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IZA DP No. 16802

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Odelia Heizler (Cohen)
Tel Aviv-Yaffo Academic College and IZA

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Ashkelon Academic College

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IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Does a Tragic Event Affect Different Aspects of Attitudes toward Immigration?

Dramatic events can evoke feelings of compassion, fear, or threat, and can affect public opinion regarding controversial issues. Such an event was the drowning of 3-year-old Alan Kurdi, a Syrian boy whose body washed up on a Turkish shore, and was photographed, producing an iconic image that was seen worldwide. The image evoked empathy and compassion that neuroscience and psychological research associate with a motivation to help. This paper examines the impact of this event on four different aspects of attitudes toward immigration, some of which are more closely linked to pro-social behavior than others. The timing of the European Social Survey in Portugal allowed us to use this tragic event as a natural experiment. Our results show that Kurdi's drowning had a significant effect on emotion-related sentiments, but no such impact was detected on other attitudes. The results suggest that the event did not change the respondents' opinion regarding the possible negative consequences of immigration on the host country's economy, crime level, or culture, nor did it change their perception of the skills required by immigrants. On the other hand, the empathy induced by the tragic event increased their willingness to have a less restrictive immigration policy and their openness to having close social relationships with immigrants.

JEL Classification: F22, J15

Keywords: European Social Survey, anti-immigration attitudes, natural experiment, social distance, threat perceptions

Corresponding author:
Odelia Heizler (Cohen)
Department of Economics and Management
Tel Aviv-Yaffo Academic College
Rabenu Yeruham St 2
Tel Aviv-Yafo
Israel

E-mail: odelia.heizler@gmail.com

1. Introduction

Prominent world events can affect and even alter public opinion. Major events, such as the 9/11 attacks, the terror attacks in Bali and in Paris, and the 2008 economic crisis, have been used as natural experiments to study their effects on attitudes toward immigrants (see Huddy et al. 2002; Legewie 2013; Kuntz et al. 2017; Ferrín et al. 2020[1]). Some of those studies focused on the psychological effects on the respondents, their feeling threatened or afraid, whereas others studied the change in opinions regarding governmental migration policy.

The impact of a non-terror-related tragic event involving immigrants as victims has also been investigated. Heizler and Israeli (2021) and Sohlberg et al. (2019) examined the effect of the death of Alan Kurdi, a 3-year-old Syrian boy who drowned tragically in the Aegean Sea in September 2015, and whose picture—of a lifeless body washed up on shore—became an iconic image (Lenette and Miskovic 2018). Those articles, as well as others that have used prominent events as natural experiments, focused only on attitudes denoted by a single question or on one aspect of attitudes toward immigration. Thus, the current paper contributes to the existing literature as it analyzes the effect of a tragic event on various aspects of public opinion: some that are more associated with feelings and emotions than others. A tragic event undoubtedly raises empathy and compassion, emotions that neuroscience and psychological research relate to pro-social behavior and motivation to help (e.g., Bloom 2017; Singer and Klimecki 2014; Goetz et al. 2010). Consequently, the current research enables to distinguish between attitudes that are more emotion-affected and aspects of attitudes less affected by feelings, perhaps because they involve more cognitive facets, and thus displays the limitations of compassion on public opinion.

Our study seeks to find out whether a tragic event can affect different aspects of attitudes toward immigrants. Four aspects of attitudes were inspected: opposition to immigrants' admission, realistic and symbolic threat, criteria for immigrants' admission, and social distance. A natural experimental design was employed, using the tragic drowning of Alan Kurdi as an exogenous intervention. More explicitly, we used the fact that the drowning coincided with the interview period of the European Social Survey (ESS) in Portugal, and defined the respondents

[1] The articles cited here use the terms "natural experiment" and "quasi-experiment" alternately, without making a distinction between them. However, following Remler and Van Ryzin (2015), we believe that the phrase "natural experiment" is the appropriate term, and we use it throughout the paper.

interviewed before it as the control group, while those interviewed after the drowning served as the treatment group. To support the findings, several robustness checks were done. We tested whether the control and treatment groups were balanced in their observable characteristics so as to rule out selection bias. Additionally, two "placebo" simulations were added, the first tested the effect of the drowning on a moral question that should not, in principle, be affected by the event, following De Poli et al. (2017). In the second simulation, a fictitious event was taken, testing whether it influenced the different aspects of attitudes, to rule out the possibility that changes in attitudes found after Alan Kurdi's death were a result of a mere temporal variation in the sample.

The results indicate that the first aspect, which inspects the willingness to allow more immigrants into the country, and which may relate to a greater willingness to help, was found to be influenced by the drowning (a result already reported in Heizler and Israeli 2021). However, we did not find a significant impact of the drowning on the next two aspects, which consider the consequences of immigration on the host country and the skills that immigrants are expected to have, arguably because they are of a different, more cognitive nature, which may be less affected by emotions. The fourth aspect, social distance, relates to respondents' personal preferences with respect to interactions with immigrants in the professional and private domains. The objection to such interactions was significantly reduced, maybe as a result of empathy, the sharing the others' (immigrants') feelings, which reduces distance. On the whole, this article sheds light on various possible effects of tragic events on attitudinal aspects motivated by different reasoning processes and differentiates between attitudes that are more related to emotions and those that are less affected by them.

The paper is organized as follows. Previous research on attitudes toward immigration is presented in Section 2. Section 3 elaborates on the data, the definitions of each attitudinal aspect studied, and the estimation strategy. Section 4 presents the empirical results, Section 5 adds "Placebo" simulations as additional robustness checks, and Section 6 concludes.

2. Previous research

What affects anti-immigration sentiment? A large body of literature has investigated this question, applying diverse perspectives. Some papers have inspected economic determinants, as immigration could create competition for resources (Facchini and Mayda 2012; Gang et al. 2013; Billiet et al. 2014). Labor-market characteristics of the individual, as well as the economic

conditions in the country have been considered. For example, Scheve and Slaughter (2001) and Mayda (2006) found that skilled individuals favored immigration if the natives were more skilled than the immigrants, because in that case immigration reduced the supply of skilled vs. unskilled labor, thus potentially raising the wage for the skilled laborers. Kuntz et al. (2017) used the European Social Survey (ESS) to consider both individual-level subjective perceptions of economic insecurity and objective economic conditions, i.e. the country's unemployment rate. They found that perceived economic insecurity had a significant effect on attitudes toward immigration, whereas objective conditions did not display the same effect.

Studies have also considered the influence of non-economic determinants on attitudes toward immigration, such as cultural concerns or perceptions of symbolic threat (e.g., Dustmann and Preston 2007; Facchini and Mayda 2012). Card et al. (2012) considered the role of economic and compositional concerns (such as the impact of immigration on the country's culture, religion or customs) in forming views about immigration policy. They found that compositional concerns were more important in explaining the variation in attitudes than economic concerns. Ramos et al. (2020) focused on the important role of racism on attitudes toward immigrants, which was found to be mediated by perceptions of symbolic and realistic (i.e., economic) threats.

Though numerous studies have examined local populations' attitudes toward migration and their determinants, only a limited number of studies have analyzed the effect of major events, because it is difficult to accurately measure attitudes before and after unpredictable incidents (see Smiley et al. 2017). Much research has addressed the impact of terror attacks; Hopkins (2010), for example, showed that a month after the 9/11 attacks, American public opinion was more supportive of anti-immigration policies compared to a year prior to the attacks and 6 months after them. Legewie (2013) investigated the impact of the terror attack in Bali in October 2002 on attitudes toward immigration and found considerable cross-national and regional variation in the effect and its temporal duration, an outcome that was supported by an analysis of the 2004 Madrid bombing. The terror attacks in Paris in November 2015 were investigated in Ferrín et al. (2020), who found that they had a significant negative effect on attitudes towards immigrants, especially among educated and left-wing individuals. Moreover, the negative effect was stronger in pro-immigration countries. Conversely, Smiley et al. (2017), who examined the effect of an attack carried out in 2015 by a second-generation immigrant in Copenhagen, revealed that it did not change immigration policy preferences.

The impact of a non-terror-related tragic event involving immigrants as victims has also been investigated. One such event is the drowning of 3-year-old Alan Kurdi. He and his family, along with 12 other immigrants, boarded a small boat in Bodrum, Turkey, in an attempt to reach Greece. On September 2nd 2015, shortly after leaving Bodrum, the boat capsized.[2] Alan Kurdi, his mother, brother, and another two immigrants perished in the accident. The photograph of Alan Kurdi's body, washed ashore on a Turkish beach, made worldwide headlines and became an iconic image. Though the death of Alan Kurdi could not be described as a major world event, it seemed to dramatically change media narratives (Georgiou and Zaborowski 2017). Heizler and Israeli (2021) theorized, following the identifiable victim theory (see, for example, Schelling 1968; Jenni and Loewenstein 1997), that the death of a single victim, identified by personal details and a photograph, raises compassion and empathy and thus may reduce opposition toward immigration. The paper then showed, using the same natural experiment framework used in the present paper, that public opinion, depicted by a variable representing respondents' unwillingness to allow immigrants into the country, reduced significantly after September 2nd. Sohlberg et al. (2019) also investigated the effect of Alan Kurdi's drowning on respondents' willingness to accept refugees into the country, using only a single question. Their results indicated that in September, the image evoked support for a more liberal refugee acceptance policy. However, in October, people viewed the photograph through their left–right ideological orientation. Kurdi's drowning seemed to affect not only attitudes but also behavior: Slovic et al. (2017) circumstantially connected rising donations to the Swedish Red Cross to the publication of Alan Kurdi's photograph. Young volunteers in Oslo and Sheffield interviewed in Prøitz (2018) claimed that the donations of toys and clothes, as well as volunteering, increased as a result of the event.

All these papers (and many others) mentioned that the death of Alan Kurdi raised compassion and empathy and thus resulted in more welcoming attitudes toward immigrants and donation behavior. Though there are many definitions of empathy and related phenomena (for detailed definitions of empathy and related concepts see Klimecki 2019), empathy is generally described as the capacity to share the feelings of others, that is, resonating with someone else's feelings, whether they are positive or negative, but with the explicit knowledge that the other person is the origin of this emotion, while compassion is a complementary social emotion

[2] https://en.wikipedia.org/wiki/Death_of_Alan_Kurdi

elicited by witnessing the suffering of others and is associated with feelings of concern and warmth, linked to the motivation to help (Goetz et al. 2010; Singer and Klimecki, 2014; Preckelet al. 2018). Social neuroscience research has shown that empathizing with someone else's feelings activates networks in the brain that are involved in the firsthand experience of those feelings. For example, experiencing pain and observing the pain of others activates the same distinct areas in the brain (Marsh 2018; Singer and Klimecki 2014). Batson et al. (1997) claimed that feeling empathy for a member of a stigmatized group can improve attitudes toward the group as a whole through a three-stage process: First, people feel concern for the suffering individual. Second, empathizing with the suffering individual leads people to value the welfare of this individual. And third, concern for the welfare of this person is generalized to the group of which this individual is a member. Klimecki (2019) reviewed a large body of research that shows a positive association between empathy and prosocial behavior and that the induction of empathy by confronting participants with the suffering of others motivates altruistic behavior and the transfer of monetary resources in economic interactions.

Following the above literature, we expect that the empathy and compassion yielded by the drowning of Alan Kurdi would increase helping behavior and pro-social attitudes as may be depicted by the willingness to accept more immigrants into the country or to have social connections with them. However, other aspects of attitudes, such as perceptions of economic or cultural threat from the consequences of immigration, as well as required skill criteria for immigrants, may be considered as more cognitive attitudes that involve fewer emotions and thus may not necessarily be affected by the specific case of the drowning.

3. Data and methodology

3.1. Data

To empirically analyze how the different attitudinal aspects were influenced by Kurdi's drowning, we used the seventh round (2014/2015) of the ESS dataset[3]. The ESS is a biennial cross-national survey that has been conducted across Europe since 2002. The survey measures the attitudes, beliefs and behavioral patterns of diverse populations in more than 30 nations. The

[3] The data can be downloaded from the ESS website: http://www.europeansocialsurvey.org/data/

ESS samples are representative of all persons aged 15 and over living in private households in each country, and individuals are selected by strict random probability methods at every stage. To minimize non-response bias, a minimum target response rate of 70% in each country has been outlined. The seventh wave of the ESS contains a special immigration module, gathering respondents' opinions on how immigration is affecting their country, and their views on immigration policy.[4] Most of the questions in the module are a repeat of questions presented in the first round of the ESS (2002/2003), which have been extensively used and have proven to be important variables in previous research (e.g., Card et al. 2012; Legewie 2013; Gorodzeisky and Semyonov 2019).

To test the effect of Alan Kurdi's death on attitudes toward immigration, we referred to the event as a natural experiment following an estimation strategy similar to that conducted by Legewie (2013). This latter paper studied the effect of terrorist events on the perception of immigrants and made use of the terror attack in Bali on October 12th, 2002, which occurred during the fieldwork of the first wave of the ESS, as a natural experiment. This strategy was also implemented in Heizler and Israeli (2021).

Although the fieldwork of the seventh round of the ESS took place between August 2014 and November 2015 and was conducted in 21 countries, the interviews took place between February and November 2015—the period during which the tragic drowning of Alan Kurdi occurred—in Portugal only.[5] This offered the opportunity to refer to the incident as a natural experiment, so that we could investigate what aspects of attitudes toward immigrants were affected by the drowning of Alan Kurdi. Following Legewie (2013), the control group included individuals who were interviewed before the drowning event, as they were not exposed to the incident at the time of their questioning. Individuals interviewed afterward were assumed to have been exposed to the event and thus were considered the treatment group.

Portugal has one of the highest negative attitudes toward immigration, along with Hungary, the Czech Republic, Estonia and Austria, relative to other EU countries participating in the seventh wave of the ESS, with previous ESS waves showing the same trend (Semyonov et al.

[4] The other waves contain only a few questions pertaining to attitudes toward immigration. More information about the different waves of the ESS is available at:
http://www.europeansocialsurvey.org/data/round-index.html

[5] Alan Kurdi's death also fell within the interview period of Israel. However, in Israel, there is an explicit distinction between public attitudes toward Jewish immigrants and those toward asylum seekers or refugees. This distinction cannot be accounted for by the ESS questionnaire, the latter using mostly the general term "people who come to live here."

2008; Card et al. 2012). In addition, it is not a significant destination country for refugees, and not many of them are granted asylum compared to the rest of Europe, even relative to population size; their numbers are similar to those in Croatia, Estonia and Latvia.[6] However, the number of migrants in Portugal is not negligible, standing at about 8.1% of the population, whereas the average in the EU is 10.7%.[7]

3.2 The aspects of attitudes

3.2.1. Opposition to immigrants' admission

This aspect of attitudes included items widely used in previous research (Meuleman and Billiet 2012; Davidov et al. 2018) and has already been shown to be influenced by the drowning of Alan Kurdi, a single identified victim, but not by the drowning of many unidentified victims (Heizler and Israeli 2021). It was constructed of seven items asking the extent to which respondents think that Portugal should allow people from other countries to come and live in Portugal. The questions referred to seven groups: immigrants of the same race as the majority, immigrants of a race that is different from the majority, immigrants from poorer countries in Europe, immigrants from poorer countries outside Europe, Jews, Muslims, and gypsies. Response categories ranged from 1 (allow many) to 4 (allow none). Factor analysis (principal axis factoring) showed that these seven items belong to the same factor with an eigenvalue of around 4, well above the Kaiser criterion, explaining about 62% of the variance. All seven variables had factor loadings above 0.68.[8] A reliability test using Cronbach's alpha showed that the items have high internal consistency, with $\alpha > 0.9$.[9] The responses of the seven items were averaged and then standardized to allow a comparison of the size of the drowning effect between this and the other aspects of attitudes. The questions included in this factor and in the other three factors described below are presented in Tables A1 to A4 in Appendix A, along with their statistical descriptions and factor loadings.

3.2.2. Realistic and symbolic threat

[6] https://www.macrotrends.net/countries/PRT/portugal/refugee-statistics. Data regarding population size was drawn from: https://en.wikipedia.org/wiki/List_of_European_countries_by_population.
[7] https://www.macrotrends.net/countries/PRT/portugal/immigration-statistics. Data refer to 2015.
[8] When restricting the factor analysis to one factor, the results do not change much.
[9] Checking the total-item correlation of each variable resulted in similar Cronbach's alpha values.

The seventh round of the ESS included items referring to the anticipation of negative consequences resulting from immigration. The factor "realistic and symbolic threat" was measured as the standardized average of six questions asking respondents about the extent to which they feel that immigrants take away jobs, take out more than they put in, make crime problems worse, are bad for the country's economy, undermine cultural life, and make Portugal a worse place to live in. Response categories ranged from 0 (highest threat) to 10 (lowest threat) in the original questionnaire but were reversed in the empirical analysis to reflect an increasing level of negative attitudes from 0 to 10 to match the scaling of the other constructs. The first four questions are considered in the literature to reflect material or realistic threats (for example, in Markaki and Longhi 2013; Davidov et al. 2018). The fifth question is considered to refer to a symbolic or cultural threat. Markaki and Longhi (2013) described the sixth question as reflecting an overall threat. These six questions belonged to a single construct according to previous research (Semyonov et al. 2008; Legewie 2013) and according to the exploratory factor analysis results performed in this paper, with an eigenvalue of 3.1, explaining about 42% of the variance. The factor loadings of the items ranged from 0.51 to 0.78. As before, results remained quite similar when restricting the principal components analysis to one factor. Chronbach's alpha showed high internal consistency with $\alpha > 0.8$.

3.2.3. Criteria for immigrants' admission

The third attitudinal element measured support of qualification criteria for immigrants entering the country. This construct was measured using four questions, indicating the importance of the following traits in deciding whether immigrants should be able to come and live in Portugal: having good educational qualifications, being able to speak the country's official language, having work skills that the country needs, and being committed to the country's way of life. Response categories ranged from 1 (extremely unimportant) to 10 (extremely important). Factor analysis indicated that these four items belong to a single factor with an eigenvalue of 2.8 and 38% of the variance explained; factor loadings ranged from 0.58 to 0.85. Cronbach's alpha was above 0.78, indicating high internal consistency. The factor analysis indicated that two other criteria—coming from a Christian background and being white—did not belong to this factor. The four questions were averaged and then standardized to create the "criteria for immigrants'

construct. The six questions concerning criteria for admission have also been used in previous research, for example in Ramos et al. (2020), but in different constructs.

3.2.4. Social distance

The final aspect of attitudes was assessed by two questions that have long been used as measures of social distance: the willingness of the respondent to have a close family member marry an immigrant of a different race or ethnicity, or to have an immigrant of a different race or ethnicity as a boss. The scales of those questions ranged from 0 (would not mind at all) to 10 (would mind a lot). The two items were highly correlated ($r = 0.695$) and were used as a single factor measuring social distance from immigrants, as in Semyonov and Glikman (2009). As a third of the responses to both questions was centered on "would not mind at all," the factor constructed was recoded into a binary variable, with the value 0 given to those who answered that they would not mind at all in both questions, and a value of 1 otherwise.

3.3. Estimation strategy

The effect of the drowning of Alan Kurdi on each attitudinal aspect was then estimated using the following regression:

$$Y_{ij} = X_i'\beta + \gamma T_i + \varepsilon_i$$

where Y_{ij}, the dependent variable, measures individual i's particular aspect j of attitude toward immigrants. Each attitudinal aspect is a function of X, a vector of sociodemographic and economic variables multiplied by a vector of corresponding coefficients β, and T, the treatment indicator; ε is the error term. T is a dichotomous variable, receiving a value 1 if the individual was interviewed after the incident (i.e., if the individual belonged to the treatment group) and 0 if the individual was interviewed before the incident (control group). The coefficient of this variable, γ, is the main focus of this paper, as it evaluates the average effect of the incident on the different aspects of attitudes toward immigrants.

When deciding which observations should be included in the control and treatment groups, we had to take into account opposing considerations. On the one hand, we needed observations obtained during a short time interval around the drowning, to reduce potential bias

resulting from other time-varying incidents occurring during this period, and also because it is plausible to assume that the impact of the drowning would be more pronounced closer to the event. On the other hand, we needed enough observations for a statistically significant outcome to our analysis. As only 22 interviews were conducted in August, and only about 100 during both July and August, we included 231 respondents who were interviewed from June 10th throughout July and August for the control group. The interviews relevant to the treatment group are those conducted after September 3rd, and preferably as close as possible to the event. However, very few interviews (about 40) took place in the first half of September, so the time interval of the treatment group was expanded to October 5th, including 251 observations. Some observations were omitted due to missing data, but the size of the control and treatment groups were, on the whole, quite similar. As the drowning of Alan Kurdi was not randomized but specifically selected, we tested the balance between the control and treatment groups with respect to observable characteristics, to rule out selection bias due to differences between the two groups. The results presented in Appendix B indicate that there weren't any statistically significant differences in the key variables affecting attitudes. As there could also be a regional selection bias created by the ESS sampling procedure that might be reflected in characteristics other than the observables included in the regression, we additionally tested the difference between the control and treatment groups in two other area characteristics that may affect the results: whether the respondent lives in a big city or otherwise, and whether there are many or few residents in the area that are from a race or ethnic minority group. The differences, also presented in Appendix B, were not significant, indicating that the regional bias created through the time difference between the two groups can be ignored. In addition, to the best of our knowledge, no other relevant events occurred during the experimental period in Portugal or in Europe. The terrorist attacks in Paris took place in mid-November of that year, and although other drowning incidents occurred throughout the year, during the experimental period, the number of victims was relatively small and these incidents did not make the headlines.

4. Results

Table 1 presents the effect of the tragic drowning on the four different aspects of attitudes toward immigrants: "opposition to immigrants' admission," "realistic and symbolic threat," "criteria for immigrants' admission" and "social distance" (columns (1)–(4), respectively). The first three

attitudinal aspects were estimated using a linear regression (OLS). The standardization of those aspects would allow us to inspect the magnitude of the treatment effect and compare it across aspects. The fourth aspect was estimated by a logit regression, due to the discrete nature of the dependent variable representing this aspect. The control variables were the same for the linear and logit estimations: age, gender, education, first-generation immigrant, Roman Catholic, and two variables for economic status. Although we cannot compare the magnitudes of the logit and OLS regression results, the signs of the marginal effects of the covariates and thus, their general interpretation, are the same.

The main variable of interest was "Treatment." The results show that the exposure to the tragic drowning of Alan Kurdi had different effects on the various aspects of attitudes toward immigrants: a statistically significant reduction in opposition to immigration (column (1)), but a smaller and statistically insignificant effect on the perception of immigrants as a threat or on criteria for immigrants' admission (columns (2) and (3), respectively). The size of the effect on opposition to immigration was quite substantial as it decreased opposition by 0.24 s.d below the average, equivalent to the effect of about seven years of education. The drowning also significantly reduced the reluctance to associate with immigrants through marriage and as a boss (column (4)).

More specifically, it seems that the tragic event affected the willingness to accept immigrants from the same or a different race, from poorer countries in Europe and outside Europe, Jews, Muslims, and gypsies. In addition, the drowning had an impact on the willingness to have personal connections with immigrants—through marriage and having an immigrant boss. On the other hand, the tragic event did not significantly affect opinions on immigrants as an economic threat, as undermining cultural life or as making the country a worse place to live in. The respondents' views on the skills that immigrants should have, such as good education, local language acquisition, skills that the country needs and commitment to the way of life in the country, were also not significantly affected.

The empathy and compassion evoked by the image of Alan Kurdi therefore seemed to affect specific aspects of attitudes toward immigration, mainly those involving emotion and an element of identification. This is in line with the literature: compassion motivates the general desire to help (e.g., Klimecki 2019; Preckel et al. 2018), and seemed to increase helping

behavior, such as donations, after the death of Alan Kurdi (Slovic et al. 2017; Prøitz 2018). Accordingly, our findings showed that respondents were in favor of a less restrictive immigration policy after the drowning. Social distance from immigrants, which also decreased after the drowning, might have been affected by empathy and identification with the suffering immigrants. However, attitudinal aspects that involved what might be considered as more cognitive reasoning did not seem to be affected. In other words, respondents did not significantly change their threat perceptions or their notion of the qualifications that immigrants should have, yet their feelings of compassion lowered their objection to allowing immigrants into the country and narrowed social distance.

Let us now examine the control variables. Age did not have a significant effect on any aspect of attitudes toward immigrants. Some previous research found a positive connection between age and anti-immigration attitudes (Mayda 2006; Ramos et al. 2020), whereas others did not find any such effect (e.g., McLaren and Johnson 2007). Gender also did not have a significant impact on any facet of attitudes toward immigrants except for the realistic and symbolic threat aspect, where males had significantly lower threat perceptions than females. Previous studies have found various results for the effect of gender. Markaki and Longhi (2013) found that women perceive higher levels of economic threat from immigration, whereas men perceive higher levels of cultural threat. Mayda (2006) and Malchow-Møller et al. (2008) showed that males tend to be pro-migration. Ramos et al. (2020) did not find a significant effect of gender on any aspect of attitudes toward immigration.

Numerous studies have found a negative connection between education and anti-immigration attitudes (see O'Rourke and Sinnott 2006; d'Hombres and Nunziata 2016; Kuntz et al. 2017). This effect is also apparent in Table 1; education significantly decreased all aspects of anti-immigration attitudes. Being a first-generation immigrant significantly decreased the opposition to immigrants' admission and even more the perceptions of their posing a realistic or symbolic threat. However, respondents who were not born in the country thought that admission criteria such as having a good education, an ability to speak the local language and suitable work skills were important in determining who entered the country, significantly more so than the native respondents. This could be because the immigrant respondents realize that successful assimilation in the host country cannot occur without those skills. Conversely, being a first-

generation immigrant did not significantly affect social distance, possibly due to conflicting aspirations of integration and cultural preservation.

Being Catholic significantly increased opposition to immigrants' admission, with a smaller impact on realistic and symbolic threat. Opposition to social ties with immigrants was also higher among Roman Catholics compared to other respondents. Previous research has provided ambiguous results as to the expected effect of this variable. For example, O'Rourke and Sinnott (2006) found that being Catholic had no significant effect on attitudes toward migration. However, using British data, Dustmann and Preston (2007) showed that Catholics tended to have a more favorable attitude toward immigrants of West Indian and Asian origin, yet their perception of economic threat was not affected by religion.

The dummy variable indicating respondents who found it very difficult to live on present income significantly increased three aspects of anti-immigration attitudes: opposition to immigrants' admission, realistic and symbolic threat, and the criteria for immigrants' admission. The effect of a somewhat less difficult economic status (a dummy variable indicating that the respondent found it difficult to live on present income) was smaller and significantly affected only perceptions of threat and criteria for immigrants' admission. Considering that immigrants to Europe are usually less skilled than the native population, this result is consistent with the theory of labor market equilibria, where immigrants compete mostly with the less well-off native population over jobs and wages. The result was also consistent with Ramos et al. (2020) who found that a higher income decreases opposition to immigration, realistic and symbolic threat but does not significantly affect the criteria for immigrants' admission. Conversely, difficult economic status was found to increase social ties with immigrants: economic difficulty reduced the reluctance to have marriage and occupational ties with immigrants. These results are in line with Dustmann and Preston (2007) but contrast with Semyonov and Glikman (2009).

Table 1. The impact of Kurdi's death on the different aspects of attitudes toward immigration.

Variable	Opposition to immigrants' admission (1)	Realistic and symbolic threat (2)	Criteria for immigrants' admission (3)	Social distance (Logit) (4)
Treatment	-0.239**	0.123	-0.088	-0.427**
	(0.095)	(0.087)	(0.082)	(0.21)
Age	0.004	-0.001	0.002	0.004
	(0.003)	(0.003)	(0.002)	(0.006)
Gender	-0.105	-0.226***	0.106	-0.043
	(0.097)	(0.087)	(0.084)	(0.212)
Education	-0.034***	-0.021**	-0.024**	-0.042*
	(0.011)	(0.01)	(0.01)	(0.024)
Immigrant	-0.532***	-0.884***	0.359**	-0.184
	(0.193)	(0.171)	(0.165)	(0.405)
Roman Catholic	0.439***	0.241**	0.115	1.083***
	(0.113)	(0.101)	(0.096)	(0.232)
Very difficult Economic status	0.329**	0.332**	0.245*	-0.809**
	(0.151)	(0.14)	(0.132)	(0.321)
Difficult economic status	0.069	0.171*	0.162*	-0.361
	(0.11)	(0.101)	(0.095)	(0.244)
Constant	-0.159	0.139	-0.029	0.559
	(0.245)	(0.22)	(0.211)	(0.519)
R^2 / Pseudo	0.154	0.144	0.063	0.079
F/ LR X^2	10.55	8.54	3.79	46.63
Observations	471	415	461	465

Standard errors are presented in parentheses.
***p < 0.01, **p < 0.05, *p < 0.1.

As a robustness check, another set of estimations presented in Appendix C was performed for observations obtained during a shorter time interval (from June 16th until September 1st for the control group, and from September 3rd to September 30th for the treatment group) with results mostly similar to those presented in Table 1, though with lower significance levels.

5. "Placebo" simulations

To check the robustness of our results, two concepts of "Placebo" simulations were performed, one testing the drowning effect on a "placebo" attitudinal question, and the second testing the effect of a "placebo" event on the four aspects of attitudes.

First, a simulation of the effect of Alan Kurdi's death on another moral question that should not, in principle, be affected by the event was added, following De Poli et al. (2017). In their paper, they examined the effect of salient media coverage of refugee drownings in the Mediterranean on individual xenophobic attitudes, and used moral questions about homosexuality, gender equality and prostitution as dependent variables in "placebo" regressions. In the simulation here, the dependent variable was the respondent's opinion on whether gays and lesbians should be free to live their own lives as they wished, with the answers ranging between 1 – agree strongly to 5 – disagree strongly. The results of the ordered logit model are displayed in Table 2. As expected, the treatment variable was not significant, meaning that Alan Kurdi's death, which affected respondents' attitudinal aspects toward immigrants that were connected to emotions, did not have a significant effect on their attitudes toward gays and lesbians (although the effects of the control variables were as expected).

Table 2. "Placebo" question simulation.

Variable	Gays and lesbians free to live life as they wish (Ordered Logit)
Treatment	0.052
	(0.171)
Age	0.016***
	(0.005)
Gender	0.347**
	(0.176)
Education	-0.109***
	(0.021)

Immigrant	0.26
	(0.37)
Roman Catholic	0.978***
	(0.214)
Very difficult Economic status	0.011
	(0.276)
Difficult economic status	0.044
	(0.066)
Pseudo R^2	0.087
LR X^2	113.14
Observations	488

Standard errors are presented in parentheses.
***p < 0.01, **p < 0.05, *p < 0.1.

To consider the possibility that an unobserved temporal variation in the data affected the results, in the second simulation a random date was selected, constituting a fictitious event following Legewie (2013) and Heizler and Israeli (2021). The date was chosen so that it would exclude interviews conducted around two other major incidents occurring in Europe at the time of the fieldwork period in Portugal, namely the drowning of more than 1000 immigrants trying to reach Europe in the middle of April, and the November Paris terror attacks. The fictitious event was set on June 20th, with respondents interviewed from May 20th until this date considered as the control group, and the respondents interviewed from this date up to July 30th were the treatment group. To the best of our knowledge, no other substantial events occurred during this period. The results of the estimation are presented in Table 3.

Table 3. "Placebo" event simulation

Variable	Opposition to immigrants' admission (1)	Realistic and symbolic threat (2)	Criteria for immigrants' admission (3)	Social distance (Logit) (4)

Treatment	0.09	-0.079	-0.026	0.159
	(0.132)	(0.118)	(0.109)	(0.297)
Age	-0.001	-0.005	0.006*	0.019**
	(0.004)	(0.004)	(0.003)	(0.009)
Gender	-0.151	-0.192*	0.059	-0.049
	(0.129)	(0.116)	(0.106)	(0.294)
Education	-0.059***	-0.054***	-0.027**	-0.034
	(0.016)	(0.014)	(0.013)	(0.037)
Immigrant	-0.424*	-0.529**	0.092	-0.872*
	(0.249)	(0.218)	(0.203)	(0.516)
Roman Catholic	0.517***	0.158	0.031	1.234***
	(0.149)	(0.134)	(0.122)	(0.317)
Very difficult Economic status	0.105	0.025	-0.144	-1.32***
	(0.203)	(0.188)	(0.168)	(0.449)
Difficult economic status	-0.051	0.178	0.192	-0.401
	(0.143)	(0.129)	(0.119)	(0.332)
Constant	0.254	0.771**	-0.101	-0.451
	(0.371)	(0.328)	(0.308)	(0.822)
R^2 / Pseudo	0.165	0.131	0.085	0.127
F/ LR X^2	6.39	4.31	2.99	41.84
Observations	268	238	265	263

Standard errors are presented in parentheses.
***p < 0.01, **p < 0.05, *p < 0.1.

It is noticeable that the fictitious event ("Treatment") did not significantly influence any aspect of attitudes. Nevertheless, the other control variables had the same impact on the different attitudes as in the main results presented in Table 1, though mostly fewer variables were statistically significant in the "Placebo" regression compared to the original experiment, probably due to the smaller sample of the former. These results support our conclusions, that the treatment effect observed on some aspects of attitudes toward immigrants following the death of Alan Kurdi was unlikely to occur as a result of other time-varying factors apart from the drowning.

6. Conclusions and discussion

We investigated the effect of the tragic drowning of Alan Kurdi on several aspects of attitudes toward immigrants. The timing of the interviews of the ESS in Portugal and the randomized

event of Kurdi's drowning enabled us to use a natural experiment framework. The special immigration module of the survey enabled distinguishing between potentially different effects on several attitudinal aspects: "opposition to immigrants' admission," "realistic and symbolic threat," "criteria for immigrants' admission," and "social distance."

We found that Alan Kurdi's death significantly affected only the first and last aspects, but not "realistic and symbolic threat" or "criteria for immigrants' admission." This suggests that tragic events that evoke empathy and compassion for the victim influence attitudes regarding helping behavior toward immigrants and also increase identification with the victim, thereby ameliorating the social distance aspect. Respondents who were interviewed after Alan Kurdi's drowning agreed to allow more immigrants into their country, and they were also more willing to have a close family member marry an immigrant or have an immigrant as their boss. However, empathy did not seem to affect aspects that are less related to emotions and pro-social behavior and presumably involve more cognitive thinking. The respondents' opinions on the influence of immigration on crime, the labor market, and economic and cultural life were not changed by the tragic event. Similarly, their opinion of the criteria for immigrants' admission, such as the need for a good education and local language acquisition, was not altered.

The current study contributes to the emerging literature on attitudes toward immigrants, as well as that on public opinion. Immigration is a topic of debate in many countries, leading to numerous studies on attitudes toward immigrants (for example, Dustmann and Preston 2007; Constant et al. 2009; Facchini and Mayda 2012). The effect of prominent events involving immigrants as offenders on sentiments toward migration has been investigated in several papers (e.g., Legewie, 2013; Ferrín et al. 2020), but very few papers have addressed the effect of incidents involving immigrants as victims, which could raise empathy and improve attitudes toward immigration. Moreover, those few papers focused on the effect of various explanatory variables on a single question or a single attitudinal aspect associated with helping behavior. To the best of our knowledge, this is the first study to use a natural experiment framework to explore the effect of a compassion-evoking incident on different aspects of attitudes toward immigration.

Our results also indicate that the process by which attitudes are changed can be important for understanding the implications of campaigns oriented to changing those attitudes. If in Heizler and Israeli (2021), the conclusion was that the personal story of an identified individual should always be sought and emphasized when reporting the drownings of immigrants in

particular, or other tragedies in general, in this current study we see that the impact of the identifiable victim effect is limited to specific attitudinal aspects. Thus, in the case of the ongoing Russia-Ukraine war, if the main target is to raise donations or encourage volunteer work, an article presenting an identified victim might help, but its effect on established opinions on, say, whether the European Union should get militarily involved, or apply more sanctions on Russia is doubtful and should be further explored.

While this study adds to our understanding of the impact of compassion-evoking events on attitudes, some limitations should be noted. First, our study concentrates on the specific tragedy of Alan Kurdi, and other cases involving empathy should be investigated to strengthen the conclusions. It is not easy to find a suitable event that falls within a specific time period for a natural experiment, but the current Russia-Ukraine war, which has been accompanied by heart-breaking photos, for example, might, unfortunately, provide an opportunity for further research on the subject. Second, the literature on Kurdi's drowning stresses compassion as the primary feeling induced by his death (e.g., Lenette and Miskovic 2018; Sohlberg et al. 2019), but other events may nurture more complex feelings, for example, compassion for the victim mixed with fear for oneself, making the impact on the different attitudinal aspects more difficult to analyze. In addition, our results are limited to attitudes, and it would be interesting to see the implications on actual behavior. Helping activities that can be directly linked to empathy, such as donations and volunteering, did follow the death of Kurdi (Slovic et al. 2017; Prøitz 2018), though their statistical significance was not tested. Other long-term behavior might also be of interest, for example, whether people become more willing to live near immigrants. However, such questions could not be tested with the ESS data and requires further research.

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Appendix A

Table A1. "Opposition to immigrants' admission."

Question	Mean	SD	Factor loading
To what extent do you think Portugal should allow people of the same race/ ethnic group as most of Portugal's people to come and live here?	2.341	0.821	0.783
How about people of different race/ ethnic group as most of Portugal's people?	2.529	0.862	0.815
How about people from the poorer countries outside Europe?	2.609	0.886	0.809
How about people from the poorer countries in Europe?	2.460	0.839	0.818
…to what extent you think Portugal should allow Jewish people from other countries to come and live in Portugal?	2.657	0.943	0.751
…to what extent you think Portugal should allow Muslims from other countries to come and live in Portugal?	2.882	0.925	0.674
…to what extent you think Portugal should allow Gypsies from other countries to come and live in Portugal?	3.091	0.906	0.658

Mean and SD refer to the pooled sample of the control and treatment groups.

Answers range: 1-4, 1 – allow many, 2 – allow some, 3 – allow a few, 4 – allow none.

Table A2. "Realistic and symbolic threat"

Question	Mean	SD	Factor loading
Would you say that people who come to live here generally take jobs away from workers in Portugal, or generally help to create new jobs?	4.531	2.530	.683
Most people who come to live here work and pay taxes. They also use health and welfare services. On balance, do you think people who come here take out more than they put in or put in more than they take out?	4.508	2.427	.516
Are Portugal's crime problems made worse or better by people coming to live here from other countries?	3.642	2.145	.514
Would you say it is generally bad or good for Portugal's economy that people come to live here from other countries?	5.036	2.460	.685
Would you say that Portugal's cultural life is generally undermined or enriched by people coming to live here from other countries?	5.590	2.425	.676
Is Portugal made a worse or a better place to live by people coming to live here from other countries?	4.507	2.196	.775

Mean and SD refer to the sample of the control and treatment groups.

Answers range: 0 –10, 0-lowest threat, 10-highest threat.

Table A3. "criteria of immigrants' admission"

Question	Mean	SD	Factor loading
Please tell me how important you think each of these things should be in deciding whether someone born, brought up and living outside Portugal should be able to come and live here. Firstly, how important should it be for them to have good educational qualifications?	6.338	2.663	.694
…how important should it be for them to have work skills that Portugal needs?	7.068	2.515	.847
… how important should it be for them to be able to speak Portugal's official language?	6.415	2.648	.629
… how important should it be for them to be committed to the way of life in Portugal?	6.784	2.398	.582

Mean and SD refer to the pooled sample of the control and treatment groups.

Answers range: 0-10, 0-extremely unimportant 10-extremely important

Table A4. "social distance"

Question	Distribution
Now thinking of people who have come to live in Portugal from another country who are of a different race or ethnic group from most Portugal people. Please tell me how much you would mind or not mind if someone like this was appointed as your boss?	0: 38.48% 1: 62.52%
...married a close relative of yours?	0: 40.40% 1: 59.60%

Answers range: 0-1, 0- Not mind at all, 1- Otherwise (mind to some degree)

Appendix B

Balancing test

Table B1 tests the balance between the control and treatment groups with respect to observable characteristics, to rule out selection bias due to differences between the two groups, as the drowning of Alan Kurdi was not randomized but specifically selected. Although the data were not chosen randomly, there weren't any statistically significant differences in the variables. Thus, it can be assumed that the results reported in Table 1 were not biased by sample imbalance.

Table B1. Descriptive statistics, control group (10 June–1 September) and treatment group (2 September–5 October).

Variable	Mean control	Mean treatment	*t*
Age	53.231	50.846	1.346
	(1.263)	(1.240)	
Gender	0.38	0.449	-1.537
	(0.032)	(0.032)	
Education	8.364	8.829	-1.008
	(0.320)	(0.33)	
Immigrant	0.061	0.069	-0.339
	(0.016)	(0.019)	
Roman Catholic	0.764	0.713	1.279
	(0.028)	(0.029)	
Very difficult economic status	0.106	0.133	-0.931
	(0.020)	(0.021)	
Difficult economic status	0.288	0.267	0.511
	(0.020)	(0.025)	

Standard errors are presented in parentheses.
t is the t-value testing for the significance of the difference between the average of the covariates in the "control" and "treatment" samples.

Another source of potential bias is the regional differences between the control and treatment groups. Due to the ESS sampling procedure, the distribution of respondents' regions is not similar in the two groups. This could lead to differences in characteristics other than those included in the regression and tested above. Therefore, we also tested the balancing of two variables that could differ by region: whether the respondent lives in a big city, and whether there are many or few residents in the area that are from a race or ethnic minority group. The response categories of the first variable ranged from 1 to 5 (big city, suburbs or outskirts of big city, town or small city, country village and farm or home in the countryside, respectively) and were recoded into 1- big city (first two original categories) and 0- otherwise. The response categories of the second variable ranged from 1 (almost nobody in the area is from a race/ ethnic minority) to 3 (many are from a minority race/ ethnic group) and recoded into 1-almost nobody is from a minority group, 0- otherwise. The differences in the two variables which are presented below, are not significant, suggesting that the regional bias created through the time difference between the two groups can be ignored.

Table B2. Comparison between additional area characteristics, control group (10 June–1 September) and treatment group (2 September–5 October).

Variable	Mean control	Mean treatment	*t*
Big city	0.314	0.296	0.446
	(0.031)	(0.029)	
Almost nobody from a minority group	0.59	0.582	0.144
	(0.033)	(0.031)	

Appendix C

As an additional robustness check, we performed the empirical analysis again, for a shorter time interval. The control group consisted of 197 individuals who were interviewed beginning from June 15th through July and August, and the treatment group included 195 respondents who were interviewed from September 3rd to September 30th, though some observations were omitted due to missing data. The results are displayed below.

Table C1. The impact of Kurdi's death on the different aspects of attitudes toward immigration, June 16th- September 30th.

Variable	Opposition to immigration (1)	Realistic and symbolic threat (2)	Criteria for immigrants' admission (3)	Social distance (Logit) (4)
Treatment	-0.239** (0.105)	0.136 (0.096)	-0.032 (0.091)	-0.522** (0.225)
Age	0.005 (0.003)	-0.002 (0.003)	0.003 (0.003)	-0.001 (0.007)
Gender	-0.06 (0.108)	-0.152 (0.096)	0.041 (0.092)	-0.02 (0.229)
Education	-0.032*** (0.012)	-0.023** (0.011)	-0.024** (0.011)	-0.028 (0.026)
Immigrant	-0.592*** (0.211)	-1.002*** (0.184)	0.389** (0.179)	-0.266 (0.427)
Roman Catholic	0.389*** (0.124)	0.192* (0.11)	0.05 (0.106)	0.991*** (0.253)
Very difficult Economic status	0.453*** (0.167)	0.323** (0.156)	0.192 (0.145)	-0.472 (0.348)
Difficult economic status	0.079 (0.121)	0.144 (0.109)	0.173* (0.104)	-0.323 (0.259)
Constant	-0.207 (0.266)	0.253 (0.233)	0.015 (0.226)	0.718 (0.549)
R^2 / Pseudo F/ LR X^2 Observations	0.159 9.05 392	0.148 7.19 340	0.059 2.92 385	0.059 29.66 388

Standard errors are presented in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.