How terrorism news reports increase prejudice against outgroups: A terror management account

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A B S T R A C T

Three studies tested predictions derived from terror management theory (TMT) about the effects of terrorism news on prejudice. Exposure to terrorism news should confront receivers with thoughts about their own death, which, in turn, should increase prejudice toward outgroup members. Non-Muslim (Studies 1–3) and Muslim (Study 3) participants were exposed to news about either Islamic terrorist acts or to control news. When Dutch filmmaker Theo van Gogh was murdered in Amsterdam by an Islamic extremist during data collection of Study 1, this event was included as a naturally occurring factor in the design. Consistent with TMT, terrorism news and Van Gogh's murder increased death-related thoughts. Death-related thoughts, in turn, increased prejudiced attitudes toward outgroup members, especially when participants had low self-esteem, and when terrorism was psychologically close. Terrorism news may inadvertently increase prejudiced attitudes towards outgroups when it reminds viewers of their own mortality.

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Introduction

In recent years, terrorist attacks have become a salient threat to Western countries. News broadcasts frequently report about the threat of Muslim extremist terrorist acts, using vivid pictures of terrorist bombings, buildings crashing down, and people being killed in the name of the Islam and Allah. At the same time, different socio-cultural and religious groups appear to be drifting apart. For example, European adolescents set ablaze Muslim schools after news reports on Muslim extremist terrorism, and individuals with an Arab background have been reported to foster more extreme anti-European sentiments (BBC, 2004). This rift between groups with different backgrounds may not be a coincidence; the immense fear elicited by terrorism news reports may inadvertently increase prejudice against outgroups.

The present research tests the effects of terrorism news on prejudice against Arabs and Europeans. Terror management theory provides the theoretical foundation for the research. Terrorism news was manipulated across studies, and also induced by real-world events in Study 1. On November 2nd, 2004, the well-known Dutch filmmaker Theo van Gogh was murdered by an Islamic extremist, two months after the release of his highly controversial film about the abuse of Muslim women, titled *Submission*. Because the murder occurred in the middle of data collection, it allowed us to test whether real-life terrorism news produces the same effects as our experimental manipulation of terrorism news.

A terror management account of prejudice

According to terror management theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986), human beings are biologically predisposed toward survival, just like all animals. The uniquely human capacity for self-reflection, however, makes people aware that someday they will die. TMT proposes that thoughts of one's inevitable death create a potential for terror. To avoid becoming paralyzed by this terror, people immerse themselves in cultural systems and worldviews that offer them literal immortality (e.g., the promise of an afterlife after one's death) or symbolic immortality (e.g., being remembered by others after one's death). Faith in one's cultural worldview thus functions as a buffer against death-related anxiety.

TMT provides a powerful theoretical framework for explaining the origins and consequences of terrorism and political violence (Pyszczynski, Greenberg, & Solomon, 2003). Recent studies support a TMT account of the origins of political ideology and violence by showing that mortality salience increased violent resistance against political interventions (Hirschberger & Ein-Dor, 2006), support for violent military interventions (Pyszczynski et al., 2006) and willingness to sacrifice ones life for political or religious ideology (Pyszczynski et al., 2006; Routledge & Arndt, 2007). Because the main goal of terrorist acts is the 'intentional generation of mas-

sive fear' (Cooper, 2001, p. 883), terrorism news may also increase worldview defense – such as prejudice against outgroups, or increased support for one's country and government. This may be especially likely for terrorist attacks that are perceived as psychologically or physically close.

Unfortunately, empirical evidence about the consequences of terrorism is mainly indirect, by focusing on the role of mortality salience rather than directly testing the effects of terrorism news. One study showed that experimentally induced thoughts of death enhanced support for US president George W. Bush. Also, priming participants subliminally with 9/11 stimuli increased death-related thoughts (Landau et al., 2004). Another study showed that after a mortality salience manipulation, securely attached participants increased their support for a liberal presidential candidate, whereas less securely attached participants increased their support for a conservative presidential candidate (Weise et al., 2008). One study conducted more direct tests of the effects of terrorism news reports, but could not establish effects on death thought accessibility (Ullrich & Cohrs, 2007).

The present studies add to the literature by providing an extensive test of a TMT account of terror-induced prejudice. A TMT account of prejudice differs from other perspectives in three important ways. First, several theorists have argued that prejudice is an inevitable consequence of categorization processes (e.g., Allport, 1954; Tajfel, 1981). For instance, when news reports link Arabs to terrorist acts, this automatically reinforces the 'Arab equals bad' stereotype, thus increasing prejudice against Arabs. In contrast, TMT proposes that prejudice can be regarded as a specific type of worldview defense that results from the suppression of death-related thoughts. Contrary to a stereotype generalization account of prejudice, TMT attributes a pivotal role to thoughts about death in predicting prejudice. However, empirical support for a link between death-related thoughts and prejudiced attitudes is lacking. Although there is evidence that mortality reminders can increase worldview defenses against people of a different race or religion (Greenberg, Schimel, Martens, Solomon, & Pyszczynski, 2001; Greenberg et al., 1990), death-related thoughts have remained the missing link.

This research tests the full causal chain from terrorism news to death-related thoughts to prejudice against outgroup members. The classical TMT account is that death-related thoughts mediate between terrorism news and prejudice. We compare these findings to a model in which death-related thoughts moderate the relationship between terrorism news and prejudice. This is reminiscent of well-known priming theories of news effects (e.g., Iyengar & Kinder, 1987). According to these theories, news determines not so much what people think, but what they think about (the agenda setting effect, McCombs & Shaw, 1972). What people think about, in turn, becomes an important evaluation standard for judging 'reality' (the media priming effect, Iyengar & Kinder, 1987). For example, news about economic crisis may increase the accessibility of thoughts and fears about such a crisis in the public, which, in turn, may 'prime' public perceptions of employment policy, or political actors, and cause a shift in voting behavior. Likewise, terrorism news reports may increase the accessibility of thoughts of one's own mortality, which, in turn, may become an important evaluation standard for judging outgroup members, public policies, and politicians. Studies 1 and 2 test both mediation and moderation models of terrorism news effects.

A second difference between a TMT account of prejudice and other accounts concerns the role of self-esteem. TMT proposes that self-esteem protects individuals from the anxiety that arises as they become aware of their own demise, and thus functions as a buffer against mortality reminders (Greenberg et al., 1992, 1993; Harmon-Jones et al., 1997). The anxiety buffering function of self-esteem is unique to a TMT account of prejudice and sets it apart from an intergroup threat account of terrorism news effects on prejudice.

According to intergroup threat accounts, terrorism news poses a threat to one's group and therefore threatens collective and personal self-esteem, which in turn affects reactions to outgroup members (see Riek, Mania, & Gaertner, 2006, for a meta-analysis). Importantly, in conditions of threat, high self-esteem promotes rather than reduces prejudice (e.g., Aberson, Healy, & Romero, 2000; Crocker, Thompson, McGraw, & Ingerman, 1987). In contrast, TMT proposes that in conditions of a specific threat of death, high self-esteem reduces rather than promotes prejudice. However, empirical support for this proposition is lacking. Study 2 is the first to test the effects of self-esteem on terror-induced prejudice.

A third difference between a TMT account of prejudice and other accounts concerns the role of specific outgroups. According to a stereotype generalization account of terror-induced prejudice, news about Muslim extremist terrorist threats is most likely to increase prejudice against Arabs among Westerners, because the stereotype "Arab = bad" generalizes to all individuals who are thought to belong to this socio-cultural group (Tajfel & Turner, 1979). In contrast, TMT proposes that terror-induced prejudice is not contingent upon the socio-cultural group portrayed in the news, or upon a viewer's background. Rather, terrorism news may increase prejudice against *any* outgroup, regardless of a viewer's socio-cultural background, when it confronts viewers with their own mortality. Thus, terrorism news may increase prejudice against Arabs for Europeans, and prejudice against Europeans for Arabs. This assertion is tested in Study 3.

Overview

Three studies tested the effects of news on terrorism on prejudice against outgroups. According to TMT, terrorism news may increase prejudice against outgroups when it confronts viewers with their own mortality. In Study 1 we manipulated news on terrorism and included the murder of filmmaker Van Gogh as a real-world factor in the design, and tested whether death-related thoughts mediated or moderated the effects of terrorism news on prejudice. Study 2 extended these findings by testing whether the effects on death-related thoughts and prejudice are mitigated by self-esteem. Finally, Study 3 tested the effects of terrorism news on prejudice against outgroups among Muslim and non-Muslim respondents.

Study 1

In Study 1, participants viewed news content about Islamic terrorist attacks or about the Olympic Games (control). Theo van Gogh was murdered by an Islamic extremist in the middle of data collection. Thus, half of the participants in Study 1 were also exposed to Van Gogh's murder. We test the classical TMT model in which death-related thoughts mediate the relationship between terrorism news and prejudice, and compare it to a model in which death-related thoughts moderate the relationship between terrorism news and prejudice.

Method

Participants and design

To ensure a diverse sample, 100 white European volunteers (40 men, 60 women) recruited via advertisements across different regions of the Netherlands. To avoid a selection bias, participants were told that the researchers were studying a variety of issues (e.g., news content, multicultural societies). The mean age of participants was 35 (SD = 10 years). About 48% of the participants were Protestant, 10% Catholic, and 42% were atheist. None were Muslim.

Participants were randomly assigned to one of two groups in a 2 (terrorism news vs. Olympic game news) between-subjects

factorial design. The second factor was not manipulated, but occurred naturally during the data collection process. About half the participants ($N = 44$) were tested before the highly publicized murder of Dutch filmmaker Theo van Gogh, whereas the others ($N = 56$) were tested after his murder.

Procedure

After informed consent was obtained, participants first reported their age, gender, religious background, and political preference. By the flip of a coin, participants then watched 12 min of programming from the Dutch news (NOS) about terrorism committed by Islamic extremists or about the Olympic Games. The terrorism news showed the September 11th, 2001 terrorist attack on the World Trade Center in New York City, the January 18th, 2002 terrorist attack during a Bar Mitzvah in Hadera, Israel, and the September 3rd, 2004 terrorist attack on a school in Beslan, Russia. The other participants watched segments from the 2004 Olympic Games in Athens, Greece (e.g., the arrival of the Olympic flame in Amsterdam).

Next, participants completed a word fragment task that contained 17 death-related items (e.g., in Dutch the fragment *doo_* can be completed as *dood* [dead], *doos* [box], or *doof* [deaf]). Participants then completed a measure of prejudicial attitudes toward Arabs (Bushman & Bonacci, 2004). Sample items include "Even for Arabs who live in the Netherlands, their first loyalty is to their home country rather than to the Netherlands" and "If there are too many Arabs in the Netherlands, our country will be less safe." (1 = *totally disagree*, 10 = *totally agree*; Cronbach's $\alpha = 0.92$). Finally, participants were thanked, debriefed, and dismissed.

Results

Preliminary analyses

Because the Van Gogh murder was a naturally occurring factor in our design, it is important to show that there are no systematic differences between participants who were tested before versus after his murder. That is, it is important to rule out differential subject selection as a threat to the validity of our design (Cook & Campbell, 1979). There are three reasons why we can rule out this threat. First, commitment to participate was obtained *before* Van Gogh was murdered. Thus, knowledge about the murder could not have influenced participation rates before versus after the murder. Second, there were no differences in participation rates before versus after the murder. All those who agreed to participate, did in fact participate. Third, political preferences were similar for individuals who participated before and after the murder, $\chi^2(9) = 0.22$, $p > 0.99$.[1]

Main analyses

Death-related thoughts

A 2 (terrorism vs. control news) $\times$ 2 (before vs. after Van Gogh murder) ANOVA showed a significant interaction between news content and Van Gogh's murder, $F(1, 96) = 4.18$, $p < 0.05$. Before Van Gogh's murder, death-related words were higher for participants who saw terrorism news than for participants who saw Olympic Games news, $Ms = 3.17$ and 2.59, respectively, $F(1, 96) = 3.14$, $p < 0.08$, $d = 0.36$. After Van Gogh's murder, death-related words were equally high regardless of whether participants saw terrorism news or Olympic Games news, $Ms = 2.80$ and 3.22, respectively, $F(1, 96) = 1.21$, $p < 0.273$, $d = 0.22$. There were no other significant effects.

Predicting prejudiced against Arabs

Regression analysis was used to test the effects of terrorism news, the murder of Van Gogh, and death-related thoughts on prejudiced attitudes toward Arabs. We first tested the possibility of mediation following Baron and Kenny (1986). However, because death-related thoughts did not significantly predict prejudice ($t(93) = 0.94$, $p = 0.35$) the conditions for mediation were not met. Thus, the findings do not support a model where death-related thoughts mediate the effects of terrorism news on prejudice against Arabs.

Next, we tested a moderation model. The regression model contained death-related word completions (mean centered), news content (control = -1, terrorism = $+1$), time of participation (before Van Gogh's murder = -1, after Van Gogh's murder = $+1$), and their interactions (see West, Aiken, & Krull, 1996). The results showed a marginally significant interaction between time of participation and death-related completions, $t(93) = 1.70$, $p = 0.094$. Before Van Gogh was murdered, death-related thoughts were not significantly related to prejudiced attitudes toward Arabs, $t(42) = -0.43$, $p = 0.67$, $b = -0.10$ and $\beta = -0.08$. After Van Gogh was murdered, the more death-related thoughts people had, the more prejudiced their attitudes were toward Arabs, $t(52) = 0.187$, $p = 0.07$, $b = 0.49$ and $\beta = 0.26$. No other significant effects were found.

Discussion

Study 1 showed that terrorism news and Van Gogh's murder increased death-related thoughts. Death-related thoughts, in turn, led to more prejudiced attitudes towards Arabs, but only after Van Gogh's murder. These findings suggest that death-related thoughts moderate the relationship between terrorism news and prejudice, supporting a media priming account of the relationship between death-related thoughts and prejudice (Iyengar & Kinder, 1987). In a classical TMT account of prejudice, death-related thoughts should mediate the effect of Van Gogh's murder on prejudice against Arabs. Our findings suggest an alternative interpretation, in which the Van Gogh murder primed unconscious death anxiety, which, in turn, became 'attached' to attitudes toward Arabs. Van Gogh's murder triggered a fear-based judgment of the Arab population, with high levels of unconscious fear predicting higher prejudice against Arabs. Overall, these findings resemble well-known priming accounts of news effects frequently observed in media studies (e.g., Iyengar & Kinder, 1987), in which the news determines not so much what people think, but what they think about (cf. the accessibility construct). What people think about, in turn, becomes an important evaluation standard for judging 'reality'.

The present study also shows some unexpected patterns. First, although terrorism news and Van Gogh's murder appeared to have similar effects on death-related thoughts, closer inspection of the means show that terrorism news increased death-related thoughts before the murder of Van Gogh, but not after. These findings suggest a ceiling effect, in which already activated death-related thoughts remain at the same level when a second terrorism news report comes in. Also contrary to expectations, terrorism news did not affect prejudice against Arabs. Although Van Gogh's murder was highly publicized and occurred close by, whereas the terrorism acts shown in the news clips occurred in other countries (i.e., USA, Israel, Russia). These findings suggest that terrorism news is most likely to increase prejudiced attitudes when the news is (psychologically or physically) close.

Study 2

In Study 2, we used a terrorism news story about a bomb threat on Amsterdam central train station, in order to ascertain that the

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[1] Degrees of freedom are nine because participants listed a total of 10 political parties.

news was perceived as psychologically close. The main goal of Study 2 was to provide further evidence for a unique TMT account of prejudice by testing the effects of self-esteem. According to TMT, terror-induced prejudice will be most pronounced for people with low self-esteem, and the accessibility of death thoughts should be positively linked to prejudice, especially for people with low self-esteem. Study 2 used an implicit measure of prejudice against Arabs to provide convergent evidence for a TMT account of prejudice.

Method

Participants

Participants were 101 white European volunteers (39 men, 62 women) who were recruited via a university website. Their mean age was 29 (SD = 11 years). About 32% were Protestant, 14% Catholic, 51% atheist, and 3% other. None were Muslim.

Procedure

Participants were told that the researchers were studying the relationship between news messages and cognitive abilities. After informed consent was obtained, participants reported their age, gender, religious background, and political preference. Next, they completed the 10-item Self-Esteem Scale (Rosenberg, 1965). Sample items include "I feel that I have a number of good qualities" and "I take a positive attitude toward myself." Each item was rated on a four-point scale (1 = strongly disagree, 4 = strongly agree and Cronbach α = 0.79).

Next, participants were randomly assigned to read a negative news article, either about terrorism or about animal abuse. The terrorism article described a bomb threat at the Amsterdam central train station. It said the suspected terrorist, a member of Al-Qaeda (Osama bin Laden's terrorist network), had been arrested, and that he had the bomb materials and plans in his possession. The animal abuse article described the stabbing of a pony with a sharp object. It said that the animal had survived the attack, but was permanently crippled. As in Study 1, participants completed word fragments as a measure of death-related thoughts. Participants then completed the implicit association test (IAT, e.g., Greenwald, McGhee, & Schwartz, 1998). The IAT has been shown to reliably measure prejudice at the implicit, unconscious level on the basis of reaction times to target words. Implicit tests of prejudice have the advantage of avoiding several demand characteristics associated with explicit measures of prejudice. Participants were told to classify words into categories as quickly as possible, while making as few mistakes as possible. We used European names (e.g., Maarten, Marcel) versus Arab names (e.g., Akbar, Mohammed), and good words (e.g., joy, love) versus bad words (e.g., evil, terrible). On the first test, participants pressed one button if the word was "European Name or Good," and they pressed another button if the word was "Arab Name or Bad." On the second test, the process was reversed (i.e., "European Name or Bad" versus "Arab name or Good"). Each test consisted of 25 trials. The difference in reaction times between the two tests was used to measure prejudiced attitudes.[2] Specifically, positive scores denote prejudiced attitudes

toward Arabs, whereas negative scores denote prejudiced attitudes toward Europeans. Finally, participants were debriefed.

Results

Death-related thoughts

As hypothesized, a one-way ANOVA on death word completions showed that participants in the terrorism news condition had more death-related word completions (M = 2.00, SD = 1.25) than did participants in the control news condition (M = 1.40, SD = 1.15), $F(1, 99)$ = 6.32, $p < 0.02$, d = 0.51.

Predicting prejudiced attitudes toward arabs

Regression analysis was used to predict prejudiced attitudes toward Arabs, and to test the mediating or moderating role of death-related thoughts. First, we tested whether news content (animal abuse = −1, terrorism = +1), self-esteem (mean centered), and the interaction between news content and self-esteem (see West et al., 1996) were related to prejudice against Arabs, and whether this relationship was mediated by death-related thoughts (mean centered). The analysis revealed a significant main effect for news content, $t(95)$ = 2.69, $p < 0.01$, b = 0.15 and β = 0.26, with higher levels of prejudice in the terrorism news condition. However, similar to Study 1, death-related thoughts did not significantly predict prejudice ($t(95)$ = 1.76, p = 0.19). Hence, the conditions for mediation were not met (cf. Baron & Kenny, 1986).

Next, we tested the possibility of moderation. Death-related word completions (mean centered), and the interactions between death-related thoughts, self-esteem, and news content were added to the regression model. The results showed a nearly significant main effect for news content, $t(91)$ = 1.77, $p < 0.09$. This main effect, however, was qualified by interaction effects. There was a significant interaction between news content and self-esteem, $t(91)$ = −2.22, $p < 0.03$. Self-esteem decreased prejudice against Arabs in the terrorism news condition, $t(20)$ = −2.06, $p < 0.06$, b = −0.26, β = −0.42. Self-esteem had no significant relationship with prejudice in the control condition, $t(17)$ = 0.84, p = 0.414, b = 0.17 and β = 0.20. Finally, a significant three-way interaction between news content, self-esteem, and death-related thoughts was also observed, $t(91)$ = −2.09, $p < 0.04$. Prejudice against Arabs increased with higher death-related thought accessibility, but only for low self-esteem participants exposed to terrorism news. In all other conditions, the relationship between death-related thought accessibility and prejudice was non-significant (see Fig. 1).

Discussion

In Study 2, terrorism news increased death-related thoughts. Death-related thoughts, in turn, increased prejudiced attitudes towards Arabs, especially in individuals with low self-esteem. These findings replicate the moderating role of death-related thoughts observed in Study 1, and suggest that death-related thoughts become linked to prejudice against outgroups after watching terrorism news. Importantly, the findings also support a unique TMT account of prejudice by showing that self-esteem functions as a buffer against the effects of terrorism news. Thus, terrorism news is most likely to increase prejudice for viewers who suffer from low self-esteem.

Study 3

Studies 1 and 2 used participants with a European background, and showed that terrorism news may increase prejudice against

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[2] Actually, a D measure was calculated by dividing the difference in reaction time between the two tests by the standard deviation of the reaction time scores of the test block (cf. Greenwald, Nosek, & Banaji, 2003). This measure is similar to the well-known effect-size measure d, but not identical. Specifically, whereas the standard deviation in D is calculated using scores from both tests, the standard deviation in d is calculated using a pooled within-treatment standard deviation (Greenberg et al., 2003). Research has shown that the D score compensates for differences caused by cognitive skills of the participant (Cai, Sriram, Greenwald, & McFarland, 2004).
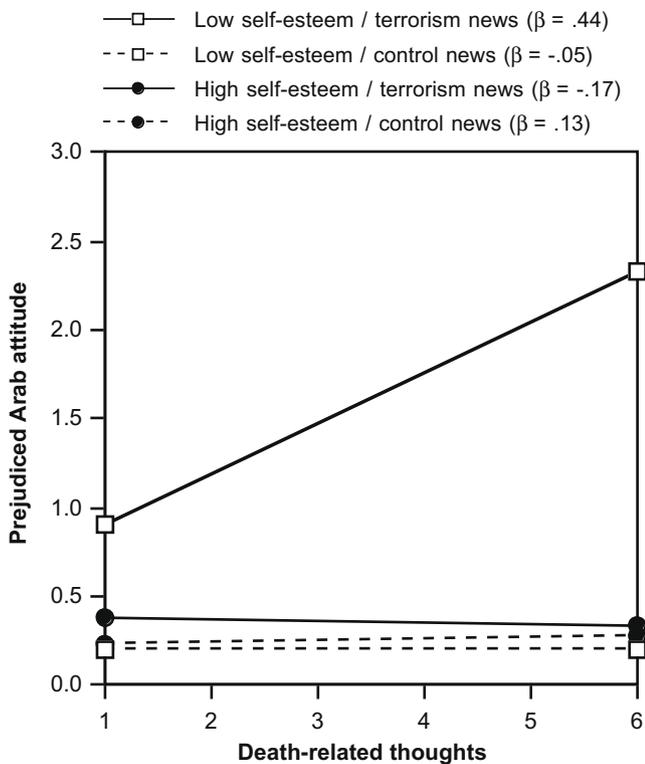
Fig. 1. Relationship between death-related thoughts and prejudiced attitudes towards Arabs for participants high and low in self-esteem who were exposed to either terrorism news or control news (Study 2).

Arabs. Another unique proposition in TMT is that terrorism news may increase prejudice against *any* outgroup member, regardless of the outgroup's role in the news, and regardless of a viewer's background. This hypothesis was tested in Study 3. Terrorism news was expected to increase prejudice against Europeans for Muslim participants, and to increase prejudice against Arabs for non-Muslim participants.

Method

Participants and materials

Participants were recruited via flyers at a University campus, and online banners placed at different Arab-Dutch websites. Participation was on a voluntary basis, and was encouraged by awarding gift vouchers of Euro 25 (about $37) in a lottery. The mean age of participants (98 women, 81 men) was 28 (*SD* = 11.53). Of the total population, 47.5% were Muslim, 29.6% were Christian, 9.5% were Catholic, 10.6% were atheist, and 8.2% had a different religious background. As expected, there was a significant correlation between country of origin – defined as (parents) being born in a country – and religious background. Specifically, the vast majority of participants with a Dutch, British, German, or Belgian background were atheist, Christian, or Catholic, whereas virtually all participants from Morocco, Egypt, Pakistan, Iran, and Iraq were Muslim. In order to assess the effects of religious background, participants were categorized into 'Muslim' (*n* = 85, 47.5%) or 'non-Muslim' (*n* = 94, 52.5%).

The procedure was similar to that used in Study 2: participants first completed demographic measures and were then randomly assigned to read a negative news article about terrorism or about animal abuse. Participants then completed the Implicit Association Test (IAT, e.g., Greenwald et al., 1998) with European names (e.g., Maarten, Marcel) versus Arab names (e.g., Akbar, Mohammed),

and good words (e.g., joy, love) versus bad words (e.g., evil, terrible). Finally, participants were debriefed.

Results

Implicit prejudiced attitudes

A 2 (news article: terrorism vs. control) × 2 (religious background: Muslim vs. non-Muslim) ANCOVA, with attitudes toward a Dutch multicultural society as the covariate, revealed a main effect for background, $F(1,135) = 22.53$, $p < 0.001$, $\eta_p^2 = 0.14$. As expected, Muslim participants generally scored below zero on the IAT, denoting prejudice against Europeans ($M = -0.29$, $SD = 0.75$), whereas non-Muslim participants generally scored above zero, denoting prejudice against Arabs ($M = 0.29$, $SD = 0.65$). More important, there was a significant interaction between news article and religious background, $F(1,135) = 3.93$, $p = 0.05$, $\eta_p^2 = 0.03$. As can be seen from Fig. 2, news on terrorism increased polarization between groups with different backgrounds. Specifically, prejudiced attitudes toward outgroup members were most pronounced after reading terrorism news, $F(1,135) = 24.23$, $p < 0.001$, $\eta_p^2 = 0.15$. This differentiation between groups was much less pronounced after reading control news, $F(1,135) = 3.55$, $p < 0.07$, $\eta_p^2 = 0.03$.

Discussion

In Study 3, terrorism news increased prejudice against Arabs for non-Muslims, and increased prejudice against Europeans for Muslim audiences. These findings further support a TMT account of terror-induced prejudice, and make other accounts of prejudice less likely. Specifically, if prejudice against Arabs was caused by the negative image of Arabs created by terrorism news, then terrorism news should have increased prejudice against Arabs, but not against Europeans. However, terrorism news also increased preju-
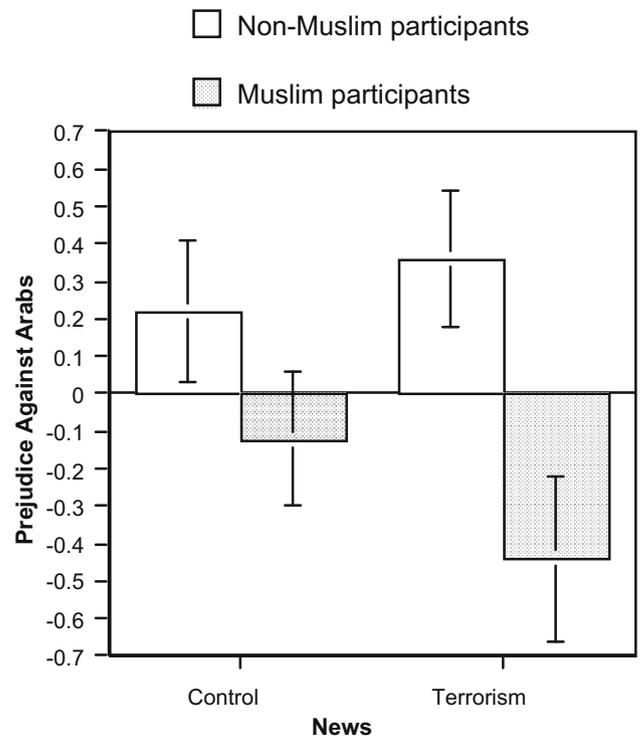
Fig. 2. Effects of terrorism news on implicit prejudiced attitudes against Arabs. Positive values denote prejudiced attitudes toward Arabs, whereas negative values denote prejudiced attitudes against Europeans (Study 3). Capped vertical bars denote 1 standard error.

dice against Europeans, a group not linked to stereotypical images of Islamic terrorists. These findings support a TMT account of terror-induced prejudice, in which terrorism news may increase prejudice against any outgroup when it confronts viewers with their own mortality.

General discussion

Three studies tested the effects of terrorism news on prejudiced attitudes toward outgroups. Based on terror management theory (TMT; Greenberg et al., 1986), we hypothesized that news reports about terrorism would remind people of their own mortality, which, in turn, would increase prejudiced attitudes. In Study 1, the murder of Dutch filmmaker Van Gogh and news reports of terrorist attacks in the US, Israel, and Russia, increased death-related thoughts. Death-related thoughts, in turn, predicted prejudiced attitudes towards Arabs, but only after Van Gogh's murder. In Study 2, news on a terrorist threat close by increased death-related thoughts, which, in turn, predicted implicit prejudice against Arabs for individuals with low self-esteem. Finally, Study 3 replicated the effect of news on terrorism on prejudice against Arabs for non-Muslim participants, and further showed that terrorism news increased prejudice against Europeans for Muslim participants.

TMT provides a unique account of prejudice by proposing that prejudice against outgroups can result from an attempt to suppress the terror evoked by thoughts of death. The present research is the first to document the full causal chain from a terrorist act to death-related thoughts to prejudice, and suggest a media priming account of the relationship between death-related thoughts and prejudice (Iyengar & Kinder, 1987). Specifically, terrorism news triggers an unconsciously activated fear of death, which then becomes the basis for judging outgroups. As a result, individuals will exhibit higher levels of prejudice against outgroups to the extent that they are more terrified after watching terrorism news. Similar patterns of findings have often been reported in the research area of media effects, where news issues often become an important evaluation standard for judging 'reality', an effect termed media priming. Likewise, (news reports about) terrorist acts may bring about thought of one's own mortality, which subsequently affect how the public views involved groups, policies, and politicians (also see Landau et al., 2004). In the case of terrorism news, unconsciously activated fears thus become linked to social judgment processes.

TMT predicts that death-related thoughts will always trigger some type of worldview defense (Greenberg et al., 1986). Nevertheless, little is known about the relationship between the accessibility of specific situational cues and the subsequent 'selection' of certain types of worldview defenses. Research suggests that situational cues can affect the activation of constructs following death-related thoughts, and thus affect the specific types of worldview defenses that are triggered across contexts. For instance, mortality salience increased the accessibility of nationalistic thoughts for men and romantic thoughts for women in one study (Arndt et al., 2004). However, when America was made salient prior to other manipulations, reminders of death also increased the accessibility of nationalistic thoughts for women. Another way of looking at the present findings, then, is that news reports increase the salience of specific types of worldview defense, and have some sort of "steering effect" on how people respond to their death-related thoughts. If this reasoning is correct, terrorism news may steer death-related thoughts in the direction of prejudice against salient outgroup members, whereas news about a famine in a third world country may steer death-related thoughts in the direction of, for instance, increased consumption (Arndt et al., 2004).

Importantly, our findings also show that terrorism news may increase prejudice against different outgroups (i.e., Arabs, Europeans), regardless of whether they are linked to news content. These findings reduce the plausibility of a stereotype generalization account of terror-induced prejudice. Specifically, if terror-induced prejudice was caused by the negative image of Arabs created by terrorism news, then prejudice should have increased against Arabs but not Europeans. However, Study 3 showed that terrorism news also increased prejudice against Europeans for Muslim participants, thus suggesting a more general account of terrorism news effects in which terrorism news can increase prejudice against any outgroup in viewers who are confronted with their own mortality.

One limitation of the present research is that it did not explicitly document the relationship between death-related thoughts and prejudice against Europeans for individuals with a Muslim background for practical reasons (Study 3), thus making the findings liable to alternative interpretation. For instance, it may be that Muslim participants who were exposed to terrorism news scored higher on prejudice against Europeans because they reasoned that Europeans were probably going to blame Arabs for the terrorist act committed by a few Islamic extremists, and that this shows how shallow and prejudiced Europeans are. In this case, prejudice against Europeans may be prompted by anger, or disappointment, rather than by an unconscious fear of death. Future studies should focus on further documenting the relationship between death-related thought and prejudice against different outgroups. Also, although the present research suggests that the psychological and physical proximity of news on terrorism may play an important role in triggering death salience and worldview defenses, we did not explicitly test this reasoning. Future research should include explicit manipulations of the psychological or physical distance of terrorism news to verify our reasoning.

Finally, the present research also point to a possible antidote against the negative side effects of terrorism news. Specifically, Study 2 showed that news on terrorism is most likely to increase prejudice for individuals suffering from low self-esteem. Other perspectives have proposed that high self-esteem promotes rather than reduces prejudice under conditions of threat (e.g., Aberson et al., 2000). TMT is unique in proposing that self-esteem serves as a psychological buffer against death concerns, and thus attenuates the effect of death thought suppression on worldview defense (Greenberg et al., 1992, 1993; Harmon-Jones et al., 1997). This means that factors that temporarily or permanently boost self-esteem are likely to mitigate negative effects of terrorism news. This seems of particular importance in view of the negative social and political consequences of terrorism news.

Acknowledgments

References

Aberson, C. L., Healy, M. R., & Romero, V. L. (2000). Ingroup bias and self-esteem: A meta-analysis. *Personality and Social Psychology Review, 4*, 157–173.
Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
Arndt, J., Cook, A., & Routledge, C. (2004). The blueprint of terror management: Understanding the cognitive architecture of psychological defense against the awareness of death. In: J. Greenberg, S. L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 35–53). New York: Guilford Press.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182.

BBC (2004, November 9). Dutch Islamic school set ablaze. <http://news.bbc.co.uk/1/hi/world/europe/3997943.stm> Downloaded 26.01.05.

Bushman, B. J., & Bonacci, A. M. (2004). You've got mail: Using e-mail to examine the effect of prejudiced attitudes on discrimination against Arabs. *Journal of Experimental Social Psychology, 40*, 753–759.

Cai, H., Sriram, N., Greenwald, A. G., & McFarland, S. G. (2004). The implicit association test's D measure can minimize a cognitive skill confound: Comment on McFarland and Crouch. *Social Cognition, 22*, 673–684.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston: Houghton Mifflin Co.

Cooper, H. H. A. (2001). Terrorism: The problem of definition revisited. *American Behavioral Scientist, 44*, 881–893.

Crocker, J., Thompson, L. L., McGraw, K. M., & Ingerman, C. (1987). Downward comparison, prejudice, and evaluations of others: Effects of self-esteem and threat. *Journal of Personality and Social Psychology, 52*, 907–916.

Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of a need for self-esteem: A terror management theory. In: R. F. Baumeister (Ed.), *Public and private self* (pp. 189–212). New York: Springer-Verlag.

Greenberg, J., Pyszczynski, T., Solomon, S., Pinel, E., Simon, L., & Jordan, K. (1993). Effects of self-esteem on vulnerability-denying defensive distortions: Further evidence of an anxiety-buffering function of self-esteem. *Journal of Experimental Social Psychology, 29*, 229–251.

Greenberg, J., Pyszczynski, T., Solomon, S., Rosenblatt, A., Veeder, M., Kirkland, S., et al. (1990). Evidence for terror management II: The effects of mortality salience on reactions to those who threaten or bolster the cultural worldview. *Journal of Personality and Social Psychology, 58*, 308–318.

Greenberg, J., Schimel, J., Martens, A., Solomon, S., & Pyszczynski, T. (2001). Sympathy for the devil: Evidence that reminding whites of their mortality promotes more favorable reactions to white racists. *Motivation and Emotion, 25*, 113–133.

Greenberg, J., Solomon, S., Pyszczynski, T., Rosenblatt, A., Burling, J., Lyon, D., et al. (1992). Assessing the terror management analysis of self-esteem: Converging evidence of an anxiety-buffering function. *Journal of Personality and Social Psychology, 63*, 913–922.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74*, 1464–1480.

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: An improved scoring algorithm. *Journal of Personality and Social Psychology, 85*, 197–216.

Harmon-Jones, E., Simon, L., Greenberg, J., Pyszczynski, T., Solomon, S., & McGregor, H. (1997). Terror management theory and self-esteem: Evidence that increased self-esteem reduces mortality salience effects. *Journal of Personality and Social Psychology, 72*, 24–36.

Hirschberger, G., & Ein-Dor, T. (2006). Defenders of a lost cause: Terror management and violent resistance to the disengagement plan. *Personality and Social Psychology Bulletin, 32*, 761–769.

Iyengar, S., & Kinder, D. R. (1987). *News that matters*. Chicago: The University of Chicago Press.

Landau, M. J., Solomon, S., Greenberg, J., Cohen, F., Pyszczynski, T., Arndt, J., et al. (2004). Deliver us from evil: The effects of mortality salience and reminders of 9/11 on support for President George W. Bush. *Personality and Social Psychology Bulletin, 30*, 136–1150.

McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly, 36*, 176–187.

Pyszczynski, T. A., Abdollahi, A., Solomon, S., Greenberg, J., Cohen, F., & Weise, D. (2006). Mortality salience, martyrdom, and military might: The great satan versus the axis of evil. *Personality and Social Psychology Bulletin, 32*, 525–537.

Pyszczynski, T. A., Greenberg, J., & Solomon, S. (2003). *In the wake of 9/11: The psychology of terror*. Washington, DC: APA Press.

Riek, B. M., Mania, E. W., & Gaertner, S. L. (2006). Intergroup threat and outgroup attitudes: A meta-analytic review. *Personality and Social Psychology Review, 10*, 336–353.

Rosenberg, M. (1965). *Society and the self-image*. Princeton, NJ: Princeton University Press.

Routledge, C., & Arndt, J. (2007). Self-sacrifice as self-defense: Mortality salience increases efforts to affirm a symbolic immortal self at the expense of the physical self. *European Journal of Social Psychology, 38*, 531–541.

Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology*. Cambridge, England: Cambridge University Press.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In: W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Chicago: Nelson-Hall.

Ullrich, J., & Cohrs, J. C. (2007). Terrorism salience increases system justification: Experimental evidence. *Social Justice Research, 20*, 117–139.

Weise, D. R., Pyszczynski, T., Cox, C. R., Arndt, J., Greenberg, J., Solomon, S., et al. (2008). Interpersonal politics: The role of terror management and attachment processes in shaping political preferences. *Psychological Science, 19*, 448–455.

West, S. G., Aiken, L. S., & Krull, J. L. (1996). Experimental personality designs: Analyzing categorical by continuous variable interactions. *Journal of Personality, 64*, 1–48.