Journal of Experimental Social Psychology 47 (2011) 1179–1184

Contents lists available at ScienceDirect

Journal of Experimental Social Psychology

journal homepage: www.elsevier.com/locate/jesp

Reports

Subtle priming of shared human experiences eliminates threat-induced negativity toward Arabs, immigrants, and peace-making

Matt Motyl [a,*], Joshua Hart [b], Tom Pyszczynski [c], David Weise [d], Molly Maxfield [c], Angelika Siedel [c]

[a] University of Virginia, USA
[b] Union College, USA
[c] University of Colorado at Colorado Springs, USA
[d] University of Arizona, USA

ARTICLE INFO

Article history:
Received 8 October 2010
Revised 20 April 2011
Available online 30 April 2011

Keywords:
Terror management
Implicit
Prejudice
Attitudes
Peace-making

ABSTRACT

Many studies demonstrate that mortality salience can increase negativity toward outgroups but few have examined variables that mitigate this effect. The present research examined whether subtly priming people to think of human experiences shared by people from diverse cultures increases perceived similarity of members of different groups, which then reduces MS-induced negativity toward outgroups. In Study 1, exposure to pictures of people from diverse cultures engaged in common human activities non-significantly reversed the effect of MS on implicit anti-Arab prejudice. In Study 2, thinking about similarities between one's own favorite childhood memories and those of people from other countries eliminated MS-induced explicit negative attitudes toward immigrants. In Study 3, thinking about similarities between one's own *painful* childhood memories and those of people from other countries eliminated the MS-induced reduction in support for peace-making. Mediation analyses suggest the effects were driven by perceived similarity of people across cultures. These findings suggest that priming widely shared human experiences can attenuate MS-induced intergroup conflict.

Published by Elsevier Inc.

The psychological threat posed by awareness of the inevitability of death has been shown to make people more hostile, disparaging, and aggressive toward dissimilar others in a multitude of groups currently embroiled in long-standing lethal conflicts, including Americans, Israelis, Palestinians, Iranians, and residents of the Ivory Coast and United Kingdom (for a review, see Motyl & Pyszczynski, 2009; Motyl, Rothschild, & Pyszczynski, 2009). Recent research has begun to explore ways of reducing this tendency for fear to increase "man's inhumanity to man" (Burns, 1784). The studies reported here investigated the possibility that subtly inducing perceptions of intergroup similarities via exposure to universal human experiences might be effective in this regard.

According to terror management theory (TMT) and research (Greenberg, Pyszczynski, & Solomon, 1986; Pyszczynski, Solomon, & Greenberg, 2003), awareness of the inevitability of death often encourages hostility toward members of outgroups because those with beliefs and values different from one's own undermine the protection from anxiety that one's own worldview provides. From this perspective, people manage the potential for anxiety that results from awareness of their vulnerability and mortality by subscribing to cultural worldviews – for example, religions, political and moral systems, and other ways of construing reality in meaningful terms. These worldviews are tenuous because they are socially constructed, and not shared by all people. Awareness of alternative worldviews is problematic because it raises the possibility that one's own worldview is incorrect, thus undermining its ability to provide protection against existential anxiety. People often defuse the threat posed by alternative worldviews by asserting the superiority of their own worldviews, sometimes by attempting to convert, derogate, or kill (or support the killing of) outgroup members.

For instance, Pyszczynski et al. (2006) found that under control conditions, Iranian college students preferred a pacifistic fellow student who opposed the use of martyrdom attacks against the United States. Death reminders, however, reversed this pacifism, shifting participants' preferences toward an anti-Western student who supported martyrdom attacks. A parallel study conducted by these researchers in the United States found that reminders of death increased politically conservative Americans' support for the use of extreme military force, including weapons of mass destruction, to fight terrorism. Other studies have shown reminders of death to increase support for the use of lethal violence among politically conservative Israelis (e.g., Hirschberger & Ein-Dor, 2006), and citizens of the Ivory Coast (Chatard et al., 2011). Research also has shown mortality salience to increase physical aggression in the laboratory (e.g., McGregor et al., 1998).

Despite this large body of research demonstrating the effect of mortality salience (MS) on hostile worldview defense, TMT suggests that increased intergroup conflict is not an inevitable consequence of

* Corresponding author.
E-mail address: motyl@virginia.edu (M. Motyl).

0022-1031/$ – see front matter. Published by Elsevier Inc.
doi:10.1016/j.jesp.2011.04.010

awareness of the inevitability of death. Consistent with this view, research has shown that priming the value of tolerance eliminates hostile reactions to dissimilar others that MS otherwise produced (Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992). Similarly, fundamentalist Christians and Muslims, who tended to be the most ardent supporters of militaristic violence after death reminders, became less supportive of violence when they first endorsed compassionate religious teachings (Rothschild, Abdollahi, & Pyszczynski, 2009).

In the present studies, we explored another factor that might discourage MS from increasing intergroup hostility. Following other researchers and theorists (e.g., Gaertner & Dovidio, 2000; McAlister, Bandura, & Owen, 2006), we tested the hypothesis that priming shared human experiences (SHE), that is, relatively universal aspects of human experience that are shared by people of all cultures, would have palliative effects on intergroup relations. Although simply noting the aspects of life that people share with those from different cultures, who are different from themselves in many obvious ways, seems unlikely to completely dissolve group distinctions, we reasoned that increasing the sense that diverse groups of people have much in common nonetheless would reduce the tendency for people to respond to existential threat by becoming more hostile toward outgroups.

Experiment 1: Shared human experience and implicit anti-Arab prejudice

Experiment 1 examined whether priming people with pictures of families from diverse cultures would eliminate MS-induced increases in anti-Arab bias. We chose an implicit measure of anti-Arab prejudice, the Implicit Association Test (IAT; Nosek, Greenwald, & Banaji, 2005), for use in this study because the high level of publicity surrounding the "war on terror" at the time the study was conducted made us concerned that self-report measures might be subject to social desirability biases or act as a demand characteristic. Although many studies have shown that reminders of death increase prejudice and hostility toward outgroup members, we know of no prior demonstrations of this effect on an implicit measure of prejudice.

Method

Participants

One hundred and two American-born, Caucasian, non-Hispanic introductory psychology students (80 women) ranging in age from 18 to 52 years ($M = 23.92$, $SD = 7.74$) at a mid-sized university in the western part of the United States participated for extra credit.

Materials and procedure

Participants were told they were taking part in two separate studies. The first was described as a study of how personality affects esthetic judgments; the second was described as a study to validate a new cognitive measure that involved categorizing names into different evaluative categories. For the first study, participants were asked to answer some open-ended questions purported to assess personality. They then were randomly assigned to answer open-ended questions related to death (MS) or another aversive topic, dental pain, which has been used as a comparison condition in many past TMT studies (see Rothschild et al., 2009; Vail, Arndt, Motyl, & Pyszczynski, 2009).

Next, to manipulate SHE priming, participants evaluated the aesthetic qualities of a series of pictures. Participants were randomly assigned to see one of three sets of five photographs. In the set compiled to depict widely SHE, each showed groups of people from diverse cultures engaging in common family experiences (e.g., sitting together at a dinner table, playing together). In one of the comparison conditions, participants viewed images of white American families engaging in similar activities; in the other comparison condition, participants viewed images of groups of people engaging in mundane, non-interactive, solitary activities (e.g., an individual sitting at a computer, individuals standing around looking at cars on a street).The pictures in this latter condition contained people of multiple races, but they were not dressed in attire indicative of any traditional non-American culture and the settings appeared to be in the United States. In line with the cover story, participants in all conditions were asked to make "aesthetic judgments" about the photos along three different dimensions: attractiveness, quality of color contrast, and quality of photograph sharpness. Next, participants completed the 20-item Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988).[1] Then, participants were informed they had finished the first study and were escorted into a cubicle for the next study.

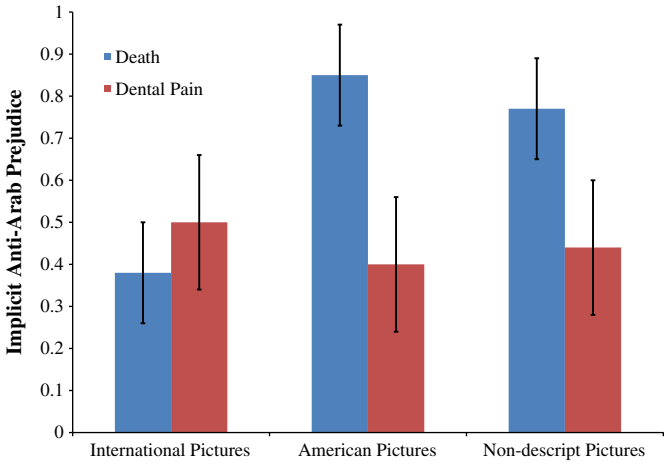

Fig. 1. IAT Anti-Arab prejudice scores as a function of MS and SHE condition.

The "second study" consisted of an IAT measuring participants' reaction times associating Arab names (e.g., *Akbar*, *Sharif*, *Wahib*) and common American names (e.g., *Allan*, *John*, *Robert*) with words from "good" (e.g., *glorious*, *happy*, *joy*) and "bad" (e.g., *awful*, *nasty*, *evil*) categories. This Arab/American IAT was administered and scored following standard IAT procedures (see Greenwald, Nosek, & Banaji, 2003). If participants were faster associating Arab names with bad words than they were associating Arab names with good words or American names with bad words, this indicated implicit anti-Arab bias. (Demonstrations of the IAT procedure can be obtained at http://implicit.harvard.edu.)

Results and discussion

A 3 (International Pictures/American Pictures/Non-descript Individuals Pictures) × 2 (mortality/dental pain salience) analysis of variance (ANOVA) conducted on anti-Arab prejudice IAT scores revealed a significant main effect of MS, $F(1, 103) = 4.18$, $p < .05$, $\eta^2 = 04$, and the predicted significant interaction, $F(2, 103) = 3.73$, $p < .05$, $\eta^2 = .07$, but no main effect of the shared human experiences manipulation ($p > .70$). Means are presented in Fig. 1. Simple main effect analyses revealed that MS had significantly different effects in each of the prime conditions. Specifically, these comparisons revealed that MS increased implicit anti-Arab prejudice significantly in the American family condition, $F(1, 103) = 3.83$, $p < .05$, $\eta^2 = .04$, and marginally in the non-descript individuals condition, $F(1, 103) = 3.42$, $p = .07$, $\eta^2 = .03$. However, consistent with predictions, MS had no effect in the International families (SHE) condition, $F(1, 103) = 1.40$, $p > .05$, $\eta^2 = .01$; indeed, priming SHE in this way non-significantly reversed the direction of this effect. Looked at differently, participants primed with death displayed less implicit anti-Arab prejudice in the

[1] Separate 2 × 2 ANOVAs were conducted on the positive and negative affect subscales of the Positive and Negative Affect Scale. In Experiments 1 and 3, there were no effects on either subscale, $ps > .21$.

international families (SHE) condition relative to their counterparts in either the American families condition or the non-descript individuals condition, $F(2, 103) = 6.24$, $p < .05$, $\eta^2 = .12$; these latter two groups did not differ from each other $p > .35$.Within the dental pain control conditions, there were no significant differences between any of the SHE prime conditions ($ps > .20$).

In sum, Experiment 1 replicated the well-established effect of MS on intergroup bias, and to our knowledge is the first such demonstration of this effect on a measure of *implicit* prejudice. However, this effect of MS on intergroup prejudice was completely eliminated among participants primed with pictures of families from diverse cultures. The fact that MS increased anti-Arab prejudice in both the American family and unrelated individuals conditions but not in the international families condition suggests that it is not an effect of priming families, per se, but rather, the fact that these families came from diverse cultures that was responsible for this prejudice reducing effect. The fact that MS increased anti-Arab prejudice among participants in both the unrelated non-descript individuals condition and the American families conditions, which did not differ from each other, suggests that this MS-produced increase in prejudice was not dependent on an effect of the American family pictures activating increases in group allegiance. This provided initial support for the idea that reminding people of the many human experiences they have in common with people from different cultures inhibits the increase in negative reactions to outgroups that MS often produces.

Experiment 2: Positive shared experiences and explicit anti-immigrant prejudice

Experiment 2 was designed to provide a conceptual replication of Experiment 1 using a different manipulation of SHE and a different dependent measure. Rather than viewing pictures of people from diverse cultures, participants read recollections of other people's favorite childhood memories, which came from either fellow Americans or people from diverse cultures. To encourage participants to notice the similarities between these experiences and their own, they were asked to briefly write about similar memories form their own childhood. To enhance the generality of the effects of our SHE manipulation, we assessed a different type of negative reaction to outgroups, specifically, attitudes toward immigration and immigrants. We also included a measure of the extent to which participants viewed people from different cultures as similar or different form each other, to test our reasoning about the role of increased perceptions of human similarities as a mediator of this effect. We hypothesized that SHE priming would inhibit MS-induced increases in anti-immigration attitudes by increasing participants' perception of the similarity of all humans.

Method

Participants

Fifty-five American-born, Caucasian undergraduate introductory psychology students (35 women) with ages ranging from 18 to 47 years ($M = 20.75$, $SD = 5.15$) at a mid-sized university in the western part of the United States participated for extra credit.

Materials and procedure

The experimenter introduced the study as concerning the relationship between personality characteristics, childhood memories, and current attitudes. Participants were tested individually in laboratory cubicles. To manipulate SHE, participants were given a survey packet containing one of two sets of vignettes, describing "favorite childhood memories." In the SHE condition, these were purportedly written by students from diverse countries, specifically Bangladesh, India, and Mexico, or the United States. In the comparison condition they were purportedly written by Americans students. These vignettes were identical in the two conditions except for the names and geographic origins of the children depicted in them. For example, one vignette read:

> I'll always remember when my family brought me to the beach for the very first time. It was on a trip to Acapulco and I was only 6 years old at the time. It was amazing. I got to build my first sandcastle and play in the rough waters. Some of the waves were bigger than me and would throw me around. That didn't stop me from playing in the water though!!
>
> -Miguel [Michael] from Cuernavaca, Mexico [Orlando, Florida]

After reading each vignette, participants were asked to recall a similar childhood memory of their own and to describe it in three to five sentences.

Based on random assignment, participants were then primed with either MS or dental pain (as in Experiment 1) followed by the PANAS (Watson et al., 1988).[2] They then completed an 8-item measure of perceived similarity of people from diverse cultures (e.g., "I see a lot of parallels between our culture and the core values that guide the lives of people from different countries"; and "Regardless of religion or culture, people from all other countries have hopes and dreams that are the same as our own"), rating agreement on an 11-point scale (11 = *strongly agree*, 1 = *strongly disagree*). Internal reliability was acceptable ($\alpha = .67$).

Lastly, participants completed a 14-item assessment of their attitudes toward immigration (e.g., "We should construct physical barriers [e.g., walls, fences etc.] along our borders to restrict the flow of illegal immigrants" and "Illegal immigrants are largely responsible for the dismal state of healthcare services in America today") by rating their agreement on 11-point scales (11 = *strongly agree*, 1 = *strongly disagree*). Internal reliability was excellent, $\alpha = .89$.

Results and discussion

A 2 (International Authors vs. American Authors) × 2 (MS vs. dental pain) ANOVA revealed only a significant main effect of the SHE manipulation on perceived similarity of people from diverse cultures, $F(1, 51) = 4.90$, $p < .05$, $\eta^2 = .09$. Participants in the SHE condition perceived that people from diverse cultures were significantly more similar to each other ($M = 5.77$, $SD = 1.95$) than did participants in the comparison condition ($M = 4.75$, $SD = 1.41$), suggesting that the manipulation was effective. There was no significant main effect of MS or interaction between MS and SHE priming on perceived similarity.

A parallel ANOVA on attitudes toward immigration revealed a main effect of the SHE manipulation, $F(1, 51) = 5.44$, $p < .05$, $\eta^2 = .08$, a marginal effect of MS $F(1, 51) = 2.66$, $p = .10$, $\eta^2 = .05$, and the predicted two-way interaction, $F(1, 51) = 5.13$, $p < .05$, $\eta^2 = .09$. Means are presented in Fig. 2. Simple main effects tests indicated that MS elevated anti-immigration attitudes in the American authors comparison condition, $F(1, 51) = 8.05$, $p < .05$, $\eta^2 = .14$, but not in the international authors (SHE)condition, $F(1, 51) = 0.19$, $p > .05$. Looked at differently, the SHE prime caused a significant decrease in anti-immigrant attitudes in the MS condition, $F(1, 51) = 11.21$, $p < .05$, $\eta^2 = .18$, but not in the dental pain control condition, $F(1, 51) = 0.02$, $p > .05$, $\eta^2 = .00$. These findings conceptually replicate those from

[2] In Experiment 2, separate 2 × 2 ANOVAs were performed on the positive and negative affect subscales of the PANAS. There was a significant main effect of MS on positive affect, $F(1, 51) = 4.30$, $p < .05$. Participants reported more positive affect after MS ($M = 3.14$, $SD = .87$) than after a dental pain reminder ($M = 2.71$, $SD = .83$). There were no significant effects of MS or SHE on negative affect. To assess the possibility that positive affect may have been mediating the effects of MS and SHE on anti-immigrant attitudes, another ANOVA was conducted with positive affect as a covariate. Including positive affect did not alter the original MS × SHE interaction for anti-immigrant attitudes, $F(1, 50) = 4.69$, $p < .05$, $\eta^2 = .09$.

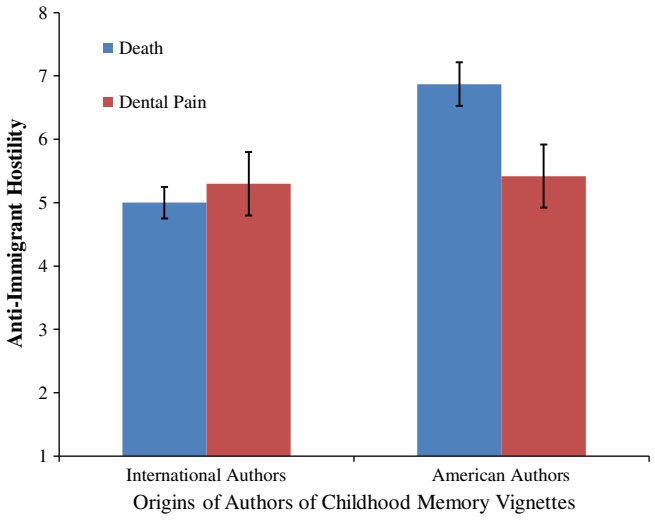

Fig. 2. Anti-immigrant hostility as a function of MS and SHE condition. Higher numbers indicate higher levels of anti-immigrant hostility.

Experiment 1: priming human experiences shared across cultures inhibits MS-induced negativity toward outgroups.

To test whether increased perceptions of human similarity produced by SHE priming mediated these effects, we conducted a mediation analysis following Baron and Kenny's (1986) recommendations. This method is among the most stringent tests of mediational hypotheses (see Judd & Kenny, 2010; MacKinnon, Fairchild, & Fritz, 2007). First, a regression analysis confirmed the effects of the SHE manipulation on perceived similarity, unstandardized $b = 1.15$, $p < .05$. Another regression analysis confirmed the MS × SHE interaction on anti-immigrant attitudes, unstandardized $b = .72$, $p < .05$. Next, a regression analysis revealed a significant MS × Perceived Similarity interaction on anti-immigrant attitudes, unstandardized $b = -.64$, $p < .05$. Finally, a regression analysis in which SHE priming, MS, and perceived similarity (the mediator) were entered in the first step and the interactions of MS × SHE and MS × Perceived Similarity were entered in the third step was conducted. This analysis revealed that the direct effects of the SHE manipulation, MS, and the interaction between the two were no longer significant, unstandardized $b = -1.59$, $p > .05$, but the interaction between MS and perceived similarity significantly predicted anti-immigrant attitudes, unstandardized $b = .38$, $p < .05$. Sobel's test for mediation supported this hypothesis, Sobel's test statistic $= -1.98$, $p < .05$. These findings suggest that perceived human similarity across cultures mediates the effects of MS and SHE on anti-immigrant hostility.

These results extend the generality of the findings of Study 1 by replicating them with a different manipulation of shared human experience and a different measure of negative attitudes toward outgroups. They also show that these effects are mediated by increased perceptions of similarity of people from diverse cultures.

Experiment 3: Negative shared human experiences and support for peace-making

Experiment 3 was designed to address a possible confound in Experiments 1 and 2: The shared experiences in those studies were uniformly positive, so it is possible (despite null effects on mood reports) that the effect was due to the positivity of the SHE that was depicted in those studies. If priming negative SHE also reduces negativity toward outgroups, we can confidently conclude that these primes are not ameliorating intergroup conflict by elevating positive affect. Experiment 3 also further tested the generalizability of the effects obtained in Experiments 1 and 2 by using a different, more expansive dependent measure that assesses the converse of intergroup hostility: support for peace-making.

Method

Participants

Ninety-three American undergraduate introductory psychology students at a liberal arts college in the Northeastern United States (55 women), ranging in age from 18 to 22 years ($M = 19.31$, $SD = 0.99$), participated for credit toward a course requirement.

Materials and procedure

The experimenter introduced the study as concerning the relationship between personality and attitudes. In small groups, participants were randomly assigned to one of four conditions in a 2 (MS vs. dental pain) × 2 (International Authors vs. US Authors) factorial design.

First, participants were exposed to a SHE manipulation similar to that of Study 2, but with negative instead of positive content. In the SHE condition, the three vignettes were purportedly written by students from the same countries used in Study 2, whereas in the comparison condition the vignettes were purportedly written by American students. These vignettes were identical to one another with only the names and geographic origins of the children altered. For example, one vignette read:

> I'll always remember the first time I ever felt embarrassed. I had to recite a poem in class and when I got in front of everyone, my mind drew a blank. Everyone stared at me as I struggled to recall what I had spent so much time studying. Nothing came to me and my classmates couldn't help but tease me for my lapse of memory.
>
> -Miguel [Michael] from Cuernavaca, Mexico [Orlando, Florida]

After reading each vignette, participants were asked to recall a similar memory of their own and describe it in three to five sentences. The vignettes depicting the foreign students served as the SHE induction in that they prompted participants to think of similarities between themselves and people from three other cultures. Conversely, the vignettes purportedly written by American students comprised the comparison condition.

Participants next completed the same MS manipulation and PANAS mood measure as in Experiments 1 and 2. Afterward, they completed the same perceived human similarity measure as in Experiment 2 and the 14-item Support for Peace-making Scale (Vail & Motyl, 2010), indicating their agreement with each item (e.g., "Leaders of the United States should actively engage in diplomatic efforts with the leaders of states who sponsor terrorism (e.g., Iran, Libya, Syria)" and "If the U.S. wants peace, it must set a peaceful example") on 10-point scales (10 = *strongly agree*, 1 = *strongly disagree*). This scale demonstrated excellent internal reliability, $\alpha = .91$.

Results and discussion

A two-way (International Authors vs. American Authors) × 2 (MS vs. dental pain) ANOVA on perceived similarity scores revealed only a significant main effect of the SHE manipulation on perceptions of human similarities, $F(1, 89) = 3.84$, $p < .05$, $\eta^2 = .04$. Participants in the SHE condition viewed people from diverse cultures as more similar ($M = 7.31$, $SD = 1.26$) than did participants in the comparison condition ($M = 6.70$, $SD = 1.52$), suggesting that this manipulation was effective. There was no main effect of MS or interaction between MS and SHE on perceived similarity.

A parallel ANOVA on the support for peace-making scale revealed a significant main effect for MS, $F(1, 89) = 4.06$, $p < .05$, $\eta^2 = .04$, no significant main effect of SHE ($p = .76$), and the predicted significant interaction, $F(1, 89) = 4.88$, $p < .05$, $\eta^2 = .05$. Means are presented in

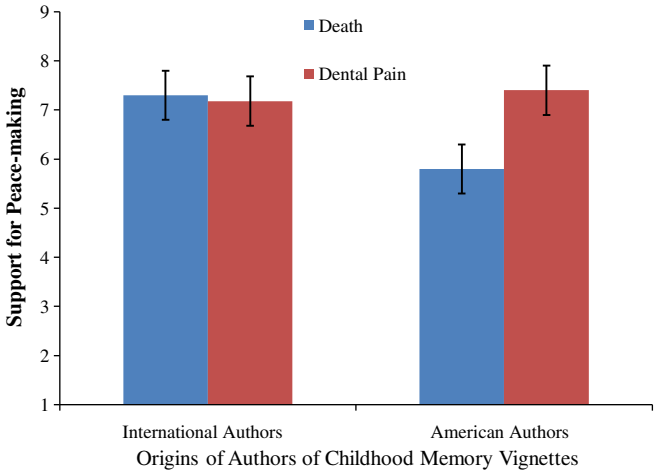

Fig. 3. Support for peace-making as a function of MS and SHE condition. Higher numbers indicate greater support for peace-making.

Fig. 3. Simple main effects tests revealed that MS led to a significant decrease in support for peace-making in the American-authors condition, $F(1, 89) = 9.02$, $p < .05$, $\eta^2 = .09$, but not in the international-authors (SHE) condition ($p = .89$). Looked at differently, within the MS condition, the SHE prime led to a non-significant increase in support for peace-making, $F(1, 89) = 1.87$, $p = .17$, $\eta^2 = .03$.

To test whether increased perceptions of human similarity produced by SHE priming mediated these effects, we conducted a mediation analysis following Baron and Kenny's (1986) recommendations. First, a regression analysis confirmed the effects of the SHE manipulation on perceived similarity, unstandardized $b = 0.60$, $p < .05$. Another regression analysis confirmed the MS × SHE interaction on support for peace-making, unstandardized $b = 1.52$, $p < .05$. Next, a regression analysis revealed a significant MS × Perceived Similarity interaction on support for peace-making, unstandardized $b = .47$, $p < .05$. Finally, a regression analysis in which SHE priming, MS, and perceived similarity (the mediator) were entered in the first step and the interactions of MS × SHE and MS × Perceived Similarity were entered in the third step was conducted. This analysis revealed that the direct effects of the SHE manipulation, MS, and the interaction between the two were no longer significant, unstandardized $b = 1.13$, $p > .05$, but the interaction between MS and perceived similarity significantly predicted support for peace-making, unstandardized $b = .38$, $p < .05$. Sobel's test for mediation supported this hypothesis, Sobel's test statistic = 2.01, $p < .05$. These findings suggest that perceived similarity across cultures mediates the effects of MS and SHE on support for peace-making.

Experiment 3 conceptually replicated the findings from Experiments 1 and 2 with a different manipulation of SHE and a dependent measure that assessed the converse of intergroup hostility. Experiment 3 also ruled out a general positivity interpretation by demonstrating that SHE reminders need not be positive to facilitate improved intergroup relations. This study shows that thinking of how people in diverse cultures experience embarrassment and heartbreak just as Americans do led to increased recognition of human similarities across diverse cultures, which increased preference for peaceful diplomatic solutions to international conflicts. This replication of the mediational model from Study 2 provides further evidence that perception of human similarity across cultures can play a significant role in improving intergroup relations even in the face of existential fear.

General discussion

Much previous research has shown that existential threats can increase hostility and prejudice against outgroups (e.g., Pyszczynski et al., 1996; Weise et al., 2008). The volume of research demonstrating this tendency raised the question of whether existential threats inevitably increase hostility and, if not, what types of interventions may stifle this process. In the neutral and ingroup prime conditions of the three studies reported here, reminders of death increased hostility toward outgroup members—specifically Arabs, immigrants, and international adversaries. Study 1 provided the first evidence of an effect of mortality salience on an implicit measure of prejudice, which was extended to explicit measures of anti-immigration attitudes in Study 2 and support for international peace-making efforts in Study 3. Importantly, these effects were entirely eliminated when participants were subtly primed with information suggesting that they share some important, basic human similarities with people from diverse cultures. This was accomplished by viewing pictures of families from diverse cultures in Study 1, reading accounts of favorite childhood memories of people from diverse cultures in Study 2, or reading accounts of embarrassing or unpleasant memories of people from diverse cultures in Study 3.

The manipulations of SHE used in these studies did not specifically focus on persons in the outgroups toward which attitudes were assessed. Rather, they depicted experiences across diverse cultures, none of which were the target of the anti-outgroup attitudes that were assessed. These findings suggest that when people view members of diverse cultures as similar to themselves it eliminates the increase in hostility towards outgroups that existential threat otherwise produces. Mediation analyses conducted in Studies 2 and 3 support this interpretation. When the variance due to the effect of the manipulations on perceptions of similarity across cultures was taken out of the equations, the effects on anti-immigrant attitudes and support for peace-making were no longer statistically significant.

These findings are generally consistent with the pioneering work of Sherif (1966) on the conflict-reducing properties of shared group identity, and the more recent elaboration of these ideas in Gaertner and Dovidio's (2000) Common Ingroup Identity Model. It is possible that considering similarities between groups may trigger a recategorization mechanism by which people expand the inclusiveness of their ingroup to include members of the similar groups (see Gaertner & Dovidio, 2000). We think it more likely, however, that the instances of SHE that were primed in the present studies simply increased perceptions that, despite their differences, people from diverse cultures have many similarities and share some very basic human experiences. The fact that these effects were mediated by perceptions of human similarity across cultures is consistent with this view. Of course perceiving similarity with others is likely to encourage people to be more willing to categorize people from different cultures as members of their ingroup. It seems highly unlikely, however, that distinctions among people from different cultures completely dissolves when they are made aware of their similarities. Thus we prefer to view the present findings as resulting from increased perceptions of similarity rather than an elimination of distinctions between groups. Of course, this is a complex issue that will require additional research and conceptual development to fully resolve.

The present findings extend previous findings of reduced prejudice when group distinctions are minimized by showing that a heightened sense that all people have much in common can eliminate the increased hostility that is often produced by existential threat. It also documents the efficacy of subtle reminders of basic experiences that all people share in reducing the hostility-promoting effects of threat and provides direct evidence that changes in perceptions of human similarities mediate these effects. The present research suggests that such prejudice-reducing effects of thoughts of SHE may be especially likely when people are faced with existential threat, which would represent a rare instance where threat does not lead to increased intergroup prejudice.

The present findings add to a growing body of research showing that increased prejudice and hostility are not an inevitable response to existential threat. Along with the present findings of a conflict-reducing

effect of focus on SHE, Rothschild et al. (2009) found that fundamentalist Christians and Muslims become less supportive of violent actions against one another when a reminder of death is combined with priming the compassionate teachings from their religious texts. In a related vein, Motyl, Hart, and Pyszczynski (2009) found that the effect of MS on violent behavior is eliminated when people contemplate the animalistic nature of violent behavior and Weise et al. (2008) found that priming thoughts of caring interactions with attachment figures eliminated the effect of mortality salience on support for the use of extreme military force.

The present studies provide another promising example of how fear-fueled intergroup hostility can be reduced. Our findings are consistent with the message espoused by such prominent leaders as Reverend Desmond Tutu and Nobel Laureate Nelson Mandela, who have advocated intergroup cooperation and harmony and the interconnectedness of all peoples; Mandela reminded South Africans that all peoples are inextricably linked in their shared human experiences. In the US, the late Attorney General Robert F. Kennedy spoke passionately about how, "those who live with us are our brothers, that they share with us the same short moment of life; that they seek, as do we, nothing but the chance to live out their lives in purpose and in happiness, winning what satisfaction and fulfillment they can." The current findings suggest that the universalistic words of such leaders have the potential to encourage more positive intergroup relations during intergroup conflict. Now the question becomes how to produce lasting increases in this sense of core human similarity among people of diverse cultures living in the many war-torn regions of our world.

Acknowledgments

The research and writing of this paper was supported in part by a grant from the Air Force Office of Sponsored Research, FA9550-04-1-0239. We are grateful to Jacquie Vorauer, Sophie Trawalter, and Gary Sherman for their insightful comments on earlier drafts of this article.

References

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.

Burns, R. (1784; 2003). The Canongate Burns: The complete poems and songs of Robert Burns. In A. Noble, & P. S. Hogg (Eds.), Edinburgh: Canongate Books.

Chatard, A., Selimbegovic, L., N'Dri Konan, P., Arndt, J., Pyszczynski, T., Lorenzi-Cioldi, F., & Van der Linden, M. (2011). Terror management in times of war: Mortality salience effects on self-esteem and overnmental and army support. *Journal of Peace Research*, *48*, 225–234.

Gaertner, S. L., & Dovidio, J. F. (2000). *Reducing intergroup bias: The common ingroup identity model.* New York: Psychology Press.

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 self and private self* (pp. 189–212). New York: Springer-Verlag.

Greenberg, J., Simon, L., Pyszczynski, T., Solomon, S., & Chatel, D. (1992). Terror management and tolerance: Does mortality salience always intensify negative reactions to others who threaten one's worldview? *Journal of Personality and Social Psychology*, *63*, 212–220.

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

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.

Judd, C. M., & Kenny, D. A. (2010). Data analysis in social psychology: Recent and recurring issues. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 115–142). New Jersey: John Wiley & Sons, Inc.

MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual Review of Psychology*, *58*, 593–614.

McAlister, A. L., Bandura, A., & Owen, S. V. (2006). Mechanisms of moral disengagement in support of military force: The impact of Sept. 11. *Journal of Social and Clinical Psychology*, *25*, 141–165.

McGregor, H., Lieberman, J. D., Solomon, S., Greenberg, J., Arndt, J., Simon, L., et al. (1998). Terror management and aggression: Evidence that mortality salience motivates aggression against worldview threatening others. *Journal of Personality and Social Psychology*, *74*, 590–605.

Motyl, M., Hart, J., & Pyszczynski, T. (2009). When animals attack: The effects of mortality salience, infrahumanization of violence, and authoritarianism on support for war. *Journal of Experimental Social Psychology*, *46*, 200–203.

Motyl, M., & Pyszczynski, T. (2009). The existential underpinnings of the cycle of terrorist and counterterrorist violence and pathways to peaceful resolutions. *International Review of Social Psychology*, *22*, 267–291.

Motyl, M., Rothschild, Z., & Pyszczynski, T. (2009). The cycle of violence and pathways to peace. *Organisational Transformation and Social Change*, *6*, 153–170.

Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the Implicit Association Test: II. Method variables and construct validity. *Personality and Social Psychology Bulletin*, *31*, 166–180.

Pyszczynski, T., 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., Solomon, S., & Greenberg, J. (2003). *In the wake of 9/11: The psychology of terror.* New York: American Psychological Association.

Pyszczysnki, T., Wicklund, R. A., Floresku, S., Koch, H., Gauch, G., Solomon, S., et al. (1996). Whistling in the dark: Exaggerated consensus estimates in response to incidental reminders of mortality. *Psychological Science*, *7*, 332–336.

Rothschild, Z. K., Abdollahi, A., & Pyszczynski, T. (2009). Does peace have a prayer? The effect of mortality salience, compassionate values, and religious fundamentalism on hostility toward outgroups. *Journal of Experimental Social Psychology*, *45*, 816–827.

Sherif, M. (1966). *In common predicament.* Boston: Houghton Mifflin.

Vail, K. E., III, Arndt, J., Motyl, M., & Pyszczynski, T. (2009). Compassionate values and presidential politics: Mortality salience, compassionate values and support for Barack Obama and John McCain in the 2008 presidential election. *Analyses of Social Issues and Public Policy*, *9*, 255–268.

Vail, K. E., III, & Motyl, M. S. (2010). Support for diplomacy: Peacemaking and militarism as a unidimensional correlate of social, environmental, and political attitudes. *Peace and Conflict: The Journal of Peace Psychology*, *16*, 29–57.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063–1070.

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.