Attitudes Towards Outgroups Before And After Terror Attacks

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Abstract

In light of the recent terrorist attacks in Paris and Brussels, the aim of the current set of studies was to examine if attitudes towards terrorists and - by extension - uninvolved outgroups (i.e., Muslims, refugees, and immigrants) changed before *vs*. after these attacks. In a Belgian student sample (Study 1a), we investigated the impact of the Paris attacks on various facets of outgroup attitudes: feelings towards terrorists, Muslims, and refugees, immigrant trust, immigrant threat, and immigrant prejudice. The impact of the Brussels attacks was studied in a Belgian convenience sample (Study 1b), specifically focusing on feelings towards refugees, refugee trust, refugee threat, and avoidance of contact with refugees. Results from frequentist and Bayesian analyses in both samples revealed no significant short- and long-term longitudinal changes in outgroup attitudes after both the Paris (Study 1a) and Brussels (Study 1b) attacks. We discuss these findings and connect them to the alleged refugee crisis, another recent event that polarized European societies.

Key words: terrorist attacks; attitudes; longitudinal attitudinal changes; refugee influx; intergroup relations

Recently, Western Europe has been traumatized by numerous terrorist attacks. On November 13, 2015 and March 22, 2016, several attacks were carried out in the hearts of Paris and Brussels, the capitals of France and Belgium, respectively. These attacks killed 164 people and left more than 620 citizens of different nationalities injured. Shortly afterwards, these deadly incidents were claimed by the Islamic State of Iraq and Syria (ISIS), a Salafi jihadist militant group that follows a fundamentalist Wahhabi doctrine of Sunni Islam[1]. Although these attacks have received ample media coverage, little is known about the effects of and reactions to these extreme events. The current set of studies aimed to provide an answer to this research question.

In particular, we wanted to examine if attitudes towards terrorists and - by extension - uninvolved outgroups as a whole changed before versus after these attacks. This research goal was addressed in two small but unique Belgian samples, investigating the short- and long-term changes in outgroup attitudes after the Paris (Study 1a) and Brussels (Study 1b) attacks. Contrary to common beliefs, our results showed no changes in attitudes towards groups directly associated with the terrorist attacks (Study 1a), nor in attitudes towards groups that were not directly linked to these events (Study 1a and 1b). As such, these findings contribute to the ongoing debate about the psychological impact of terrorist attacks, as they challenge the - yet unclarified - assumption that these events have been a powerful determinant of recent waves of islamophobia in Western Europe[2].

The Psychological Consequences Of Terrorist Attacks on Outgroup Attitudes

Though the impact of threatening events on the individuals' mind is well-documented[3;4], only a few studies have focused on the psychological consequences of terror. Terrorism is defined as the premediated use of violence by individuals or subnational groups in order to obtain a political or social objective through the intimidation of a large audience beyond that of the immediate victims[5]. Given the well-documented and profound impact of

terrorism on people's mental states[6;7;8;9;10], it seems reasonable to assume that they can also affect a whole range of attitudes. And indeed, a number of studies found a link between terrorist attacks and higher levels of conservatism, higher support for right-wing parties, and greater desire for more governmental control[11;12;13]. Moreover, terrorist acts may also influence outgroup attitudes, especially when the ones committing the crimes are highly salient members of these outgroups. According to Terror Management Theory (TMT[14]), terrorist events increase awareness of our inevitable personal death and the thought that someday all humans must die. Since survival is embedded in our nature, this induces certain coping mechanisms like immersion in cultural systems (in order to be remembered after one's death and 'live on culturally') and cultural worldview defense (e.g., increased sympathy for one's ingroup culture and less favorable attitudes towards outgroups).

A number of studies seem to favor the hypothesis that terrorism is associated with coping mechanisms such as outgroup derogation. For example, Panagopoulos[15] analyzed public opinion data and concluded that terrorist events in the United States increased racism and suspicion of Muslims in non-Muslim Americans. Similarly, Kaplan[16] documented a steep increase in the number of hate crimes reported in the post-9/11 era. Moreover, Doosje, Zimmermann, Küpper, Zick, and Meertens[17] found that terrorist threat significantly predicted negative behavior towards outgroups, even when controlling for subtle and blatant prejudice. Thirdly, the effects of terror have also elicited some scholarly attention in experimental paradigms. For example, Das, Bushman, Bezemer, Kerkhof, and Vermeulen[18] presented their participants either news about Islamic terror or control news. As predicted by TMT, only the first type of news was associated with mortality thoughts and increased prejudice towards the Arab population. These scholars' findings were recently corroborated by Saleem and Anderson[19], who observed that playing an anti-terrorist game subsequently inflated anti-Arab attitudes.

To sum up, what these studies have in common, is that they all seem to suggest that terrorist attacks can evoke negative attitudes towards outgroups associated with these events. Let it be noted, however, that this conclusion needs to be interpreted with caution, since all of the presented research suffers from either one of two flaws. First, these experimental studies lack ecological validity, as it seems highly unlikely that reading or viewing terrorism news, or playing an anti-terrorist game in an experimental setup can evoke the same emotions as real-life exposure[20]. Second, these cross-sectional studies do not take into account pre-existing attitudes towards outgroups (since measurement of prejudice prior to actual terrorist attacks is neither feasible nor foreseeable). As such, a first aim of our research was to investigate changes in outgroup attitudes following terrorist events, under realistic, real-life circumstances, and using a baseline measurement.

Secondary Transfer Effects of Terrorist Attacks

Our second research interest lays in the extent to which the negative impact of terrorist attacks extends to outgroups perceived to be associated with those involved in the events (e.g., Syrian refugees who are held responsible for the attacks in Brussels[21]). At least three lines of research associate terrorist events with an inclination of prejudice towards secondary outgroups. In the aforementioned study by Kaplan[16], the author found that the perpetrators of hate crimes did not only target Muslims, but also individuals who were perceived as Muslims. In other words, sheer similarity to the terrorists of 9/11was sufficient to target people with a (perceived) Muslim appearance.

The latter was also observed by Peter Hopkins[22], who noted that victims of islamophobia are often non-Muslims with perceived Muslim characteristics. Furthermore, Legewie[23] investigated the impact of the Islamic-terrorist bombings in Bali (in 2002), and found substantial increases in negative sentiments towards immigrants in general (although the size of the effect varied significantly across countries). Lastly, it has also been

documented that, after the Madrid attacks, average levels of stereotypes towards involved (Arabs) and uninvolved (Jews) outgroups increased[20].

In all of these studies, a sort of 'secondary transfer' effect emerged, where negative attitudes towards terrorists generalize towards those who are perceived to possess similar characteristics. Recently, however, Jungkunz, Helbling, and Schwemmer[24] found no significant changes in refugee threat in two independent German samples before vs. after the Paris attacks. Given the potentially detrimental impact for intergroup relations at large, a second research aim of our study was to investigate if and how terrorism affects attitudes towards outgroups that are perceived to be related to the actual perpetrators.

The Long-Term Consequences of Terrorist Attacks

Lastly, the present research aimed to address the persistency of these hypothesized changes in outgroup attitudes. In contrast to the ample scholarly attention to the immediate, short-term (i.e., within days after the attacks) consequences of terrorist events[15], empirical evidence regarding long-term effects is rather scarce. Two notable exceptions are the studies by Kaplan[16] and by Lindén and colleagues[13]. The former author noted that, within a nine-week window, hate crimes against (perceived) Muslims dropped to their baseline, pre-attack level. Furthermore, Lindén and colleagues[13] compared social-ideological right-wing attitudes (i.e., authoritarianism and social dominance orientation) and pro-torture attitudes immediately after the terrorist attack compared to weeks later, when terror threat was less salient. Intriguingly, their findings indicated that levels of these attitudes drop when the attacks are no longer as prevalent in the news and other media.

Nonetheless, the latter studies' findings need to be interpreted with caution. Since Lindén and colleagues[13] compared matched - rather than the same - samples, it is yet the question if their reported drop in torture attitudes is due to differences in terror saliency rather than differences in the underlying characteristics of the participants at the two time points.

Moreover, in the absence of a baseline pre-attack measurement, it is hard to state that attitudes actually changed before *vs*. after the attacks. Given the incompleteness of such design, our third and final research goal was to study the evolution of outgroup attitudes, following terrorist attacks, over a period of time that extends the immediate aftermath of these events, *within* the same sample.

The Present Study

At the time of the attacks in Paris (Study 1a) and Brussels (Study 1b), we were in the middle of data collection for two other studies that investigated the relationship between intergroup threat and attitudes towards various outgroups. Shocking nevertheless, these unfortunate events presented us with the opportunity to empirically study the impact of a traumatic terror event on individuals' attitudes. Since the majority of our participants had already completed our questionnaire before the respective attacks, we now had data at our disposal that could function as a 'pre-attack' baseline and could be compared with 'post-attack' attitudes, *within the same individuals*, both in a short-term (i.e., one week later) and a long-term (i.e., three months later) perspective.

This study had three main goals. First of all, it seems warranted to investigate changes in outgroup attitudes before and after major terror events. Although some studies[18] proposed a trend towards more prejudice, no study has yet examined attitudinal changes before vs. after terrorist attacks *within the same sample*. Secondly, as several studies[20] suggested that reactions to terror might spread to other outgroups, a second goal lies in the investigation of such 'secondary transfer effect' of terror attacks. Lastly, since there is preliminary evidence[12] suggesting that the alleged impact of terrorism might not last long, it deems necessary to investigate attitudinal changes shortly after an attack, as well as in the longer run. As such, we formulated the following hypotheses:

Hypothesis 1: Terrorist attacks are associated with more negative attitudes towards outgroups associated with the perpetrators, in the immediate aftermath of the attacks (i.e., one week later).

Hypothesis 2: Terrorist attacks are also associated with more negative attitudes towards outgroups that are not directly associated with the perpetrators.

Hypothesis 3: The hypothesized changes in attitudes normalize in the longer run (i.e., three months later).

Method

Participants and Procedure

A student sample (Study 1a; 86 respondents) and a non-student convenience sample (Study 1b; 38 respondents) completed an online questionnaire one week before and one week after the respective attacks. Three months after the particular attacks, 55 students (i.e., 64% response rate in Study 1a) and 24 adults (i.e., 63% response rate in Study 1b) completed the same survey again.

In Study 1a, participants were invited to the lab, where they completed all the questionnaires and measures. In Study 1b, data were collected using social media. Participants who responded to our add, placed on Facebook and the University's website, were subsequently requested to contact candidate-subjects among their acquaintances (i.e., the so-called snowballing data collection technique).

The mean age of Study 1a's sample was 20 years (SD = 5.17) at T1, and 79% of the respondents were women. The mean age of Study 1b's sample was 43 years (SD = 15.60) at T1, and 50% were women. Given our specific interest in outgroup attitudes, we ensured that none of our participants considered the target groups as ingroups, either by deleting responses of students with a migration history from the final sample (Study 1a; N = 4), or through prescreening (Study 1b; our add specifically stated that we were looking for Belgian residents

without a migration history, and we additionally requested demographic information before sending out the survey link).

Study 1a

Measures

We tapped into six facets of outgroup attitudes, ranging from feelings towards terrorists, Muslims, and refugees, to specific immigrant trust, threat, and prejudice (see Appendix for a list of all items).

Positive outgroup feelings. Respondents had to indicate to which extent they agreed with several statements, using a 10-point Likert scale ranging from one (*totally disagree*) to ten (*totally agree*). The statements read 'I have positive feelings towards terrorists'; 'I have positive feelings towards Muslims'; and 'I have positive feelings towards Syrian refugees'.

Outgroup trust. Outgroup trust was measured with one item based on Van Assche, Bostyn, De keersmaecker, Dardenne and Hansenne[25] ('Most people of non-Western-European origin can be trusted '), on a seven-point Likert scale anchored by one (*totally disagree*) and seven (*totally agree*).

Outgroup threat. Outgroup threat was measured with two items[26;27]. An example item reads 'Immigrants nowadays have too much political power and responsibility in our country'. Respondents answered using seven-point Likert scales ranging from one (*totally disagree*) to seven (*totally agree*). Both items were strongly positively related (r_{T1} = .50, p < .001; r_{T2} = .60, p < .001; and r_{T3} = .65, p < .001).

Outgroup prejudice. A 4-item blatant racism scale was administered[28;29]. A sample item is 'All things taken together, the White race is superior over other races'. Respondents answered using seven-point Likert scales anchored by one (*totally disagree*) and seven (*totally agree*). Cronbach's alphas of these scales were .84 at T1, T2, and T3.

Results

Frequentist Analyses

Means and standard deviations on all outcomes can be found in Table 1. Second, we conducted two-wave repeated measures analyses on all outcomes, using time as within-subjects factor. We found no significant changes over time (all *F*s < 3.24, all *p*s > .08)[†]. Finally, we conducted three-wave repeated measures analyses on all outcomes, using time as within-subjects factor. Again, we found no significant changes over time (all *F*s < 2.80, all *p*s > .07), except for Muslim attitudes ($F = 4.03$, $p = .02$) and immigrant threat ($F = 5.09$, $p = .03$). Pairwize comparisons indicated a slight increase in positive feelings towards Muslims three months after the Paris attacks compared to one week before (ΔT3-T1 = 0.51; $p = .006$) and compared to one week after (ΔT3-T2 = 0.71; $p = .02$). In the same way, pairwize comparisons indicated a slight decrease in outgroup threat three months after the Paris attacks as opposed to one week before (ΔT3-T1 = -0.87; $p = .007$) and as opposed to one week after (ΔT3-T2 = -0.38; $p = .02$)[†].

Bayesian Analyses

Post-hoc power analyses revealed that the power to detect a small effect size within our sample was determined to be around 73.65%. *Albeit* not substantially more underpowered than a conventional analysis in large samples, parameter estimation with data of a longitudinal nature can be tedious with such modest sample size[30]. In fact, frequentist (longitudinal) analyses on small datasets often suffer from such power issues and potentially biased parameter values.

Given that frequentist statistics make point estimates for unknown parameters of interest, which need to be generalized from experiments with small sample sizes to the entire population, they can easily be distorted by uncertainty factors associated with the data. Bayesian analyses, on the other hand, create distributions over more and less likely parameter values, allowing them to take into account the uncertainty associated with the estimate, and as

such, are better equipped to model data with small sample sizes[31]. As such, we calculated Bayes factors, a type of statistic that can be viewed as representing the weight of evidence in the data for either one of two competing hypotheses (in our case, the hypothesis that there was an effect of time on outgroup attitudes versus the 'null hypothesis' that there was no effect). In this respect, a Bayes factor constitutes an easily interpretable evaluation criterion for the plausibility of a given hypothesis. For example, a Bayes factor of 5 suggests that the alternative model ('there is an effect') is about 5 times more likely than the null model ('there is no effect'), whereas a Bayes Factor of 0.2 suggests the opposite.

We used default priors from the BayesFactor package in R[32] to calculate Bayes factors for the short-term and long-term effects of time on all outcomes (see Table 2). Most of the Bayes factors indicated anecdotal (< 1.00; e.g., feelings towards terrorists), moderate (< 0.33; e.g., trust in immigrants), and even strong (< 0.10; e.g., prejudice towards immigrants) evidence in favor of the null model being true. For example, the chance of prejudice showing no long-term change after the attacks is 14 (i.e., 1/0.071) times more likely than the chance of the attacks inducing a change. Furthermore, the Bayesian analyses showed strong evidence confirming the significant frequentist results that already indicated a trend towards more positive Muslim-related attitudes and less threat towards immigrants. In particular, the chance of a long-term change occurring for Muslim positivity and immigrant threat was estimated to be respectively 14 and 20 times more likely than the chance of no long-term attitudinal changes.

Study 1b

Measures

To further investigate the hypothesized 'secondary transfer effect' (i.e., Hypothesis 2), we specifically tapped into four facets of attitudes towards refugees in Study 1b: positive

feelings, trust, threat, and contact avoidance. Respondents answered all statements using 7-point Likert scales ranging from one (*totally disagree*) to seven (*totally agree*).

Positive refugee feelings. Respondents had to indicate to which extent they agreed with the following statement: 'I have positive feelings towards Syrian refugees'.

Refugee trust. Refugee trust was measured with one item ('I trust Syrian refugees').

Refugee threat. Refugee threat was measured with four items[26;33]. An example item reads 'I think that refugees in Belgium do not have the same mentality as the native Belgians'. Cronbach's alphas of these scales were .90 at T1, .89 at T2, and .88 at T3.

Contact avoidance. Participants had to indicate to what extent they agreed with the following statement: 'I avoid contact with Syrian refugees'.

Results

Frequentist Analyses

Table 1 portrays the means and standard deviations of all scales. Next, we conducted two-wave repeated measures analyses on all outcomes, using time as within-subjects factor. We found no significant changes over time (all Fs < 1.24, all ps > .27). Third, we conducted three-wave repeated measures analyses on all outcomes, using time as within-subjects factor. Again, we found no significant changes over time (all Fs < 2.69, all ps > .09).

Bayesian Analyses

As in Study 1a, post-hoc power analyses revealed that the power to detect a small effect size within our sample was rather small (i.e., 42.35%). Hence, we again calculated Bayes factors for the short-term and long-term effects of time on all outcomes (see Table 2). The Bayes factors signposted anecdotal (< 1.00; e.g., positive feelings) and moderate (< 0.33; e.g., contact avoidance) evidence in favor of the null model being true. For instance, the chance of trust towards refugees showing no change after the attacks is 4 (i.e., 1/0.252) times more likely than the chance of the attacks inducing a change in the short term; and it is 3 (i.e.,

1/0.340) times more likely that the attacks induced no change (versus a change) in refugee trust in the long run.

Discussion

The current set of studies targeted the potential social-psychological attitudinal consequences of various terrorist events that occurred in 2015 and 2016. Interestingly, we present a novel test of the effects of two major terror events *outside* the lab, using short- and long-term longitudinal designs, including two small but unique samples, tapping into a range of reactions towards both involved and uninvolved target groups. The results across two studies revealed a very straightforward story.

First of all, no short-term effects were found of the Paris and Brussels attacks, both in Study 1a and 1b. In other words, Hypothesis 1 about short-term terror effects was not confirmed. Furthermore, and opposing pessimistic results by Davis and Silver[12], Echebarria-Echabe and Fernàndez-Guede[20] and Crowson and colleagues[34], this absence of outgroup bias inflation occurred for both members of outgroups that were directly involved in the events, and those who belonged to outgroups that were unrelated. In other words, Hypothesis 2 about a potential 'secondary transfer effect' was also not confirmed. Notably, Jungkunz and colleagues[24] revealed similar findings in Germany after the 2015 Paris attacks. Thirdly, our results corroborate previous findings[16,20,22,23] regarding the absence of long-term psychological consequences of terrorist attacks (i.e., Hypothesis 3 was partly confirmed).

Study 1a revealed small long-term effects towards more outgroup tolerance and less outgroup bias three months after the Paris attacks, although Study 1b failed to replicate this pattern of results three months after the Brussels attacks. Likewise, Study 1b did not provide any further evidence for long-term 'secondary transfer effects'. As such, in general, our results underscore the limited impact of terrorist events on the intergroup attitudes of majority

members, both towards involved and uninvolved outgroups, and both in the immediate aftermath of such attacks as well as in the long run.

Terrorism Failed To Impact Reactions To The Refugee Influx

Our findings reveal two important nuances in the polarized debate around the psychological effects of terrorism. Firstly, they demonstrate that terrorism does not necessarily impact reactions to the refugee influx. Secondly, they suggest that there are limits to the amount of influence a traumatic event can have on individuals that were indirectly exposed to it. One alternative explanation as to why outgroup attitudes were not (significantly) revised after the Paris and Brussels attacks, is offered by the work of Meeussen and colleagues[35]. In their study, participants' attitudes towards Moroccans were measured before and after the murder of a Dutch celebrity, Theo Van Gogh, by a Moroccan. Results revealed that, compared to those perceiving the killer as a typical Moroccan, participants who perceived the offender as less typical for the outgroup, were less likely to change their attitudes as a consequence of the murder. It could therefore still be possible that our respondents either did not perceive the perpetrators of the attacks as typical enough for the entire outgroup, or that they were perceived as a 'black sheep'. In the same vein, Sniderman, Petersen, Slothuus, and Stubager[36] revealed that Danish majority citizens draw a sharp distinction between Muslim immigrants and Islamic fundamentalists, which provides a so-called "solid wall" that protects the rights of and relations with ethnic-cultural minorities in Denmark. Further research on such typicality effects could further clarify this issue.

Future studies should also aim to deepen our understanding of the perspective-taker's views by directly comparing the reactions of victims and uninvolved bystanders in the face of terror. Obviously, this kind of study requires another kind of planning and preparedness than the usual attitude study, and the data for this study, comparing pre- and post-terror attitudes within the same individuals, was already hard to collect. Unexpectedly, a small trend towards

more outgroup tolerance in the long run was discovered after the Paris (but not the Brussels) attacks. In other words, it seems that such extreme, real-life events that go beyond mild offenses or small transgressions cannot change already-present outgroup attitudes within individuals. Conversely, our results seem to suggest that people, as a sort of 'psychological defense mechanism', react by mitigating their attitudes towards other members of the group to which the perpetrators belong, but who were not involved in the events. Of course, more research is needed to investigate this premise.

Limitations and Directions for Future Research

Evaluating attitudinal changes using independent, large and representative samples is worthwhile, and future studies could further deepen our understanding by collecting pre- and post-conflict measurements across a variety of settings. Our findings serve as a first attempt here, but have to be treated with caution considering for a number of reasons.

First of all, the use of self-report ratings is never without its shortcomings, and self-presentation bias (e.g., socially desirable responding) may have been an issue. Especially three months after traumatic events such as the Paris and Brussels attacks, respondents may have been keen to demonstrate that they did not start to stigmatize certain uninvolved outgroups as a consequence of these attacks. Moreover, the wording of some of our items (e.g., 'I have positive feelings towards terrorists', see Appendix) and lack of reverse-coded items may have further evoked such self-presentation strategies. Nevertheless, the questions we used have been validated and shown to yield a reliable measure of outgroup attitudes in past research on intergroup relations[26;28]. In any case, future research may consider the employment of more implicit measures, such as the Implicit Association Test (IAT[37]), which covertly measures how strongly people associate, for example, certain outgroups with specific stereotypes, or positive/negative feelings. Such a combination of self-reports and implicit measures could thus serve as a powerful approach[38].

Secondly, we acknowledge that both of our sample sizes were relatively modest in size, and that especially Study 1b was underpowered to find a potential effect of terrorist threat. Nevertheless, in both studies, Bayes factors provided converging evidence for null results. Given that the reliability of these statistics does not depend on sample sizes, our findings cannot be attributed to lack of statistical power alone.

Finally, it must be noted that our study did not incorporate any psychological characteristics of our participants. Obviously, this was due to practical reasons - since we were unaware at T1 about the upcoming attacks in both Brussels and Paris, and hence could not adapt our questionnaire as such. Nevertheless, it stands to reason that our null effects could partially be explained by a (lack of) variation in traits associated with heightened propensity for outgroup derogation, such as authoritarianism[39] or social dominance orientation[40]. Given that there is preliminary evidence suggesting that the effects of terrorism vary as a function of preexisting psychological differences[24;41], we strongly advise future researchers to study in depth how terrible events such as acts of terrorism interact with specific psychological characteristics of the persons involved, in order to bring nuance to an already polarized debate.

Concluding Remarks

The present study investigated the short-term and long-term effects of the terrorist bombings in Paris and Brussels on attitudes towards related (Muslims) and unrelated (immigrants and refugees) outgroups. Intriguingly, our findings do not corroborate pervious work[15;16] showing that terrorist attacks negatively impact people's feelings towards Muslims. In contrast, we found no evidence for any attitudinal changes, not towards Muslims, nor towards refugees, nor towards immigrants in general.

Although terrorism and immigration are not directly linked, several sources have claimed that terrorist events will lead majority members to perceive refugees as an imminent

threat[16;17;42]. The current contribution adds nuance to this polarized debate by showing no clear effects of terror on refugee attitudes, and even small trends towards more tolerance in the long run. Our results cannot easily be disregarded, given their unique methodology (i.e., pre- and post-attack measurements within the same individuals) and ditto samples. Nevertheless, taking into account study's limitations, it is hard to draw firm conclusions about the causal relationship between terrorist activity and outgroup attitudes.

More than anything, our findings underscore the importance of social-psychological studies explicating the conditions under which such global events can worsen or even improve intergroup relations. As a consequence, the results of such additional studies can then offer clear recommendations for an organized, humanitarian handling of refugees and other immigrants, and the accompanied abrupt rise in ethnic and cultural diversity. To conclude, we hope that this contribution may inform policy makers, agencies, and organizations aiming to build more harmonious intergroup relations in their local communities[43]. Moreover, we hope this contribution draws attention to the hitherto less explored but nevertheless important social-psychological attitudinal consequences of terrorist attacks, and that the current set of studies serves as a first attempt to comprehend the understanding and promotion of positive intergroup relations in the face of terror.

Notes

† All marginally significant results corroborated the trend towards more intergroup tolerance. Specifically, pairwize comparisons of the marginally significant short-term effect in Study 1a indicated a slight increase in positive feelings towards Muslims one week after the Paris attacks compared to one week before (ΔT2-T1 = 0.32; p = .08). Similarly, pairwize comparisons of the marginally significant long-term effects on refugee attitudes in both Study 1a and 1b indicated an increase in positive feelings towards refugees three months after as opposed to one week after the Paris attacks (ΔT3-T2 = 0.71; p = .03) and a slight decrease in threat feelings towards refugees three months after compared to one week after the Brussels attacks (ΔT3-T2 = -0.26; p = .07). Finally, analyses controlling for participants' age and gender yielded very similar results.

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Tables

Table 1.

Means and standard deviations (in brackets) on each outcome.

Dependent Variable	T1	T2	T3
Study 1a			
Positive feelings towards terrorists	1.44 (1.39)	1.24 (0.95)	1.04 (0.19)
Positive feelings towards Muslims	5.26 (2.44)	5.66 (2.32)	6.08 (2.13)
Positive feelings towards refugees	5.30 (2.29)	5.19 (2.37)	5.49 (2.34)
Trust towards immigrants	3.72 (1.39)	3.73 (1.46)	3.98 (1.49)
Threat towards immigrants	3.69 (1.32)	3.62 (1.53)	3.32 (1.37)
Prejudice towards immigrants	2.03 (1.17)	2.11 (1.18)	2.13 (1.20)
Study 1b			
Positive feelings towards refugees	5.34 (1.24)	5.13 (1.28)	4.87 (1.33)
Trust towards refugees	5.00 (1.34)	4.92 (1.36)	4.83 (1.27)
Threat towards refugees	3.26 (1.33)	3.17 (1.42)	2.90 (1.30)
Avoidance of contact with refugees	2.26 (1.33)	2.26 (1.35)	2.67 (1.66)

Table 2.

Bayes factors for the short-term and long-term effects on each outcome, comparing the probability of the H^a model (i.e., "there is an effect") being true as opposed to the H^0 model (i.e., "there is no effect") being true.

Dependent Variable	Bayes Factor Short-term Effect	Bayes Factor Long-term Effect
Study 1a		
Positive feelings towards terrorists	0.369	0.593
Positive feelings towards Muslims	0.840	13.98
Positive feelings towards refugees	0.205	1.18
Trust towards immigrants	0.166	0.321
Threat towards immigrants	0.175	20.40
Prejudice towards immigrants	0.298	0.071
Study 1b		
Positive feelings towards refugees	0.392	0.927
Trust towards refugees	0.252	0.340
Threat towards refugees	0.260	0.328
Avoidance of contact with refugees	0.233	0.269

Appendix

List of items used to assess outgroup attitudes in Study 1a and Study 1b.

Study 1a

Positive feelings towards terrorists:

- 'I have positive feelings towards terrorists'

Positive feelings towards Muslims:

- 'I have positive feelings towards Muslims'

Positive feelings towards refugees:

- 'I have positive feelings towards refugees'

Trust towards immigrants:

- 'Most people of non-Western-European origin can be trusted'

Threat towards immigrants:

- 'Immigrants nowadays have too much political power and responsibility in our country'
- 'I think the immigrants in Belgium do not have the same mentality as native Belgians'

Prejudice towards immigrants:

- 'All things taken together, the White race is superior over other races'
- 'It is best if people with different ethnicities have as little contact with each other as possible'
- 'Our country should never have permitted immigrants to enter'
- 'We must ensure that we keep our ethnicity clean and prevent mixing with other ethnicities'

Study 1b

Positive feelings towards refugees:

- ‘I have positive feelings towards Syrian refugees’

Trust towards refugees:

- ‘I trust Syrian refugees’

Threat towards refugees:

- ‘The presence of refugees in our country has a negative impact on the Belgian economy’
- ‘Refugees make it more difficult for native Belgians to find a good job’
- ‘The values and standards of refugees are generally different from the values and norms of native Belgians’
- ‘I think the refugees in Belgium do not have the same mentality as native Belgians’

Avoidance of contact with refugees:

- ‘I avoid contact with Syrian refugees’