"They Are Amongst Us": News About Islamist Terrorism, Perceptions of Sleeper Terrorists, and Negative Stereotypes Toward Muslims in the West

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In the debate around Islamist terrorism, experts and journalists often refer to the notion of "sleeper terrorists." This notion rests on the idea that Islamist terror attacks in the Western world are difficult to prevent because potential terrorists typically live completely ordinary and inconspicuous lives among us while plotting terror attacks. We investigated how exposure to news about Islamist terror relates to audience perceptions of sleeper terrorists and how these perceptions are associated with negative stereotypes about Muslims. A two-wave panel survey conducted in Austria (N_{T2} = 524) showed that exposure to news about Islamist terror was not directly related to negative stereotypes but was positively associated with the perceived existence of sleeper terrorists. These perceptions, in turn, were positively related to negative stereotypes. Additionally, we found a positive association of negative stereotypes with sleeper terrorist perceptions. Implications for news reporting about Islamist terrorism are discussed.

Keywords: terrorism news, Islamist terrorism, sleeper terrorists, stereotypes, Muslims

The Western world[1] has witnessed a concerning amount of Islamist terrorist attacks in recent times (Europol, 2020; see Chuang & Roemer, 2013; Hughes, 2020; Morin, 2016). These acts have received intense media coverage, making terrorism a key topic in social science research in general and communication research in particular (O'Loughlin, 2019). Media often report about terrorists who lived ordinary lives but ended up committing terror attacks without anyone being able to suspect them (Chuang & Roemer, 2013; McCauley & Moskalenko, 2014). "Polite," "kind," and "lovely" are some of the words used in the media to describe these unsuspicious terrorists (Davies & Murphy, 2020). On a seafront promenade in Nice, France, an Islamist terrorist drove a truck to kill 86 people (Strohm, 2017). Other examples include a vehicular attack on a bike path in New York City (Strohm, 2017) as well as knife attacks in Finland or Germany (Europol, 2018).

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Date submitted: 2022-04-30

[1] We rely on the definition of "the West" used for Global Terrorism Index, which includes Andorra, Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, the United States of America, among others (Institute for Economics & Peace, 2022).

These recent acts serve as an example that Islamist terrorists do not always have ties to any particular terrorist organization. In contrast, the attacks can be conducted by so-called sleeper terrorists or sleeper cells (Ali, 2020; Chuang & Roemer, 2013; Kennedy, Homant, & Barnes, 2008). Sleeper cells are hard to detect, their members live inconspicuously, and they go unnoticed by intelligence agencies (Ali, 2020). Whereas there is some debate in the literature on the prevalence of sleeper terrorists (see e.g., Malet & Hayes, 2020), the present study focuses specifically on individuals' perceptions, that is, to what extent individuals *perceive* that sleeper terrorists live invisibly in the midst of our societies. Perceptions of terrorism—that are at least partly constructed via media—are relevant to public opinion, intergroup relationships, and policy support (Gadarian, 2010; Smith, Figueroa-Caballero, Al-Gharbi, & Stohl, 2020). In fact, if the public is exposed to the notion of sleeper terrorists, this implies that any Muslim could be a potential terrorist, which is arguably relevant for intergroup relationships.

Sleeper terrorists can be defined as *individuals who live in a country on a long-term basis and have ordinary, unsuspicious lives while plotting an attack* (Kennedy et al., 2008). Thus, sleeper terrorists live a double life and melt into their environment to cover their affiliation to certain organizations or their ideological support, maintaining invisibility until they are activated or become active (Barkun, 2007). Common for Islamist terrorists is that they use religion to justify their aims whereas the vast majority of Muslims clearly condemn acts of terror (Yildiz & Verkuyten, 2013). The misuse of religion to achieve these aims, in turn, may lead to non-Muslims' perceptions that any Muslim is a suspect. The reason is that the perpetrators of terror acts typically do not stand out with any unusual behavior before their attacks, which may lead to the perception that any Muslim may be a potential terrorist (Kennedy et al., 2008).

Research has repeatedly shown that news about terror may increase negative stereotypes about Muslims (Das, Bushman, Bezemer, Kerkhof, & Vermeulen, 2009; Saleem, Prot, Anderson, & Lemieux, 2017; Schmuck, Matthes, von Sikorski, Materne, & Shah, 2018; Weimann, 2008). Yet the theoretical notion of sleeper terrorists has received little attention in this strand of research. From a theoretical standpoint, this omission is problematic. If people hold perceptions of sleeper terrorists, then these perceptions may be key to understanding why they develop negative stereotypes about Muslims. That is, news coverage alone may not fully explain such negative stereotypes. Only when news consumers come to believe that terrorists live inconspicuously among them and cannot be distinguished from Muslims in general, then stereotypical thinking with respect to *all* Muslims prevails. Building on the social identity (Tajfel & Turner, 1986), terror management (Greenberg, Pyszczynski, & Solomon, 1986), and exemplification theories (Zillmann, 1999), the present study introduces the theoretical notion of sleeper terrorists to terrorism news effects research. Bringing an intergroup perspective, the social identity theory (Tajfel & Turner, 1986) explains in-group favoritism and out-group hostility, especially in the face of perceived threat. Related to this, the terror management theory (Greenberg et al., 1986) posits that a reminder of one's mortality, such as reading news about terrorism, initiates worldview defenses. The exemplification theory (Zillmann, 1999) puts forward an idea of how an exemplar media representation of an issue can lead to overestimated judgments about a phenomenon. Furthermore, although there are a number of experimental studies (e.g., Saleem et al., 2017), there is a clear need to provide evidence for terrorism news effects outside the lab (Schmuck et al., 2018), ideally with panel studies (Ahmed & Matthes, 2017). To fill these research gaps, the present study investigated the longitudinal associations of exposure to news about terrorism with negative stereotypes about Muslims and perceptions of sleeper terrorists using a two-wave panel survey from Austria.

Moreover, we explored the relationship between perceptions of sleeper terrorists and negative stereotypes about Muslims.

Terrorism in the News

The present article focuses particularly on Islamist terrorism. Even though the definition of terrorism varies in the literature, scholars have identified certain key elements to define terror attacks (Moghaddam & Marsella, 2004; Nacos, 2016). These include (1) the usage of violence (2) directed at civilians, (3) with the intent to generate fear and (4) to affect individuals' political beliefs (Moghaddam & Marsella, 2004). Islamist terrorism or jihadism use violent means to reject democracy and elected parliaments, and jihadists seek to create an Islamic state that is governed by jihadists' own interpretation of Islamic law (Europol, 2021). With the use of violence, terrorists intend to convey a political, religious, or ideological message (Institute for Economics & Peace, 2022). Islamist terrorism forms a major type of contemporary global terrorism (Arciszewski, Verlhiac, Goncalves, & Kruglanski, 2010). From 2007 to 2021, Islamist terrorism was responsible for 61% of fatalities of terror attacks in the West, whereas 30% of fatalities were attributed to Far-Right perpetrators (Institute for Economics & Peace, 2022). In total, the number of deaths attributed to jihadist ideology sums up to 528 during the same time period (Institute for Economics & Peace, 2022). The deadliest attacks in the West were committed in France, including the Nice and the Paris attacks in 2015. The Global Terrorism Index (GTI) ranks countries by accounting for property damage and terrorist incidents as well as deaths and injuries (Institute for Economics & Peace, 2022). Within Europe, Austria ranked seventh in 2021, after neighboring countries Germany (fourth rank) and Italy (sixth rank; Institute for Economics & Peace, 2022).

Often, there is a strong relationship between terror and the mass media, as terrorists stage their attacks in ways to reach huge media audiences (i.e., the theater of terror, see Weimann, 2015). For instance, political and geographic proximity to the country, casualties, and violence are factors that may increase the likelihood of terrorism coverage (Sui et al., 2020). Content analysis showed that geographical proximity of a terror event yielded more undifferentiated coverage (i.e., linking Muslims to Islamist terrorism) and less differentiated reporting (i.e., actively differentiating Muslims from Islamist terrorism; von Sikorski et al., 2022). Relatedly, media are quick to label violent acts as terrorism when the perpetrator self-identifies as Muslim compared with attacks without a Muslim affiliation, which are labeled, for instance, as crimes or acts of the mentally ill (Morin, 2016). In addition, terror attacks that are committed by religiously inspired terrorists who misuse Islam to justify their acts of violence receive more media attention compared with attacks committed by terrorists without Islamic affiliation (Kearns, Betus, & Lemieux, 2019).

Literature reveals that people falsely link terrorists to Muslims in general (Arciszewski et al., 2010). As the majority of research has identified, this may occur because of a tendency to view Islam as a terrorism threat (Ibrahim, 2010; Powell, 2011; Woods, 2007). In Western societies, media play an essential role in constructing a Muslim identity (Ahmed & Matthes, 2017). News about Muslims and Islam is often featured with negative stereotypes or presented in connection to Islamist terrorism (Ahmed & Matthes, 2017; Powell, 2011). The existing body of research shows that Islam has been repeatedly associated with violence, radicalization, extremism, or jihadism in the news (Ahmed & Matthes, 2017; Baker, Gabrielatos, & McEnery, 2013; Hoewe & Bowe, 2021; Ibrahim, 2010). Thus, news about Islamist terrorists may have significant

attitudinal consequences (von Sikorski, Matthes, & Schmuck, 2021; von Sikorski, Schmuck, Matthes, & Binder, 2017).

Intensive media coverage of terrorism has sparked a large number of research studies dedicated to the consequences of such news (e.g., Das et al., 2009). Literature has identified that the presentation of a certain group as violent may reinforce stereotypes and be specifically damaging to beliefs about the members of that group (Greenberg, Mastro, & Brand, 2002). Although terror attacks are carried out mostly by single perpetrators, the salience of their group identity leads the public to judge the group as a whole, especially when the group is a minority (von Sikorski et al., 2017). Thus, media coverage of Islamist terrorism has significant effects on news consumers' attitudes and can generate negative stereotypical attitudes toward Muslims (Arciszewski et al., 2010; Das et al., 2009; Saleem et al., 2017; Stephan, Renfro, Esses, Stephan, & Martin, 2005; von Sikorski et al., 2017, 2021).

There are two main theoretical strands to explain these effects. First, social identity theory (Tajfel & Turner, 1986) predicts that individuals' perceived threat from an out-group can explain prejudice toward members who belong to this group (Stephan et al., 2005). If individuals perceive that Islamist terrorists as well as regular Muslims belong to the same out-group, they may transfer negative attitudes toward Islamist fundamentalists to the general Muslim population (Schmuck et al., 2018; von Sikorski et al., 2021). When news coverage connects Muslims to Islamist terrorists, in-group members may perceive individuals belonging to an out-group as homogenous, as argued by social identity theory, fostering negative out-group attitudes (Tajfel & Turner, 1986).

Second, and related to social identity theory, scholars have revealed that terror news coverage enhances individuals' perceived mortality (Das et al., 2009). Research has demonstrated that mortality salience, that is, death-related concerns, enhances individuals' stereotypical thinking (Schimel et al., 1999). Terror management theory (Greenberg et al., 1986) suggests that since terrorism news activates thoughts of one's mortality, it may result in an increased defense of one's worldview (Das et al., 2009). In turn, such worldview defense enhances stereotypical thinking because individuals tend to strengthen the relationships with the members of their in-group and distance themselves from the perceived out-group (Pyszczynski, Solomon, & Greenberg, 2003; Schimel et al., 1999). It is important to note that terror management theory has been used as a theoretical framework to explain the effects of terror in cross-sectional and experimental studies (e.g., Das et al., 2009) as well as longitudinal studies in the context of death anxiety (e.g., Chopik, 2017). Based on the available body of evidence and the theoretical considerations outlined above, we predict that exposure to terrorism news is associated with increased levels of negative stereotypes about Muslims over time. Broadly, these assumptions can also be based on cultivation theory (Gerbner & Gross, 1976) and message effects, which suggest a relationship between media consumption and adoption of the messages seen in the media. The early work related to cultivation theory and effects was concerned with television consumption, suggesting that the more individuals watch television, the more their worldviews reflect the narratives seen on television (Gerbner & Gross, 1976; Shanahan & Morgan, 1999; Shrum, 2017). Thus, we hypothesize:

H1:   *Exposure to news about Islamist terror at Time 1 is positively related to negative stereotypes about Muslims at Time 2.*

Perceptions of Sleeper Terrorists in Response to Terror News, and Negative Stereotypes

While it is common that terrorists who commit violent acts are directly connected to certain Islamist terrorist organizations, many terror attacks are carried out by terrorists without such close ties (Chuang & Roemer, 2013; Ferrara, 2017). For instance, the so-called Islamic State called its followers to conduct sleeper attacks in everyday places and in everyday situations (Nacos, 2016). Recent attacks have demonstrated the potential of the Islamic State to reach, organize, and mobilize sleeper terrorist cells among Westerners (Ferrara, 2017). Also, one example of a jihadist network and "homegrown sleeper cell" is a group of adults who have an immigration background but are born in the West (Kennedy et al., 2008, p. 328; Khosrokhavar, 2005). The notion of sleeper terrorists is different from "lone-wolf terrorists" (see Weimann, 2015). Lone-wolf terrorists refer to individuals who operate individually, not as members of an organized terrorist group (Spaaij, 2010). Sleeper terrorist cells, by contrast, may or may not belong to a terrorist group. The defining notion is that they live an unsuspicious life among the majority population, implying that—if individuals believe sleepers exist—any next-door Muslim could be one.

Sleeper terrorists may have perceived discrimination because of their background or religion from other majority citizens in society (Kennedy et al., 2008). The sleepers commonly maintain a long-term residency in the country and live ordinary lives without drawing any suspicious attention while awaiting orders for attacks from an organization or plotting an attack by themselves (Kennedy et al., 2008). Thus, potential terrorists who are sleepers within Western countries can be either homegrown, radicalized individuals or members of organized cells (Pipes, 2003).

Moreover, terror attacks receive intense media coverage, and the news often includes reports that point to the ordinary lives of perpetrators (Powell, 2011; see McCauley & Moskalenko, 2014). As a consequence, exposure to general news about terrorism may be associated with thoughts that terrorists live inconspicuously among us and are difficult to identify. We argue that this theoretical notion is crucial to understanding the effects of terrorism coverage. That is, news coverage affects stereotypes about Muslims because citizens come to believe that there are sleeper terrorists who cannot be distinguished from ordinary Muslims. In fact, especially in Europe, the reference to sleeper cells is a common reaction of officials, politicians, and police officers after a terror attack. There is typically an abundance of news coverage referring to sleeper terrorists and sleeper cells (Ossa, 2023). Additionally, the media portray sleeper cells in connection to Muslims (Odartey-Wellington, 2009).

We theorize that news coverage triggers the perception of sleeper terrorists based on the cognitive mechanism of distinctiveness-based illusory correlations (see Mullen & Johnson, 1990), according to which individuals overestimate the occurrence of rare, negative events for smaller (minority) as opposed to larger (majority) groups (Mullen & Johnson, 1990). In their seminal study, Hamilton and Gifford (1976), for instance, showed that respondents overestimated the frequency with which members of minority groups committed undesirable acts. Thus, group membership is more likely to be associated with rare, negative events for minorities as for majority groups. Yet terrorist acts can be described as distinctive, rare behaviors, and Muslims are a minority group in most Western countries. Thus, individuals may overestimate the number of potential terrorists in minority groups, leading to the perception of sleeper terrorists. That is, the illusionary correlation holds that many (if not most) ordinary Muslims are potential terrorists. Because

Muslims typically live among majority-group individuals, any Muslim could be perceived as a potential terrorist, that is, a sleeper.

A similar prediction can be derived from the exemplification theory (Zillmann, 1999). Exemplars can lead individuals "to make judgments about the occurrence of people, events, or outcomes that may differ wildly from the true occurrence" (Bigsby, Bigman, & Martinez Gonzalez, 2019, p. 274). Exemplars have a shared similarity with the exemplified larger group (Zillmann, 1999). These examples, which are monitored by the quantification heuristic, allow individuals to make a generalization about the larger group (Bigsby et al., 2019). Translated to the purpose of the present study, the Islamist terrorist in the news can be perceived by individuals as a representation of a larger group of general Muslims due to the shared social attribute of being a Muslim. Individuals may derive from this that ordinary Muslims may be sleepers, they cannot be distinguished from Islamist terrorists, according to this logic. To summarize, both the distinctiveness-based illusory correlations theory as well as the exemplification theory would lead us to predict that the general coverage of terrorists in the news may be associated with the perception of sleeper terrorists. We thus hypothesize:

H2:   *Exposure to news about Islamist terror at Time 1 is positively related to the perceived existence of sleeper terrorists at Time 2.*

The perception of sleeper terrorists may be applied to the entire social group, fueling negative stereotypes. In line with this idea, the out-group homogeneity effect predicts that in-group members perceive individuals of an out-group as more similar to one another compared with their own in-group (Rothgerber, 1997). In particular, when the out-group is evaluated negatively, out-group homogeneity explains the defensive thinking that out-group members are all the same and that there is no need to distinguish between them (Rothgerber, 1997). Thus, the line between sleeper terrorists and ordinary Muslims may get blurry for non-Muslim news consumers (Rothgerber, 1997). It follows that when people believe in the existence of sleepers, they may automatically attribute these negative characteristics to all Muslims (Rothgerber, 1997) as they may also perceive that any random Muslim in their neighborhood can be categorized as a potential terrorist. According to the out-group homogeneity effect, this may be associated with generalized negative attitudes toward the whole Muslim out-group. Hence, we can theorize:

H3:   *The perceived existence of sleeper terrorists at Time 1 is positively related to negative stereotypes about Muslims at Time 2.*

Reciprocal Effects

The nature of relationships between exposure to news about terror, perceptions of sleeper terrorists, and negative stereotypes about Muslims may not be one-directional, but instead reciprocal. It is especially important to explore what drives the perceptions of sleeper terrorists. One may speculate that those who already hold negative stereotypes about Muslims are more likely to overestimate the prevalence of sleeper terrorists due to biased perceptions of news media coverage and Muslims in general (as explained by social identity theory; Tajfel & Turner, 1986). Likewise, negative stereotypes about Muslims may lead individuals to overestimate the amount of terrorism news they are exposed to. However, concerning the effect of sleeper terrorist perceptions on the amount of news received, it can be speculated that news about terrorism is more

important to those who hold sleeper perceptions. That is, if people believe that potential terrorists live among them, then they should be more likely to expect terror attacks and assign more importance to terrorism news, compared with those who score lower on sleeper perceptions. However, we cannot derive sound and theoretically elaborated expectations from the existing body of literature about the reversed causality effects among the constructs investigated in our study. Therefore, we formulate the following research questions:

RQ1:   *What is the relationship between negative stereotypes about Muslims at Time 1 and the exposure to news about terror at Time 2?*

RQ2:   *What is the relationship between the perceived existence of sleeper terrorists at Time 1 and the exposure to news about terror at Time 2?*

RQ3:   *What is the relationship between negative stereotypes about Muslims at Time 1 and the perceived existence of sleeper terrorists at Time 2?*

The complete theoretical model is depicted in Figure 1.
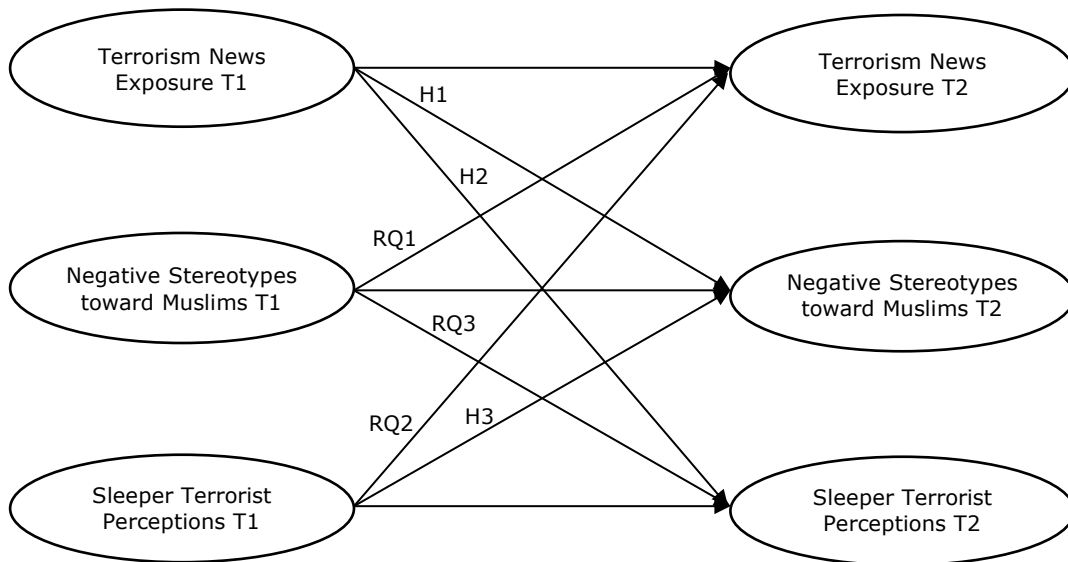

Figure 1. Hypothesized model examining the relationships between exposure to news about terror, negative stereotypes about Muslims, and perceptions of sleeper terrorists.
Note. Ovals present latent variables. T1 = Time 1, T2 = Time 2.

Method

We used the data that were collected in a two-wave panel survey (*N* = 524) by the private survey company Dynata[2] (from July 24 to August 6, 2019, and from September 13 to September 21, 2019). In

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[2] This study was conducted as part of a larger data collection. The data from the same data collection were also used in an article on terrorism and media bias by Kaskeleviciute and Matthes (2023) as well as in an

2019, there were a total of 21 jihadist terror attacks in the European Union alone (Europol, 2020). A quota-sampling procedure of the Austrian population was applied with respect to age (range 18–81, M = 49.40, SD = 15.28), gender (49.4% female), and education (49.2% with a high-school diploma, 22.7 % finished higher education, not fully in line with the quota). Using a Web-access panel, respondents were selected at random within the quota.

In total, 1,206 participants responded to the online survey of which 1,105 finished the full survey (Response Rate 1 = 91.63). In the second wave, 564 completed the survey (retention rate: 51%). We included only those cases who took longer than 10 minutes to complete the 25-minute-long survey. Thus, our final sample consisted of N = 524 participants. A test without the excluded cases confirmed the findings. To test for a systematic bias in the attrition rate, we compared the valid cases who only answered wave 1 with the valid cases who took part in both waves. Regarding age, respondents who completed both waves were significantly older (M = 49.40, SD = 15.28) compared with respondents who only completed the first wave (M = 44.80, SD = 16.37), $t(1033)$ = −4.63, p < .001. There was no systematic difference in respondents' gender, $\chi^2(1, N = 1,035)$ = 3.68, p = .055, or education $\chi^2 (2, N = 1,035)$ = 3.68, p = .159. We conducted a post hoc power analysis for structural equation modeling (SEM) using a *semPower* package for R (Moshagen & Bader, 2023; see also Jobst, Bader, & Moshagen, 2023). According to the post hoc power analysis ($1 − β$ = .80, p < .05), the sample size was sufficient to detect small effects (Cohen, 1988). In research on the effects of terrorism on out-group hostility, small effect sizes can be expected based on meta-analysis (Godefroidt, 2023). Data are freely available under the Open Science Framework (OSF; https://osf.io/4g96w/).

Measures and Data Analysis

We measured participants' exposure to news about terror (r_{w1} = .79, M = 4.19, SD = 1.74; r_{w2} = .75, M = 4.03, SD = 1.67) with two items ("I have seen or read news about Islamist terrorism in the media" and "I have seen or read news about planned Islamist terrorist attacks in the media"; 1 = *never*, 7 = *very often*). These are typical topical news exposure items (e.g., Nellis & Savage, 2012).

To measure individuals' stereotypes about Muslims ($α_{w1}$ = .94, M = 3.84, SD = 1.52; $α_{w2}$ = .95, M = 3.75, SD = 1.57), we asked participants to indicate how they would describe a typical Muslim. The measurements were adapted from Saleem, Yang, and Ramasubramanian (2016) and Saleem et al. (2017). Using trait adjectives is a typical way to measure individuals' stereotypes about specific groups (see also Croucher, 2013; Velasco González, Verkuyten, Weesie, & Poppe, 2008). On a scale from 1 to 7 participants were asked to evaluate the following adjectives: "good-natured"–"malicious," "peaceful"–"violent," and "not aggressive"–"aggressive." Such semantic differential scales have been used in studies by, for instance, Sides and Gross (2013), Tan, Fujioka, and Tan (2000), and von Sikorski et al. (2021).

Perceptions of sleeper terrorists ($α_{w1}$ = .96, M = 5.03, SD = 1.67; $α_{w2}$ = .95, M = 5.05, SD = 1.64) were measured with three items developed for the present study (1 = *fully disagree*, 7 = *fully agree*; "Islamist

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article on social media, refugees, terrorism, and emotions by Matthes, Kaskeleviciute, Knupfer, and Masood (2023). The independent and dependent variables of this study were not used in the other studies.

terrorists live completely inconspicuously among us," "Islamist terrorists live unsuspicious lives and are difficult to identify, but can be activated for attacks at any time," and "Islamist terrorists are so-called 'sleepers,' they remain completely inconspicuous until an attack occurs." The original items of main constructs in the German language are provided in the online appendix on the OSF (see Table A1). We controlled for political media use and political social media use to make sure that the effects could not be traced back to general differences in the frequency of media use. To measure political media use ($α_{w1}$ = .61, M = 3.93, SD = 1.71), participants indicated how often (scale ranging from 0 days to 7 days) they used online or offline media to find out about political issues (i.e., quality newspapers, freesheets, tabloid newspapers, national broadcaster). Participants' political social media use (r_{w1} = .93, M = 3.22, SD = 1.94) was measured with two items. Participants evaluated how often they used social media, such as Facebook, Instagram, Twitter, or YouTube, to get information about party politics and elections as well as political issues in general (1 = *never*, 7 = *very often*). As one of the key predictors of negative stereotypes about Muslims, we controlled for Left-Right alignment by asking participants to place themselves on a 10-point Likert scale ranging from "Left" to "Right" (M = 4.72, SD = 2.14). Moreover, we controlled for self-identification as Muslim (see Leite, Ramires, Dinis, & Sousa, 2019; "I would describe myself as a religious Muslim"; 1 = *fully disagree*, 7 = *fully agree; M* = 1.22, SD = .92). Age, gender, and education (dummy coded; high education, n = 299, i.e., college degrees versus low, n = 225, i.e., college-bound high-school degrees and below) were also controlled.

We performed SEM with a full information maximum likelihood (FIML) estimator. We calculated the comparative fit index (CFI), Tucker-Lewis index (TLI), $χ^2$/df ratio, and the root mean square error of approximation (RMSEA). We also controlled for all autoregressive relationships. The error terms were allowed to correlate between the latent constructs in wave 2. Zero-order correlations of all measured constructs are shown in Table 1.

Results

We checked for longitudinal metric measurement invariance of all latent variables (Vandenberg & Lance, 2000) to rule out that the observed relations may stem from changes in the meaning of the constructs. We constrained all factor loadings of the latent variables at T1 and T2 as equal. The model fit of the constrained model revealed a good model fit: CFI = 0.98; TLI = 0.97; $χ^2$/df = 1.95, p < .001; RMSEA = 0.04, 90% confidence interval [0.04; 0.05]. When comparing the constrained model with the unconstrained model, we found no significant difference in model fit (p = .274). Thus, metric invariance over time was established.

Results are depicted in Table 2. Hypothesis 1 formulated that exposure to news about terror increases negative stereotypes about Muslims over time. In contrast to H1, we did not observe a relationship between exposure to news about terror and negative stereotypes about Muslims over time (b = −.03, SE = .03, p = .425). However, we found clear evidence for the reasoning presented in H2, assuming that exposure to news about terror increases the perceived existence of sleeper terrorists over time. That is, exposure to terror news measured at wave 1 was positively related to the perceived existence of sleeper terrorists measured at wave 2 (b = .09, SE = .04, p = .009). Hypothesis 3 stated that the perceived existence of sleeper terrorists increases negative stereotypes about Muslims over time. In line with expectations,

perceptions of sleeper terrorists measured at wave 1 was a significant positive predictor of negative stereotypes at wave 2 (b = .09, SE = .04, p = .015).

With regard to RQ1, negative stereotypes about Muslims were unrelated to exposure to news about terror (b = .02, SE = .05, p = .723). Research question 2 explored whether the perceived existence of sleeper terrorists predicted exposure to news about terror over time. Regarding RQ2, perceptions of sleeper terrorists were found to be a positive predictor of exposure to news about terror over time, suggesting a reciprocal relationship (b = .13, SE = .05, p = .004). Research question 3 asked about the relationship between negative stereotypes about Muslims and the perceived existence of sleeper terrorists over time. Concerning RQ3, there was a positive relationship between negative stereotypes about Muslims and perceptions of sleeper terrorists over time (b = .12, SE = .04, p = .003), again suggesting a reciprocal relationship.

As for the control variables, respondents leaning toward the right-wing political spectrum were more likely to hold negative stereotypes (b = .08, SE = .03, p = .001) as well as higher perceived existence of sleeper terrorists (b = .07, SE = .03, p = .011) compared with left-wing individuals. Yet political ideology was unrelated to terrorism news exposure (b = .04, SE = .03, p = .203). Also, political media use (b = .11, SE = .04, p = .006) and political social media use (b = .13, SE = .04, p < .001) predicted exposure to terror news. It is important to note that all the substantial relationships did not significantly change when omitting the media use controls. Furthermore, higher educated respondents were less likely to hold perceptions of sleeper terrorists than less educated individuals (b = −.22, SE = .11, p = .042). Female participants were less likely to be exposed to terror news compared with males (b = −.37, SE = .13, p = .003). Finally, younger respondents held fewer negative stereotypes about Muslims compared with older ones (b = −.01, SE = .00, p = .030).

Table 1. Zero-Order Correlations.

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1.	Gender	1.00											
2.	Age	−0.282***	1.00										
3.	Education	0.094*	−0.220***	1.00									
4.	Left-Right orientation	−0.174***	0.157***	−0.148***	1.00								
5.	Muslim self-identification	−0.030	−0.142**	0.071	0.028	1.00							
6.	Political media use	−0.156***	0.290***	0.009	0.019	0.104*	1.00						
7.	Political social media use	−0.018	−0.051	0.058	−0.032	0.122**	0.336***	1.00					
8.	Exposure to news about terror (T1)	−0.082	0.162***	0.003	0.191***	0.028	0.300***	0.224***	1.00				
9.	Exposure to news about terror (T2)	−0.200***	0.195***	−0.081	0.233***	0.044	0.339***	0.298***	0.595***	1.00			
10.	Perceptions of sleeper terrorists (T1)	−0.025	0.249***	−0.184***	0.433***	0.008	0.056	−0.046	0.249***	0.285***	1.00		
11.	Perceptions of sleeper terrorists (T2)	−0.042	0.225***	−0.215***	0.422***	−0.032	0.036	−0.037	0.271***	0.356***	0.709***	1.00	
12.	Negative stereotypes about Muslims (T1)	−0.039	0.070	−0.152***	0.346***	0.015	0.007	0.043	0.142**	0.170***	0.329***	0.365***	1.00
13.	Negative stereotypes about Muslims (T2)	−0.054	0.018	−0.112*	0.370***	0.054	0.047	0.078	0.126**	0.203***	0.330***	0.370***	0.682***

Note. N = 524; T1 = Time 1, T2 = Time 2; * p < .05, ** p < .01, *** p < .001.

Table 2. Results of the SEM.

Predictor	Exposure to News About Terror (T2)			Perceptions of Sleeper Terrorists (T2)			Negative Stereotypes About Muslims (T2)		
	b	SE	β	b	SE	β	b	SE	β
Gender (T1)	−.371**	.127	−.118	.027	.106	.008	−.052	.097	−.019
Age (T1)	.001	.005	.013	.003	.004	.026	−.008*	.003	−.084
Education (T1)	−.140	.126	−.044	−.215*	.105	−.067	−.005	.096	−.002
Left-Right orientation (T1)	.042	.033	.058	.071*	.028	.095	.084**	.026	.130
Muslim self-identification (T1)	−.004	.067	.035	−.002	.056	−.029	.028	.051	.019
Political media use (T1)	.113**	.041	.123	−.020	.034	−.022	.041	.031	.051
Political social media use (T1)	.130***	.036	.161	−.011	.030	−.014	.029	.028	.041
Exposure to news about terror (T1)	.408***	.045	.440	.091**	.035	.097	−.025	.032	−.031
Perceptions of sleeper terrorists (T1)	.132**	.046	.132	.603***	.041	.596	.086*	.035	.098
Negative stereotypes about Muslims (T1)	.018	.050	.015	.123**	.042	.105	.614***	.041	.608
R^2		.444			.550			.500	

Note. N = 524; T1 = Time 1, T2 = Time 2; * *p* < .05, ** *p* < .01, *** *p* < .001.

Discussion

The present study investigated the notion of sleeper terrorists, a prominent term used in public debate to describe potential terrorists who live inconspicuously among us while plotting a criminal attack. Using panel survey data, we found no association of news reporting about Islamist terrorism with negative stereotypes about Muslims over time. This finding stands in contrast to prior research suggesting that reports about Islamist terrorism can shape negative attitudes toward Muslims (e.g., Schmuck et al., 2018). However, some of this line of research has used cross-sectional designs (see e.g., Shaver, Sibley, Osborne, & Bulbulia, 2017), which can be criticized for their inability to determine temporal order between the constructs. In fact, when looking at the cross-sectional relationships between exposure to terrorism news and negative stereotypes, we see strong and highly significant correlations in our study (see Table 1). Yet such associations disappear when the prior state of a dependent variable is statistically controlled for. In experimental studies, scholars may have employed forced exposure designs, that is, exposing individuals to content they would never use. As has often been noted, conditions simulated in the laboratory do not compare with real-life communication effects (Kinder, 2007). This may affect the findings. Survey panel data, therefore, complement prior research in meaningful ways.

The key finding of the present study was a positive relationship between exposure to news coverage of Islamist terrorism and citizens' perceptions of sleeper terrorists over time. The very fact that terrorists are able to carry out their malicious attacks under the pretended umbrella of religion supports the reasoning that sleeper terrorists may live a rather peaceful and unspectacular life without attracting much attention. Since religiously inspired terrorists misuse Islam for their aims and by doing so share common social attributes with regular Muslims, one may perceive that these two groups overlap. Thus, when exposed to terrorism news non-Muslim individuals may come to the perception that there are sleeper terrorists among them, who cannot be detected before they carry out an attack. This finding is in line with the distinctiveness-based illusory correlations theory (see Mullen & Johnson, 1990), which suggests that individuals may overestimate the occurrence of rare and negative events, especially when minority groups are concerned. Similarly, the exemplification theory (Zillmann, 1999) argues that exemplar representation in the news may result in overestimated judgments about certain phenomena, such as the existence of sleeper terrorists.

Interestingly, we also found evidence for the opposite direction: Sleeper perceptions were related to exposure to news about Islamist terror. There may be several explanations for this finding. First, those with sleeper perceptions may overestimate the amount of terrorism news (i.e., have biased perceptions). However, it should be noted that negative stereotypes about Muslims did not predict terrorism news exposure, making this explanation less likely. The reason is that the same logic applies to both variables, sleeper perceptions and negative stereotypes. Also, it should be kept in mind that the prior state of terrorism news exposure was controlled for, taking away most of the variance of the dependent variable. Furthermore, Left-Right political ideology, which is typically a main predictor of perceptual biases, was controlled for. All of this speaks against the biased perceptions explanation.

What is more likely, then, is that people who hold sleeper terrorist perceptions assign more relevance to terrorism news because such news likely contains information about sleeper terrorists. That is, terrorism news is deemed as more important and is allocated more attention when there are prior sleeper

terrorism cognitions. Yet, more data are needed to back up these conjectures. Regardless of the explanation, the reciprocal effects are suggestive of a spiraling mechanism: The more people are confronted with terrorism news, the more they come to believe that sleeper terrorists may live among them, which in turn, should further foster attention to such news. Since we employed a two-wave panel design, we could not provide direct evidence for this reasoning. Therefore, the present findings need to be replicated with panel studies involving more than two waves or with experimental research.

Yet when individuals believe that potential terrorists are sleepers who may be difficult to distinguish from ordinary Muslims, they may generalize the negative attributes associated with Islamist terrorism to the entire category of Muslims. In line with this, we observed a positive association of sleeper terrorism perceptions with negative stereotypes about Muslims. The finding can be supported by the premise of the out-group homogeneity effect (Rothgerber, 1997), which suggests that individuals see members of an out-group as similar to one another and thus, may falsely attribute the negative characteristics of sleeper terrorists to the general Muslim population. In addition, there was also evidence for the reverse relation: Negative stereotypes about Muslims were associated with perceptions of sleeper terrorists over time. Overall, the relationships between terrorism exposure, sleeper terrorist perceptions, and negative stereotypes are suggestive of mediating mechanisms. Yet with two panel waves, we were unable to test a mediating mechanism. The lack of a direct relationship between news exposure and negative stereotypes underlines the importance of considering the notion of sleeper terrorists when explaining negative attitudinal outcomes.

Limitations and Future Research

We employed a design with two panel waves, which does not allow testing of dynamic relationships over time. Although a crossed-lagged latent panel model is a standard analysis in panel research, our design was unable to observe spiraling processes, causal effects, or change processes. Future studies should use a panel design with at least three waves. This would help separate within-person change from between-individual processes (Hamaker, Kuiper, & Grasman, 2015). Nevertheless, a latent variable cross-lagged panel analysis can observe relationships over time while taking temporal order into account. In particular, future research should also strive to employ fixed effects models to look into increases and decreases of the focal variables over time. With the present two-wave panel data, a fixed effect approach has key limitations, and it "should be used with caution when there is little variation in the focal variables" (Hill, Davis, Roos, & French, 2020, p. 362). Also, the fixed effects model does not allow a test for reverse causation.

Furthermore, although we identified a clear lack of externally valid panel survey studies, there are limitations of the survey approach. Among those, self-report measures may suffer from perceptual biases. For instance, negative stereotypes may not be socially desirable, leading to underreporting. Future research should employ indirect measures to gauge unconscious, implicit attitudes and stereotypes (see e.g., Kaskeleviciute, Knupfer, & Matthes, 2024; Park, Felix, & Lee, 2007; Payne & Dal Cin, 2015). Also, respondents may overestimate or underestimate the amount of news they were exposed to even though we statistically controlled for general media use. All of this calls for a replication of our findings with experiments. Moreover, qualitative interviews would help gain more in-depth knowledge about the perceptions of sleeper terrorists.

On the conceptual side, we treated coverage of Islamist terrorism as rather monolithic, not distinguishing among the various content features (e.g., emotions, visuals). What is needed is a systematic content analysis looking at the specifics of how terrorism is covered. Such content analytical data need to be combined with the survey data to estimate the effects of several news content dimensions on the dependent variables explored here.

Future research should also strive to develop a more fine-grained understanding of sleeper terrorists. Estimations about the absolute number of sleeper terrorists should be separated from their relative number. In terms of media effects, it may matter if we speak of three sleeper terrorists overall or three of 100,000 members. Future research should also more explicitly test the distinctiveness-based illusory correlation theory as well as the exemplification theory. Also, the persuasiveness of the sleeper terrorist argument needs to be explored in experimental research (Hoeken et al., 2022). Finally, we looked at the effects of terrorism news coverage on non-Muslims in a Western European country. Future research should conceptualize and test effect mechanisms on Muslim samples, and potentially study over time communicative polarization between Muslims and members of the majority society (see Brüggemann & Meyer, 2023).

Conclusion and Implications

We found that news coverage of Islamist terrorism makes non-Muslim citizens believe that there are sleeper terrorists who live among them, and this belief has important consequences for their judgments about Muslim minorities in general. Yet such perceptions typically do not mirror reality. In fact, there are theoretical grounds to assume that the number of actual sleeper terrorists may be overestimated by non-Muslim respondents, which is also evident in the comparatively high means for sleeper terrorist perceptions observed in the present study. Our findings therefore bear great relevance for journalists and scholars alike. Journalists should be aware that their reports about Islamist terror attacks can have negative consequences for the question of how Muslim minorities are perceived in society. Scholars should strive to better understand how non-Muslim individuals form perceptions about sleeper terrorists and how those perceptions can be affected and potentially altered.

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