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Political Psychology

The affective nexus between refugees and terrorism: A panel study on how social media use shapes negative attitudes toward refugees

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Abstract

Social media, as an important resource of information for many contentious topics, has great affective potential in terms of anger and fear. We investigated how exposure to news about refugees on social media is related to negative attitudes toward refugees as well as attitudinal differentiation with respect to Muslims and terrorists. A two-wave panel survey ($N_{T2} = 524$) showed that social media use about refugees was not directly related to negative attitudes and attitudinal differentiation. However, we found that anger served as the affective nexus between the refugee topic and the terrorism topic: Social media use about refugees led to more anger about terrorism over time, which in turn led to more negative attitudes toward refugees. Fear with respect to terrorism did not play a role in this process. Overall, our findings underline the key role of anger, but not fear, when trying to understand negative reactions toward refugees.

KEYWORDS

anger, attitudinal differentiation, fear, refugees, social media, terrorism

Following the so-called "refugee crisis" in Europe in 2015 (UNHCR, 2015), anti-immigration activists have put forth the argument that an uncontrolled refugee flow may come with a serious terrorism threat (Galantino, 2022). At the same time, the vast majority of refugees have no intentions of terrorism, and only a small number of Islamist terror acts were carried out by perpetrators that came to the European Union through refugee routes. Nevertheless,

scholars have observed that general attitudes toward refugees are related to perceptions of terrorism threats (Álvarez-Benjumea & Winter, 2020; Ferrín et al., 2020; Nussio et al., 2019). To understand this relationship, scholars have pointed to the role of the media (Ahmed & Matthes, 2016). In fact, political psychologists have a good understanding of how news reports about refugees shape terror-related attitudes (Bauder, 2008; Matthes et al., 2020).

However, when it comes to social media, our knowledge is limited. There are grounds to assume that particularly social media may serve as a catalyst for negative emotional reactions. In a nutshell, as has often been argued (e.g., Bivens, 2008), social media does not need to align with established journalistic norms, and it does not need to provide a balanced view of the refugee crisis and carefully evaluate the facts. On social media, threats with respect to refugees may be exaggerated, and refugees may be connected to negative associations such as terrorism. In fact, crime and threat-related themes are overrepresented when discussing refugees on social media (Pöyhtäri et al., 2021).

Despite the relevance of social media, there is a lack of research on the consequences of social media use for attitudes about refugees. We argue that social media use may strengthen the nexus between refugees and terrorism, and it does so by eliciting emotions. Emotions are understood as "internal, mental states representing evaluative, valenced reactions to events, agents, or objects that vary in intensity… short-lived, intense, and directed at some external stimuli" (Nabi, 1999, p. 295). They are crucial elements of how people respond to various life experiences (Nabi, 1999). Prior studies show that negative emotions, particularly anger and fear, experienced by the public in the wake of terrorist attacks can profoundly influence their policy preferences (Lerner et al., 2003; Skitka et al., 2006; Vasilopoulos et al., 2019). Given the political significance of these negative emotional responses, it is important to investigate how social media use can foster terrorism-related negative emotions and attitudes toward outgroups.

In particular, our contribution to political psychology is threefold: First, our study is the first to test the theory that social media use about refugees is linked to people's emotional reactions with respect to terrorism. Social media can be theorized to accelerate the activation and spreading of negative emotions (Papacharissi, 2015). So far, however, most research has dealt with emotional responses to terrorism news in traditional media. Our theory is that the more individuals are exposed to news about refugees on social media, the more they react with fear and anger when it comes to terrorism. We theorize, for the first time in extant research, that *social media may potentially serve as a catalyst for the generation of anger and fear*, which then in turn shape attitudes toward refugees. Second, we examine the impact of these emotional reactions on two outcomes, negative attitudes toward refugees and attitudinal differentiation. Attitudinal differentiation, that is, whether individuals differentiate between the category of Muslims and the category of terrorists, is a novel addition to this literature (von Sikorski et al., 2022). This concept is relevant because citizens' lack of differentiation between the two groups helps us to understand why Muslims are often treated with contempt. Third, we employ panel data allowing us not only to examine the hypothesized relations, but also test reciprocal relationships. That is, rather than establishing a simple relationship between two (or more) variables, we can explicitly test the directionality of the relationships, albeit in noncausal ways.

SOCIAL MEDIA USE ABOUT REFUGEES

Social media use plays a key role in shaping citizens' views about refugees. Research in the field of political psychology has stressed the importance of the internet and online platforms for citizens' political information seeking (e.g., Valentino et al., 2008, 2009; Wollebæk et al., 2019). Particularly, these studies have focused on the role of emotions, such as anger and anxiety, for

citizens' political behavior. For example, exposure to political threats online can lead to anxiety, and feelings of anxiousness may increase individuals' political information seeking and learning (Valentino et al., 2008). Anger, in contrast, may depress information seeking in this context (Valentino et al., 2008). In a similar manner, a more recent survey study showed that anger is positively associated with engagement in like-minded or cross-cutting online political debates (Wollebæk et al., 2019). Angry individuals, however, tend to more frequently seek out information that is in line with their opinions, whereas anxious citizens tend to seek out information contradicting their worldviews (Wollebæk et al., 2019). Oftentimes, and particularly on social media, citizens couple the terror attacks that took place in many European countries with the "refugee crisis" (De Coninck, 2020; Galantino, 2022). As such, many Europeans strongly associate refugees with terrorism (De Coninck, 2020).

Guided by prior studies on the role of media in facilitating negative emotions concerning terrorism and attitudes toward associated outgroups (Iyer et al., 2014; Nabi, 2003; Solloway et al., 2013), we argue that social media use is a continuation of this pattern. Social media platforms serve as a primary source of information during terrorist attacks (e.g., Steensen, 2018), allowing members of society to learn and share about it. Similar to the established effect of negative news media coverage, Schmuck et al. (2020) reported that exposure to negative portrayals of Muslims on social media reinforces anti-Muslim attitudes. In addition, several studies showed that the image of Muslims on social media is overwhelmingly negative and hate against the Muslim community particularly high, especially in the aftermath of terrorist attacks (Farkas et al., 2017; Kaakinen et al., 2018). Biased information about refugees and migrants, such as associating refugees with terrorism, is also likely to be prevalent on social media due to the lack of fact-checkers and gatekeepers. Thus, when people engage in social media use related to refugees and migrants in Europe, users are likely to be exposed to information about their role in terrorist activities—for instance, exposure to information about a Muslim migrant as an attacker or a facilitator of an attack, resulting in intense negative emotional responses regarding terrorism.

Lazarus (1991) contends that emotions are human responses to environmental changes and stimulation and important tools for coping and adaptation. In the context of terrorism, scholars mostly study negative emotions such as anger and fear (for empathy as a relevant positive emotional response, see Korstenbroek, 2022). Anger and fear are primary emotions that are aversive in nature, that is, they are experienced as negative and characterized by arousal and anticipated effort (e.g., Smith & Ellsworth, 1985). According to Lazarus (1991), negative emotions, such as anger and fear, arise from goal incongruence. We incorporate emotion into social media use effects studies. To this end, we rely on the theory of cognitive appraisal (Lazarus, 1991) and the theory of affective intelligence (Gray, 1987; Marcus et al., 2000).

According to affective intelligence theory, both positive and negative emotions activate different cognitive processes for coping with the environment (Gray, 1987; Marcus et al., 2000). It argues that all emotional reactions fit into either the disposition or the surveillance system. Positive emotions encourage habit reliance and the functioning of the disposition system. The surveillance system is activated during negative emotions, such that an individual becomes less reliant on habits and dispositions, usually due to a specific threat (Marcus et al., 2000; Weber, 2012). In short, the way individuals interpret threatening stimuli determines whether they operate in a disposition or a surveillance system (Marcus et al., 2000; Weber, 2012). Fear is at the heart of this theoretical framework because it motivates people to use a surveillance system (Weber, 2012). Fear is triggered by unusual or unexpected stimuli/events that foreshadow risk or the likelihood of unpleasant results (Valentino et al., 2011), such as terrorist attacks. Cognitive appraisal theories hold that emotions arise from the interactions between a person and their context (Lazarus, 1991; Roseman, 1991; Smith & Kirby, 2001). It argues that, when faced with stressful events, appraisals of attribution and control of the situation

facilitate feelings of anger and fear separately. Although both anger and fear are negative emotions, they differ in key dimensions (Lerner & Keltner, 2001; Weber, 2012). For example, anger develops when danger is attributed to a certain source and people feel in control of the situation (Averill, 1983; Lerner & Keltner, 2001; Weiner et al., 1982), and fear arises when people are unsure of the cause of the danger and feel like they are losing control of the situation (Averill, 1983; Lazarus, 1991; Marcus & Mackuen, 1993). For conceptual clarity, it is important to highlight that fear constitutes the response to an external stimulus or threat that is "imminent or immediate," while anxiety is directed at sources of harm that are "uncertain or … distal in space or time" (LeDoux & Pine, 2016, p. 1084).

On social media, frequent users are likely to get exposed to information not differentiating between terrorists and ordinary outgroup members. While scholars have attended to the role of social media during terrorist attacks (Farkas et al., 2017; Kaakinen et al., 2018), the question of how social media use might affect the negative emotional responses of the public associated with terrorist attacks has not been fully explored. Therefore, scholarly investigation of the public's negative emotional reactions to terrorism driven by their social media use related to often reportedly responsible groups is limited. Drawing on the above-discussed theoretical frameworks, we assume that the more people engage with information about refugees and migrants on social media, the angrier they are likely to get because they have someone—for example, Muslim refugees and migrants—to blame for terrorist activities. Individuals are also more likely to feel fearful because they see the rising number of refugees and migrants in the society who are often associated with terror activities in public discourse, perceiving themselves more susceptible to the threat of a terrorist attack. Thus, this study proposes that anger and fear regarding terrorist attacks will be elicited as a result of using social media related to refugees and migrants:

> **H1.** Social media use about refugees is positively related to (1) anger and (2) fear with respect to terrorism over time.

CONSEQUENCES OF ANGER AND FEAR

Past studies have consistently found a link between terrorism and negative attitudes toward immigrants and refugees (Das et al., 2009; Ferrín et al., 2020; Nussio et al., 2019; for meta-analytic evidence, Godefroidt, 2022). After two Islamist terrorist attacks, hate speech toward refugees increased, while hate speech toward other minority groups stayed consistent (Álvarez-Benjumea & Winter, 2020). These results depended on eroding social norms. Further, terrorist attacks in countries neighboring Germany predicted anti-refugee violence in Germany (Jäckle & König, 2018).

Social identity theory (SIT; Tajfel & Turner, 2004) and the *psychology of anger and fear* can explain the increase in negative attitudes toward refugees in the wake of terrorism. In particular, political psychology research has explored the role of emotions in the context of terrorism. Vasilopoulos et al. (2018) investigated individuals' adoption of authoritarian policy preferences in response to the January 2015 Paris terror attacks and showed distinct effects of anxiety and anger. Whereas anxiety about the Paris terror attacks led left-wing voters to shift toward the adoption of authoritarian policies, there was no such change in individuals with right-leaning political preferences. However, anger about the attacks did not strengthen left-leaning individuals' adoption of authoritarian policy preferences, but it did so among right-wing voters (Vasilopoulos et al., 2018). In the context of the November 2015 Paris attacks, Vasilopoulos and Brouard (2020) showed that individuals' system-justifying attitudes, that is, individuals' psychological motivation to bolster the social system of one's belonging, were negatively

correlated with experiencing fear and anger related to the terror acts. The role of emotions has also been explored in the context of counterterrorism policies. With cross-sectional survey data, Erisen et al. (2020) showed that immigration-related anger was associated with opposition to a common EU counterterrorism strategy. In contrast, anxiety about immigration was related to support of such counterterrorism policy (Erisen et al., 2020).

Although this stream of research has generated important insights, there are also significant gaps. Erisen et al. (2020), for instance, investigated emotions about immigration rather than terrorism, which are distinct concepts. The study revealed the role of immigration-related emotions in individuals' EU policy attitudes but lacks the investigation of social media. Although the studies by Vasilopoulos et al. (2018) as well as Vasilopoulos and Brouard (2020) provide important insights into terrorism-related emotional responses, that is anger and anxiety, they also did not investigate what role the social media play in this context. We argue that individuals' social media use accelerates negative emotional reactions, and therefore, it is crucial to investigate the role of social media more closely. What is more, these studies examined different attitudinal variables. That is, although there is a theoretical overlap between adoption of authoritarian policy preferences and negative attitudes toward refugees, these are distinct concepts that require scholarly attention. In addition, the two studies utilized the very specific context of the Paris terrorist attacks in January and November 2015. For instance, the Paris attacks in November 2015 were one of the first major terrorist attacks committed by the so-called Islamic State in Europe (Europol, 2016). The attacks may have been more unexpected and surprising in comparison to later terror attacks that were executed in Europe. The timing also coincided with the European "refugee crisis", making both topics highly salient in the media. However, it is crucial to investigate emotions related to terrorism and attitudes toward refugees in different contexts and also years after the first Islamic State terrorist attacks in Europe.

On a theoretical level, emotional states shape cognitive and behavioral outcomes. Specifically, arousal is associated with decreased motivation and ability for complex cognitions and increased reliance on heuristics, such as stereotypes, which preserve cognitive energy (Macrae et al., 1994). In particular, fear messages have been associated with heuristic processing, and anxiety is associated with social stereotypes (Wilder, 1993). Stereotypes always relate to social group categorizations and evaluations—which makes a short explanation of SIT (Tajfel & Turner, 2004) necessary. The theory postulates that humans as social animals identify with certain social groups (ingroup), thereby distancing themselves from the "other" (outgroup). Social psychology established that, in an effort to maintain and uphold self-esteem, ingroup members tend to be evaluated more favorably than outgroup members (Brewer, 1979). Group categorization and evaluation are bound to contextual cues and subject to dynamic change (Haslam & Turner, 1992). Intergroup boundaries are, for instance, more salient in the face of threat, facilitating outgroup categorization (Miller et al., 2010). Research further suggests that stereotypes are increased if the specific emotion matches the stereotype—as anger-reinforced bias against Arabs (Dasgupta et al., 2009).

As previously discussed, feeling fear can impact judgments with respect to refugees (Skitka et al., 2006). Further, fear positively predicted support for precautionary measures (Lerner et al., 2003). In related terms, exposing participants to a threatening news story about immigration evoked intergroup anxiety, which in turn affected their attitudes toward immigrants' human rights and attitudes toward immigration policy (Atwell Seate & Mastro, 2016).

Similarly, anger can also shape attitudes and policy preferences with respect to refugees. Past studies found a positive relationship between anger and counterterrorism policy preferences (Kim, 2016), particularly support for military interventions (Skitka et al., 2006). Anger also positively correlated with anti-immigration policy preferences and support

for restricting civil liberties (Kim, 2016). Correlational data supports the notion that fear (De Coninck et al., 2018) is associated with more negative attitudes toward immigrants and refugees. A large panel study from Germany further shows that negative emotions, including fear and anger, are positively associated with immigration concerns (Deole & Huang, 2022). Similar to the neighboring Germany, Austria was largely affected by the refugee crisis. In 2015, requests for asylum to Austria peaked with 88,340 applications (Bundesministerium für Inneres, 2019)—a considerable number of refugees, given that Austria's population stood at 8.64 million. This was reflected in public opinion, with 20% of Austrians indicating that immigration was the most important issue to be tackled by their country (European Commission, 2019). Austria can be considered as culturally close to Germany because of the shared language, geographical proximity, and overlaps in the media market. While Germany experienced a number of terrorist attacks, for example, the Berlin truck attack (2016) and the Würzburg train attack (2016), Austria did not experience a fatal Islamist terrorist attack until the Vienna attack in 2020. Thus, Austria's terrorism index 2019 was 1.66, indicating a lower terrorist activity for the past five years than Germany (4.25), France (5.01), or the United Kingdom (5.41) (Institute for Economics & Peace, 2019).

Still, the question of how anger and fear relating to terrorism are associated with attitudes toward refugees over time remains. Testing this assumption over time offers valuable new insights and answers the call for longitudinal studies in the context of terrorism (Godefroidt, 2022). Building on SIT (Tajfel & Turner, 2004), the outgroup homogeneity effect (Park & Rothbart, 1982), and the psychology of anger and fear, we assume that anger and fear will be associated with more negative attitudes toward refugees over time:

> **H2.** (1) Anger and (2) fear with respect to terrorism are positively related to negative attitudes toward refugees over time.

We theorize that negative emotional reactions with respect to terrorism may also influence an individual's thinking about religious outgroups. More specifically, closely related to negative attitudes toward refugees is the question of attitudinal differentiation with respect to Muslims. Attitudinal differentiation refers to the extent to which individuals perceive the difference between ordinary Muslims and Islamist terrorists (Kaskeleviciute et al., 2023; see also Park & Rothbart, 1982). Thus, the concept of attitudinal differentiation tells us something about the perceived heterogeneity of an outgroup. In the context of Islamist terrorism, both terrorists and Muslims are perceived as outgroup members. Yet, the question is whether individuals will perceive Islamist terrorists and Muslims as two clearly distinguishable categories. More specifically, differentiation means that Muslims are not automatically associated with terrorists. This is important because during the refugee crisis, with many refugees coming from Muslim countries, individuals may or may not generalize Muslim refugees to be terrorists, fundamentally shaping intergroup behavior. Attitudinal differentiation cannot only manifest in individuals' attitudes but also in news reporting (von Sikorski et al., 2017), that is, the degree to which news articles differentiate between Muslims on the one hand and terrorists on the other.

It is well established that negative emotions toward outgroup members can foster stereotypic thinking (Wilder & Simon, 2003). As for fear, research suggests that intergroup-related aversive affect can decrease the cognitive resources to arrive at differentiated judgments. In fact, "studies suggest that intergroup anxiety may lead to the perception that outgroups are dissimilar, but homogeneous, perhaps as a way of simplifying interaction with them" (Stephan, 2014, p. 246). In the case of terrorism, fear and anxiety may center around terror threats, limiting

cognitive resources, and therefore fostering simplified stereotypic thinking (Stephan, 2014), such as not differentiating between Muslims and terrorists.

Likewise, it has been shown that anger, as a high-certainty emotion signaling readiness for action (Bodenhausen et al., 1994), leads to a reliance on heuristic cues, therefore fostering a superficial, nonanalytic style of information processing (Bodenhausen et al., 1994; Moons & Mackie, 2007). When people experience anger as for instance about terrorism, they will be highly physiologically aroused. This, in turn, decreases the cognitive capacity and makes simplified, stereotypic judgments more likely. In short, "anger-related arousal reduces capacity and may limit angry people's ability to process analytically" (Bodenhausen et al., 1994, p. 707), and this fosters undifferentiated thinking.

Adding another layer to that, the outgroup homogeneity effect (Park & Rothbart, 1982) postulates that ingroup members are perceived as being more diverse compared to rather homogeneous outgroup members, especially in natural groups (Ostrom & Sedikides, 1992). We propose here that, similar to stereotypical thinking, outgroup homogeneity, such as lumping the mental representations of Islamist terrorists and refugees together, may be fostered in states of anger and fear relating to terrorism. Taken together, we can clearly predict:

> **H3.** (1) Anger and (2) fear with respect to terrorism are negatively related to attitudinal differentiation over time.

RECIPROCAL RELATIONSHIPS

So far, we theorized that social media use about refugees can fuel anger and fear with respect to terrorism. Further, we argued that such emotional reactions have consequences for attitudes toward refugees as well as attitudinal differentiation. Of course, alternative causal directions are also possible. For instance, it is conceivable that those with intergroup anxiety, manifesting in negative attitudes toward refugees, or those with undifferentiated views about Muslims will experience more anger and more fear with respect to terrorism (Stephan, 2014; Wilder & Simon, 2003). Also, anger and fear may lead to an increase in social media use because terrorism refers to a threatening and highly relevant situation, potentially leading to an increased reliance on one's personal networks or to information searches. By the same token, since explicit attitudes have been found to serve as predictors of media selection, negative attitudes toward refugees and undifferentiated opinions about Muslims could also influence social media use over time (see Arendt et al., 2016). Finally, attitudes toward refugees could be reciprocally related to differentiation: Those who differentiate between Muslims and terrorists may have less negative attitudes toward refugees, because they will not imply that refugees in Europe, most of them with Muslim faith, will be potential terrorists. Likewise, those with more negative attitudes toward refugees may apply stereotypic thinking toward Muslims as well, making it less likely to hold differentiated attitudes. Looking into such reciprocal relationships helps us to disentangle the direction of the effects. Given the lack of prior research, we ask:

> *RQ1: What are the reciprocal relationships between social media use, emotional reactions with respect to terrorism, negative attitudes toward refugees, and attitudinal differentiation?*

The hypothesized model is visualized in Figure 1.

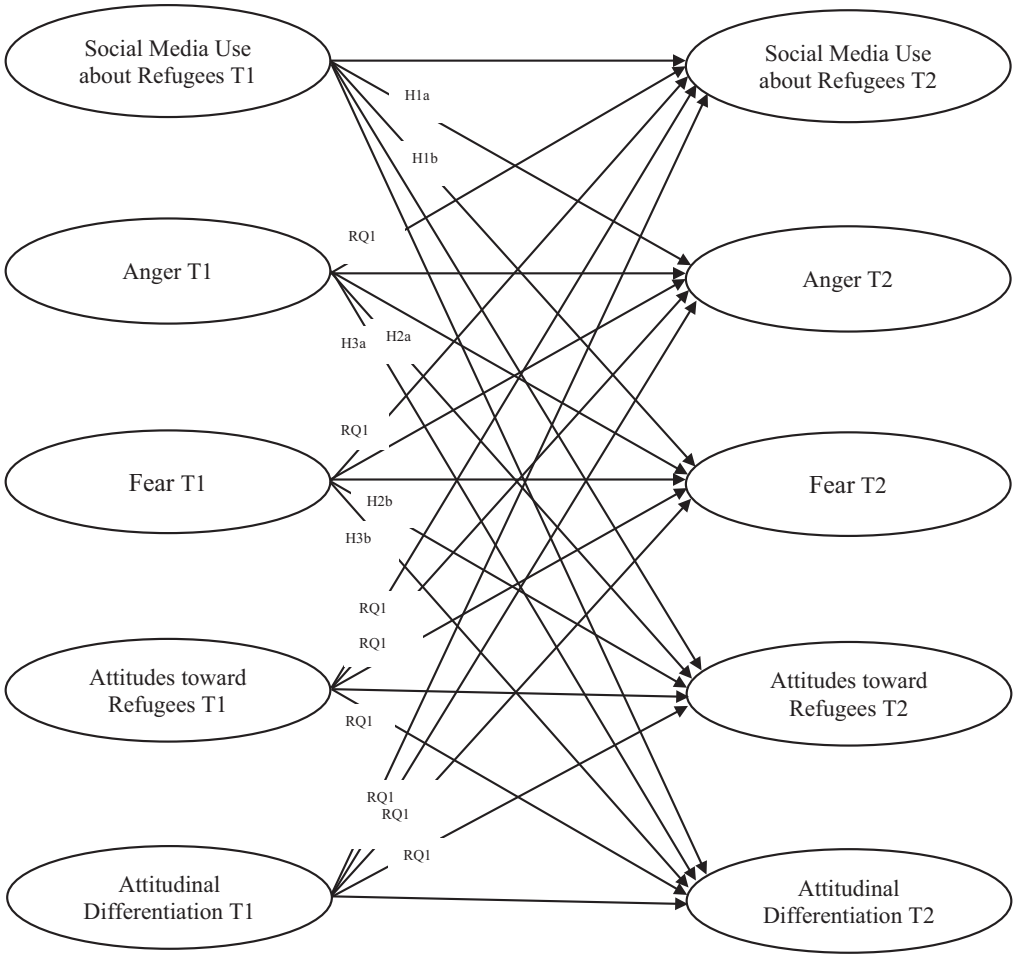

FIGURE 1 Hypothesized model depicting the relationships between social media use, anger and fear reactions to terrorism, attitudes toward refugees, and attitudinal differentiation. Ovals represent latent variables. Control variables age, gender, education, political ideology, and political media use, as well as error terms and covariances are not shown. T1 = Time 1, T2 = Time 2.

METHOD

The study is based on data from a two-wave panel survey ($N = 524$) that was conducted in Austria by Dynata.[1] The first wave was undertaken between July 24 and August 6, 2019. The second wave was carried out from September 13 to 21, 2019. We employed quota sampling with regard to age (range 18 to 81, $M = 49.40$, $SD = 15.28$), gender (49.4% female), and education (49.2% finished high-school, 22.7% finished higher education; does not completely follow the quota); 1,105 participants (in total, 1,206 started the survey) finished the survey in the first wave, and 564 respondents completed the questionnaire in the second wave. The retention rate was 51% between the two waves. The final sample included cases that responded in more than 10 minutes as the questionnaire was 25 minutes long. The speeders were excluded from the sample in order to improve the quality of data (see, e.g.,

[1]The data from the same data collection was also used in another article on terrorism and media bias by Kaskeleviciute and Matthes (2023). However, none of the independent and dependent variables are the same across the two studies.

Malhotra, 2008). Our final sample thus consisted of 524 participants. In an attrition analysis, we made comparisons between the valid cases that answered in wave 1 and the valid cases that participated in both waves. Respondents who finished both waves were significantly older ($M = 49.40$, $SD = 15.28$) as compared to participants who only took part in the first wave ($M = 44.80$, $SD = 16.37$), $t(1033) = -4.66$, $p < .001$. Systematic difference did not occur in respondents' gender, $\chi^2(1, N = 1035) = 3.68$, $p = .055$, or education $\chi^2(2, N = 1035) = 3.68$, $p = .159$. More importantly, we observed no statistically significant differences between those who participated in both waves and those who left after completing wave 1 regarding social media use ($t(983) = .35$, $p = .35$), anger ($t(1129) = -1.13$, $p = .26$), fear ($t(1102) = -.69$, $p = .49$), and attitudes ($t(1102) = -.69$, $p = .50$).

Measures

Dependent variables were measured on Likert-type scales ranging from 1 (*fully disagree*) to 7 (*fully agree*) unless indicated differently. Control variables were measured in the first wave.

Social media use about refugees

Based on Matthes et al. (2023), respondents answered how often they (1) use social media such as Facebook, Instagram, Twitter, or Youtube to find out about migration and refugees and (2) share, post, or comment on social media about migration and refugees (Spearman-Brown coefficient $(\rho)_{w1} = .72$, $M = 2.45$, $SD = 1.48$; Spearman-Brown coefficient $(\rho)_{w2} = .71$, $M = 2.40$, $SD = 1.41$; from 1 [*never*] to 7 [*very often*]).

Anger and fear with respect to terrorism

In line with previous studies (e.g., Iyer et al., 2014; Nabi, 2002; Nussio, 2020; Vasilopoulos, 2018), emotions were assessed by asking participants to indicate the extent to which they felt anger and fear when thinking about terrorist attacks. The items were partly based on Iyer et al.'s (2014) fear and anger measures. *Anger* was assessed with two items (anger, rage; Spearman-Brown coefficient $(\rho)_{w1} = .89$, $M = 5.79$, $SD = 1.51$; Spearman-Brown coefficient $(\rho)_{w2} = .87$, $M = 5.65$, $SD = 1.59$). Similarly, two items measured *fear* (fear, being afraid; Spearman-Brown coefficient $(\rho)_{w1} = .97$, $M = 4.40$, $SD = 1.95$; Spearman-Brown coefficient $(\rho)_{w2} = .97$, $M = 4.22$, $SD = 1.96$). While Iyer et al.'s (2014) original items included one term that captures anxiety rather than fear, this was not the case for the two terms we used.

Attitudinal differentiation

Based on von Sikorski et al. (2017), we measured attitudinal differentiation with four items: "A clear distinction must be made between Islamist terrorists and ordinary Muslims"; "Ordinary Muslims clearly condemn terrorist attacks"; "I think that most Muslims do not approve of terrorist attacks"; and "The majority of Muslims have nothing whatsoever to do with terrorism" (McDonald's $\omega_{w1} = .90$, Cronbach's $\alpha_{w1} = .90$, $M = 5.27$, $SD = 1.49$; McDonald's $\omega_{w2} = .91$, Cronbach's $\alpha_{w2} = .91$, $M = 5.34$, $SD = 1.46$).

Attitudes toward refugees

Negative attitudes toward refugees was gauged with three standard items (e.g., Schmuck & Matthes, 2017): "Austria should take in fewer refugees"; "The flow of refugees to Europe should be better controlled"; and "Too many refugees are a danger for Europe" (McDonald's $\omega_{w1} = .95$, Cronbach's $\alpha_{w1} = .94$, $M = 4.93$, $SD = 1.87$; McDonald's $\omega_{w2} = .94$, Cronbach's $\alpha_{w2} = .93$, $M = 5.02$, $SD = 1.83$).

Control variables

We controlled for political media use (McDonald's $\omega_{w1} = .59$, Cronbach's $\alpha_{w1} = .61$, $M = 3.93$, $SD = 1.71$). Political media use was measured with four items asking about how many days participants informed themselves about political issues online or offline via quality newspapers (e.g., der Standard, die Presse), freesheets (heute, Österreich), a tabloid newspaper (Kronenzeitung), and the news of national broadcaster (ORF) with a scale ranging from 0 days to 7 days. Moreover, as a central predictor of attitudes toward refugees and Muslims, we controlled for political left–right alignment ($M = 4.72$, $SD = 2.14$). We controlled for age, gender, and education.

Data analysis

Using a maximum-likelihood estimator with full information, we performed structural equation modeling. We computed the comparative fit index (CFI), the Tucker-Lewis-Index (TLI), the chi-squared to degrees of freedom ratio (χ^2/df), and the root-mean-square error of approximation (RMSEA). All autoregressive correlations were controlled for. Data can be accessed online at https://osf.io/wbp9h/.

RESULTS

Measurement invariance

The results are shown in Table 1. Model fit was good: CFI = .99; TLI = .99; $\chi^2/df = 1.28$, $p < .001$; RMSEA = .02, 90% CI [.02; .03]. We examined a longitudinal metric measurement invariance of all latent variables by constraining all factor loadings as equal over time. When comparing the constrained model to the unconstrained model, we found no significant difference in model fit ($p = .12$). Thus, metric invariance over time was established.

Hypothesis testing and research question

In our first hypothesis, we expected that social media use is positively related to anger and fear over time. As Table 1 shows and in line with Hypothesis 1a, social media use predicted anger over time ($b = .10$, $SE = .04$, $p = .012$). However, it was unrelated to fear ($b = -.02$, $SE = .04$, $p = .594$), contradicting Hypothesis 1b. In our second hypothesis, we were interested in the outcomes of anger and fear. We found that anger positively predicted negative attitudes toward refugees ($b = .08$, $SE = .03$, $p = .008$), confirming Hypothesis 2a. However, we found no indication for an association of fear with negative attitudes toward refugees ($b = -.00$, $SE = .02$, $p = .943$). Thus, Hypothesis 2b needs to be rejected.

TABLE 1 Results of the latent variable structural equation model.

	Social Media Use About Refugees (T2)			Anger (T2)			Fear (T2)			Attitudinal Differentiation (T2)			Attitudes Toward Refugees (T2)		
Predictor	***b***	***SE***	***β***	***b***	***SE***	***β***	***b***	***SE***	***β***	***b***	***SE***	***β***	***b***	***SE***	***β***
Gender (T1)	.014	.138	.004	.038	.112	.014	.105	.130	.027	.160	.083	.063	−.040	.080	−.011
Age (T1)	.004	.005	.041	.005	.004	.052	.000	.004	.002	.001	.003	.013	.005	.003	.038
Education (T1)	−.097	.130	−.031	−.011	.105	−.004	−.037	.122	−.009	.003	.078	.001	−.046	.076	−.012
Left–Right alignment (T1)	.003	.038	.005	.103***	.031	.161	.011	.035	.012	.033	.023	.056	.005	.022	.006
Political media use (T1)	.066	.043	.072	−.007	.033	−.009	−.035	.038	−.031	.024	.025	.033	.005	.024	.005
Social media use about refugees (T1)	.696***	.067	.744	.101*	.040	.124	−.023	.043	−.020	−.022	.028	−.030	−.004	.027	−.003
Anger (T1)	−.045	.052	−.041	.586***	.049	.616	−.013	.049	−.009	.009	.031	.010	.081**	.031	.062
Fear (T1)	.021	.039	.026	−.001	.032	−.002	.777***	.038	.760	−.047*	.024	−.070	−.002	.023	−.002
Attitudinal differentiation (T1)	−.082	.062	−.069	−.002	.050	−.001	−.163**	.058	−.110	.752***	.047	.783	−.051	.036	−.036
Attitudes toward refugees (T1)	−.081	.048	−.099	−.042	.039	−.059	−.021	.045	−.020	−.064*	.029	−.098	.873***	.033	.896
R^2	.601			.445			.600			.697			.903		

Note: $N = 524$; T1 = Time 1, T2 = Time 2.

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

In our third hypothesis, we looked at the relation between anger and fear with attitudinal differentiation over time. Again, we found different relations for the two emotions: While anger was unrelated to attitudinal differentiation ($b = .01$, $SE = .03$, $p = .770$), fear was negatively associated with attitudinal differentiation over time ($b = -.05$, $SE = .02$, $p = .047$). Thus, Hypothesis 3a is rejected, while Hypothesis 3b found support. Interestingly, social media use was related to neither attitudes toward refugees ($b = -.00$, $SE = .03$, $p = .895$) nor to attitudinal differentiation ($b = -.02$, $SE = .03$, $p = .423$).

So far, we looked at the paths from social media use to anger as well as fear and finally to attitudes toward refugees as well as attitudinal differentiation. Exploring reciprocal relationships (RQ1), we found that attitudinal differentiation was related to neither negative attitudes toward refugees ($b = -.05$, $SE = .04$, $p = .151$) nor to social media use ($b = -.08$, $SE = .06$, $p = .183$) or anger ($b = -.00$, $SE = .05$, $p = .975$). However, it negatively predicted fear over time ($b = -.16$, $SE = .06$, $p = .005$), meaning that the more people differentiate between Muslims and terrorists, the less fear they experience with respect to terrorism. Negative attitudes toward refugees were negatively related to attitudinal differentiation over time ($b = -.06$, $SE = .03$, $p = .027$), but unrelated to fear ($b = -.02$, $SE = .05$, $p = .647$), anger ($b = -.04$, $SE = .04$, $p = .288$), and social media use ($b = -.08$, $SE = .05$, $p = .095$). Finally, anger and fear were unrelated over time (see Table 1). They also did not predict social media use (anger: $b = -.05$, $SE = .05$, $p = .395$; fear: $b = .02$, $SE = .04$, $p = .594$). When it comes to control variables, left–right alignment significantly predicted anger over time ($b = .10$, $SE = .03$, $p < .001$).

DISCUSSION

We theorized that social media use can strengthen the nexus between refugees and terrorism, and it does so by fueling negative emotions, eventually leading to more negative attitudes toward refugees and to more undifferentiated thinking when it comes to Muslims. We tested this theory using two-wave panel data from Austria. Our findings reveal that social media use about refugees fuels anger with respect to terrorism, but not fear. In line with protection motivation theory (Rogers, 1983), this finding suggests that terrorist incidents may confirm already existing negative associations with refugees that are prevalent on social media. In other words, terrorist incidents may confirm prevalent biased processing with respect to refugees. When there is a terror attack, individuals may say, "I knew it all along" and make the connection to the refugee crisis. Because the originator of the threat can be clearly determined in the eyes of individuals and the threat could also be potentially avoided, anger follows. For fear, we found no evidence for an impact of social media use over time. That is, people may react with anger but still not be afraid of terrorism themselves. This may be explained by the diffuse and unpredictable threat associated with terror events. In other words, even though terror attacks generate enormous media attention, the likelihood of being personally affected by terror in Western Europe is extremely low. Nussio (2020) found similar patterns in individuals' emotional responses in the immediate aftermath of the Berlin truck attack, showing that anger was elevated to a larger extent than fear.

We also found that anger with respect to terrorism fueled negative attitudes toward refugees over time. This indicates that individuals directly or indirectly connect terrorism to the refugee crisis, and they do this via anger. One could speculate that individuals perhaps blame refugees for the terror threats. Again, fear was unrelated to negative attitudes toward refugees. This suggests that anger and fear play different roles for the nexus between refugees and terror: To reiterate, social media use may elicit anger with respect to terrorism, not fear, and anger but not fear shapes negative attitudes toward refugees. Again, one could speculate that fear is not a relevant emotional reaction in this context, because terror events are rather scarce and one is unlikely to be personally affected. That is, while people may not be afraid

of terror, they can still be angry when they are confronted with it, and this shapes attitudes toward refugees.

Interestingly, anger did not decrease attitudinal differentiation over time. However, fear was negatively related to attitudinal differentiation, suggesting that fearful people are less likely to separate Muslims from terrorists, in line with the theory that fear may foster stereotypic thinking. What is more, when looking at reciprocal relations, attitudinal differentiation also negatively predicted fear: People who know that not all Muslims are terrorists are also less afraid of terrorist events. Ultimately, this suggests a reciprocal, spiraling relation between fear and attitudinal differentiation, although additional evidence with better designs is needed to corroborate this claim.

Somehow in line with this, anger and fear were unrelated over time, suggesting that both are explained and fueled by separate mechanisms. Also, while anger was related to the topic of refugees, fear was only related to differentiation between Muslims and Islamist terrorists. Obviously, more research, particularly experimental, is needed to better explain the underlying emotional mechanisms. For now, it seems that anger is the affective nexus between the refugee and the terrorism topic.

Finally, the question arises what kind of dynamic may follow from that. Here, we clearly see that negative attitudes toward refugees did not further fuel negative emotional reactions, nor did it influence subsequent social media use. Thus, the relationships only seem to go in one direction: from social media use to emotional reactions and from those to negative attitudes. Our findings also suggest that social media use about refugees is not directly related to resentments about refugees. The connecting element is anger.

Notably, the relationships between the key variables hold when controlling for individuals' political leaning. Our data showed that individuals leaning right on the political spectrum felt angrier with respect to terrorism over time. However, political alignment was unrelated to anxiety or attitudes. Some research suggests that emotions are highly context dependent, especially when it comes to conflict situations (Halperin & Pliskin, 2015). Previous research has shown that political ideology is a central predictor of stereotypes about refugees, revealing that individuals with right-wing orientation hold more negative stereotypes about refugees (Knappert et al., 2021). Thus, although this is beyond the scope of this article, it is important to acknowledge that, surprisingly, we did not find a relationship between political ideology and attitudes toward refugees or attitudinal differentiation. Future research should explore the role of political ideology in this context more closely.

Limitations and future research

Some important limitations should be acknowledged. To begin with, we only had two panel waves, limiting the ability to test dynamic relationships over time, especially within individuals. Future research should replicate our findings working with more than two panel waves. In particular, future research should also strive to employ fixed-effects models looking into increases and decreases of the focal variables over time. With the present two-wave panel data, a fixed-effect approach has three key limitations. First, "fixed-effects coefficients are also less reliable when the number of time periods is limited" (Hill et al., 2020, p. 362), as is the case for two-panel waves. The fixed-effects model, in a structural equation modeling framework, is more powerful for three or more waves (see Andersen, 2022; Bollen & Brand, 2010). Second, and more importantly, "fixed-effects models should be used with caution when there is little variation in the focal variables" (Hill et al., 2020, p. 362). Given the short time span between the waves and the lack of a major event (i.e., election, terror attack), we cannot assume much variation, for instance, in social media use. Third, the fixed-effects model does not allow us to test for reverse causation, which is a question we asked in the present research. However, future

research should employ more panel waves, for a larger time span, to apply the fixed-effects framework.

Furthermore, self-report measures may suffer from perceptual biases, as social media use about refugees may be under- or overestimated. To account for this, we used a number of theoretically meaningful controls. Related to that, the possibility of third-variable influence cannot be entirely ruled out. Also, our findings are suggestive of a mediating role of anger. Needless to say, this cannot be properly tested with the present data without abandoning the autoregressive panel logic. We therefore refrained from doing that, strictly estimating all relationships across time. What is more, qualitative studies could further enrich the interpretation of the relationships observed in the present article, particularly with respect to the role of fear. As the terms "anxiety" and "fear" are frequently conflated and overlap in their operationalization, future research endeavors should shed more light on the relationships between social media use, (intergroup) anxiety, and fear.

Furthermore, we treated social media use as a rather monolithic category. Ideally, analytical data of social media content and more refined social media use measures should be combined with a panel design to estimate the effects of several content dimensions, depending on user characteristics. Also, it is obvious that the present research needs to be replicated in other European countries and across the world. Finally, research should not only explore negative attitudes as an outcome but also polarization and the debate culture between groups (see Brüggemann & Meyer, 2023).

CONCLUSION

Social media is an important resource on many contentious topics. Our study demonstrated that social media use about refugees can potentially foster negative attitudes toward refugees. It does that via fueling anger associated with terrorism. Therefore, we can conclude that anger, but not fear, serves as the affective nexus between the refugee topic and the terrorism topic. These findings have significant implications for educators, policymakers, and citizens. When discussing the issue of terrorism, for instance, policymakers should not only focus on reducing the public's fears, but they should also take citizens' anger seriously. Likewise, educators need to better understand how citizens can learn to cope with anger-eliciting content on social media. And finally, from a citizen perspective, the specific triggers of anger on social media deserve more attention. Citizens can learn to identify and counter anger-eliciting content, leading to important and exciting avenues for future research.

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DATA AVAILABILITY STATEMENT
The data are available on the OSF: https://osf.io/wbp9h/.

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