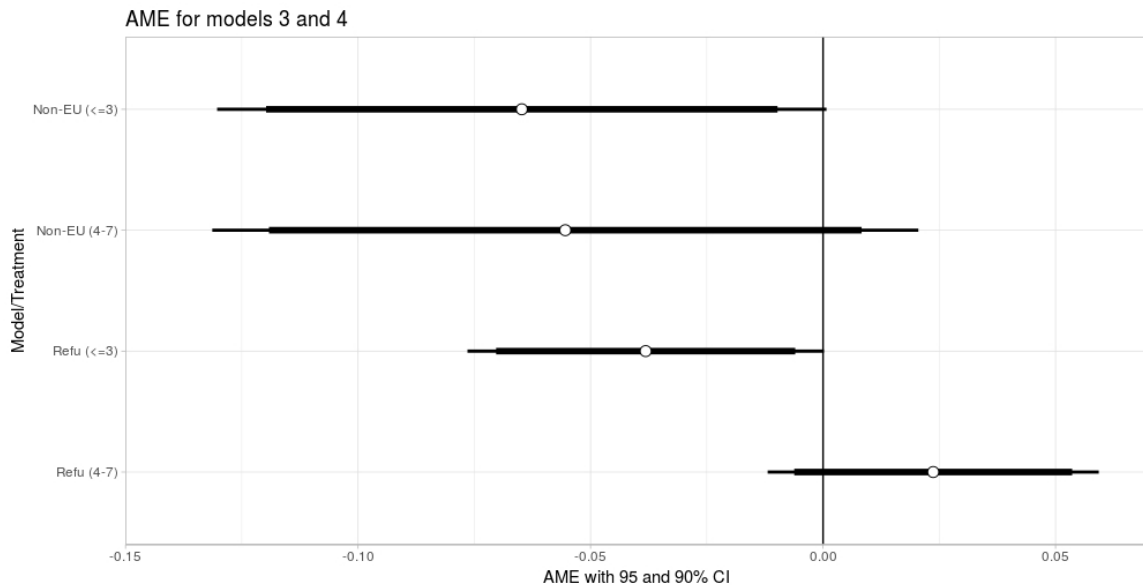


Figure 2. Average Marginal effects to study Manchester attack treatment effects (Models 3 and 4 coefficients).

effect: while the first treatment, the immediate one, is negative and highly significant, the second, the not-so-immediate one, is non-significant and even positive with respect to the pre-attack control.

All things considered, our findings refine previous analysis focusing on the short-term stereotyping effects of terrorist attack (see Echebarria-Echabe and Fernandez-Guede, 2006; Legewie, 2013; Castanho Silva, 2018). They support our argument according to which negative attitudes towards immigrants and refugees are the result of stereotyping mechanisms driven by immediate emotional responses elicited right after the attack. However, the effect may be eroded after a few days, as fear, anger, and anxiety diminish, the threat is perceived as less salient, and rational processing occurs. This

paper, therefore, compels us to make greater efforts in testing the impact of terrorist attacks and particular in problematizing the temporal horizon of stereotyping effects in public opinion research.

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APPENDICES

Appendix 1

As stressed in the paper, to ensure that our before-after design is truly experimental, we have to test whether we can plausibly assume that the treatment is actually exogenous. To test the ignorability assumption, we perform an imbalance analysis (see Rubin, 2001; Legewie, 2013). The imbalance analysis tests whether a number of individual and collective covariates change significantly between the treatments and the control group, namely, if subjects are sufficiently similar on a number of characteristics before and after the exogenous shock.

Figure 3 and 4 presents the imbalance between the control and treatment 1 and 2 (namely, the treatment within 3 days from the attack and the one between 4 and 7 days after the attack), and the control group. The imbalance analysis considers the standardized difference in means (plotted on the x-axis) and the variance ratio (y-axis) of 6 covariates - age, gender, years of education, employment status (Self-employed, Employed, Non-employed), left-right self-placement, size of the community of residence (Rural, Village, Large town). The two imbalance analyses are performed selectively for their conjugate subsamples, namely, the analysis comparing control and treatment 1 counts 710 cases (treatment 2 respondents are expunged from the analysis) and the analysis comparing control and treatment 2 counts 586 cases (expunging treatment 1 respondents).

Considering that the absolute standardized differences in means should not be greater than 0.25, and the variance ratio should be between 0.5 and 2 (represented by the square see Rubin, 2001; Imai, King and Stuart, 2008; Legewie, 2013), none of the covariate presents problematic values. Overall, these results support the ignorability assumption for our data. We can thus be quite confident that assignment to the treatment groups is not affected by the sampling design, and that we can interpret the experimental effects causally.

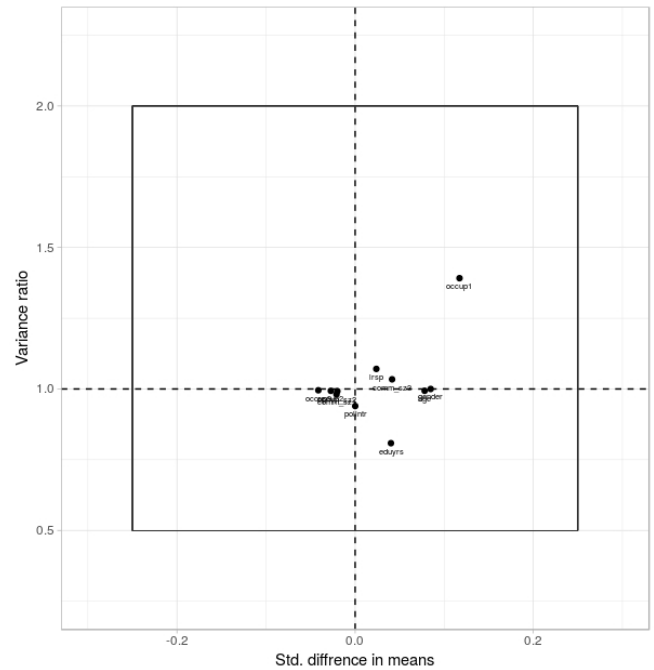


Figure 3. Imbalance between Treatment 1 and control group (left panel) and between Treatment 2 and control group (right panel).

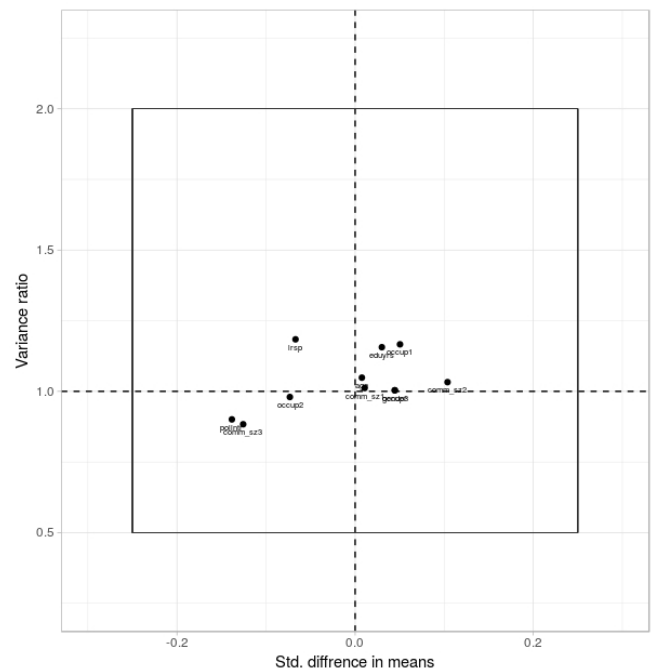


Figure 4. Imbalance between Treatment 2 and control group.

Appendix 2

| Variables | Mean | SD | Min | Max | n |
|--|-------|-------|-----|-----|------|
| <i>Dependent variables</i> | | | | | |
| Attitudes toward Non-EU migrants | 2.51 | 0.91 | 1 | 4 | 947 |
| Attitudes toward refugees | 3.10 | 0.77 | 1 | 4 | 977 |
| <i>Treatments</i> | | | | | |
| Treatment 1 (Pre-post attack) | 0.59 | 0.49 | 0 | 1 | 1042 |
| Treatment 2 - dummy 1 (≤ 3 days from the attack) | 0.41 | 0.49 | 0 | 1 | 1042 |
| Treatment 2 - dummy 2 (4/7 days from the attack) | 0.36 | 0.48 | 0 | 1 | 1042 |
| <i>Imbalance analysis</i> | | | | | |
| Gender | 1.51 | 0.50 | 1 | 2 | 1042 |
| Age | 52.11 | 20.06 | 15 | 98 | 1042 |
| Education Years | 18.44 | 4.41 | 10 | 65 | 1022 |
| Interest in politics | 2.48 | 1.01 | 1 | 4 | 1042 |
| Left-right self-placement | 5.00 | 1.90 | 1 | 10 | 933 |
| Occupation (Self-employed) | 0.08 | 0.28 | 0 | 1 | 1042 |
| Occupation (Employed) | 0.42 | 0.49 | 0 | 1 | 1042 |
| Occupation (Not-employed) | 0.50 | 0.50 | 0 | 1 | 1042 |
| Community size (Rural) | 0.29 | 0.45 | 0 | 1 | 1038 |
| Community size (Village) | 0.41 | 0.49 | 0 | 1 | 1038 |
| Community size (Large town) | 0.31 | 0.46 | 0 | 1 | 1038 |

Table 2. Appendix 2 - Descriptive statistics