

# Terror Management in a Predominantly Muslim Country

## The Effects of Mortality Salience on University Identity and on Preference for the Development of International Relations

Doğan Kökdemir and Zuhâl Yeniçeri

Department of Psychology, Baskent University, Ankara, Turkey

**Abstract.** The mortality salience hypothesis of terror management theory was tested in a predominantly Muslim country. In Study 1a, private university students primed with thoughts of death reported more negative evaluations of a paragraph arguing state universities' superiority to private ones, compared to a control condition in which "death" was replaced by "an important exam." Study 1b conceptually replicated this finding at a state university. Study 2 found that MS participants wanted their home country to have stronger relations with Turkmenistan and weaker relations with England and Greece. Results were discussed with reference to university and national identity, and implications for future research were noted.

**Keywords:** terror management theory, mortality salience, university identity, international relations

Unlike other species, human beings are aware of their inevitable death. Terror management theory (TMT), derived from the work of Ernest Becker (1973), posits that people buffer the anxiety stemming from the knowledge of being mortal by (1) maintaining high self-esteem, enabling people to see themselves as valuable contributors in a meaningful world, and (2) defending their cultural worldviews, which imbue the universe with meaning, permanence, order, and stability. This dual-component cultural anxiety buffer provides individuals with feelings of symbolic and/or literal immortality (Greenberg, Pyszczynski, & Solomon, 1986; Solomon, Greenberg, & Pyszczynski, 1991).

Hypotheses derived from TMT have been empirically tested for almost 20 years with more than 250 studies in many countries, including the United States and Germany (Pyszczynski, et al., 1996), Israel (Florian & Mikulincer, 1997), Italy (Castano, Yzerbyt, Paladino, & Sacchi, 2002), and Japan (Heine, Harihara, & Niya, 2002). TMT experiments find that university students asked to write about their own death (mortality salience; MS) tend to engage in world-view defense by showing more favorable attitudes toward those who support their cultural worldviews and more negative attitudes toward those who threaten them. This occurs even in groups created by minimal group paradigm, if being in a group fosters an identity (Harmon-Jones, Greenberg, Solomon, & Simon, 1996). In addition to studies with university students, similar effects of MS have been found with older children (Florian & Mikulincer, 1998)

and professionals such as judges in middle age (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989).

Some researchers question the universality of TMT because studies have only been conducted on Western European participants (Navarrete, 2005; Navarrete & Fessler, 2005). In recent years, although some TMT studies have found predictable MS effects with non-Western participants (e.g., Pyszczynski et al., 2006; Tam, Chiu, & Lau, 2007), additional research with diverse populations is clearly warranted. The present research was designed to test hypotheses derived from TMT in Turkey, a predominantly Muslim country which may be considered both European and Asian. Religion is an important tool to achieve symbolic immortality; it helps people find meaning both in life and death, allowing them to believe in life after death. Since people with different religious affiliations may respond to MS differently, we planned to test the MS hypothesis of TMT in a country with different "immortality project(s)" (Becker, 1973). In their discussions of the Middle East, Pyszczynski, Solomon, and Greenberg (2003) assumed that TMT processes demonstrated in the West could operate in the Middle East as well, but this assumption must be tested empirically.

Do people in a predominantly Muslim country *disguise* death? The holy book of Islam, Koran, tells us that

Every soul shall taste of death, and you shall only be paid fully your reward on the resurrection day; then whoever is removed far away from the fire and is

made to enter the garden he indeed has attained the object; and the life of this world is nothing but a provision of vanities. (Sura: The Family of Imran, Verse: 185)

and “Wherever you are, death will overtake you, though you are in lofty towers...” (Sura: Women, Verse: 78). Compared to other Islamic countries such as Saudi Arabia and Iran, Turkey is a secular and democratic country where the modern legal system rather than religion determines public life. However, similar to Islamic countries, the concept of death is not hidden as much as it may be in the West. Mortality is kept close to consciousness in many ways. People are expected to visit the graves of their loved ones at bairams (religious festivals), and signs which read, “*Every soul shall taste of death,*” are common at the entrance of cemeteries. Neighbors, friends, relatives, and even strangers living in the same building and/or neighborhood visit the person in grief, during the mourning period which lasts 40 days. More specifically, in the first 7 days after death, persons who are experiencing bereavement do not cook. Instead, friends, relatives, and neighbors maintain all things necessary for them to survive. The main purpose of this strong social system is to provide an opportunity for anguished people to express their emotions. People in grief are not expected to be calm, realistic, or future oriented. On the contrary, strong emotional reactions such as crying and yelling are accepted and even expected. Others come to visit “*ölü evi*” (dead’s home) to share and even to intensify their feelings. The major terms discussed during these visits are the positive characteristics of the deceased, the well-being of other individuals (especially children if there are any), and the inevitability of death.

Whether one is a true believer of Islam or not, living in a predominantly Muslim country emphasizes the inevitability of death. Therefore, individuals in such countries may have been so desensitized (or oversensitized) that reminders of death may produce different effects. The present study was therefore designed to test whether the theoretical expectations of TMT are valid in Turkey. To investigate the effects of mortality salience on a Muslim country, Pyszczynski and his colleagues (2006) studied with Iranian college students. Their study showed that thoughts of death increased the willingness of people from Iran to inflict harm on citizens of other nations.

To test the MS hypothesis, instead of using nationalistic or religious concepts, we first used university identity as a source of cultural worldview. Universities, as long-lasting social structures, provide their students with a sense of social identity. *Social Identity Theory* (Tajfel & Turner, 1979) argued that being a member of a social group is valuable and has emotional significance for people. Furthermore, being a member of a successful group enhances one’s self-esteem because it strengthens the validity of one’s cultural worldview, which in turn serves as a buffer against the anxiety resulting from fear of death. For example, sports fans reminded of their own death tend to shift their support from a losing college team to a winning team of the same college (Dechesne, Greenberg, Arndt, & Schimel, 2000).

In another study with Dutch participants, Dechesne, Janssen, and van Knippenberg (2000) found that within the MS condition, university students with high need for closure showed increased derogation to the author of an essay criticizing their group. Within the MS condition, participants with low need for closure distanced themselves from the group which had been criticized. Both experiments carried out by Dechesne and his colleagues indicate that university identity is an important social structure influenced by reminders of mortality.

The present studies (1a and 1b) used students from two types of universities as participants. Private and state universities in Turkey are different from each other where the former costs between \$5,000 and \$12,000 per year, while the latter is as low as \$200 to \$500. However, other things being equal, entrance examination scores required to register in state universities are generally higher than those of private universities. In other words, although private universities are more expensive, it is easier for a prospective student to attend such a university. Therefore, social identity and self-worth are linked to being a public or private university student.

According to TMT, viewing oneself as a valuable member in a meaningful culture is a means to achieve symbolic immortality. Therefore, in this study, we were concerned with (1) whether the predictions of the MS hypothesis are valid in a Muslim-majority country and (2) whether MS produces defense of identities other than nationalistic/religious ones. We conducted two experiments with similar procedures at a private university and state university. Based on the results of many previous studies of worldview defense, we expected that students in the MS condition would evaluate a hypothetical newspaper article more favorably if the article presented positive attitudes toward the university that they attended. On the other hand, if the article claimed that the other university was better, the evaluations of the article would be more negative.

Study 2 examined the effects of mortality salience on religious and/or nationalistic identities. In this study, only Muslim participants were used and they were asked to report which countries they wanted their home country (Turkey) to have stronger relationships with. Jonas and Greenberg (2004) found that after an MS manipulation, their German participants, who favored the reunification of Germany, showed positive attitudes toward an essay which supported the fall of the Berlin wall. We expected that our Turkish subjects would also show a similar pattern in that they would want the Turkish government to have stronger relationships with countries emphasizing nationality (being a “Turk”) and/or religion (i.e., being a “Muslim”), such as Turkmenistan, but not with rival countries, such as Greece, with which Turkey has a long (hi)story of conflict.

## Study 1a

According to TMT, when mortality is made salient, people respond more positively to those who bolster their own

cultural worldviews. In this study, we tested the MS hypothesis of TMT in a predominantly Muslim country. We hypothesized that private university students in the MS condition would respond more favorably toward individuals expressing views supportive of their worldview (defending private universities) and respond negatively toward individuals expressing views in conflict with their worldview (defending state universities) when compared to private university students in the control condition.

## Method

### Participants

Sixty undergraduate students (32 women and 28 men) at a private university participated in Study 1a. Students were from different departments of the Faculty of Economic and Administrative Sciences, and they participated during their regular scheduled class sessions for extra course credit. Participants ranged in age from 19 to 25 ( $M = 21.78$ ,  $SD = 1.33$ ). Students in our sample had been attending this private university for 2–7 years ( $M = 3.77$ ,  $SD = 0.99$ ). First-year students were not included to control for the possibility that freshmen had not yet identified with their university.

### Materials and Procedure

The materials used in this experiment were administered during the formal class sessions. In order to ensure privacy, students were asked to be seated separate from each other. Participants were told that the study was an investigation of different aspects of personality. They were also asked to fill out a seven-page booklet of materials in the presented order without going back to previous pages. The first two pages of the booklet contained a cover page and a small questionnaire about demographic variables. Next, participants filled out the Turkish form of the 10-item Self-Esteem Inventory (Çuhadaroğlu, 1986; Rosenberg, 1965). Then, the MS manipulation was presented. In the experimental condition, participants were asked to answer two open-ended questions in Turkish: (1) *Please briefly describe the emotions that the thought of your own death arouses in you* and (2) *Jot down, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead*. Participants in the control condition were asked to answer two parallel questions about taking an important exam.

The MS manipulation was followed by the Turkish form of Positive and Negative Affect Scale (PANAS-X; Dürü, 1998; Watson, Clark, & Tellegen, 1988), which was used to evaluate whether there were any different affective reactions to the manipulation.

Research has shown that the effects of MS manipulations are much stronger when the thought of one's death is accessible but not conscious. In other words, if there is a delay between MS manipulation and the responses to the dependent variable, the effect is stronger (Pyszczynski, Greenberg, &

Solomon, 1999). Therefore, after the MS manipulation, we asked our participants first to solve and then evaluate the level of difficulty of a small puzzle in which there were names of seven cities hidden in a  $10 \times 10$  letter matrix. This task took approximately 2–3 minutes.

Finally, the participants read a paragraph purportedly taken from a newspaper claiming either (a) private universities or (b) state universities were better:

...When I generally think about the universities in Turkey, my opinion is that attending private (state) universities is more beneficial in the long term. In comparison with state (private) universities, the students of private (state) universities are more beneficial than those of state (private) universities because of private (state) universities' meticulous and comprehensive studies. Therefore, as an education policy, private (state) universities should be invested in and their students should be given full support to take part in scientific activity. For the education of my child in the future, I would prefer a private (state) university to a state (private) university...

Both paragraphs were identical except for the type of universities that were favored. After reading one version of the paragraph, participants responded to five questions concerning the expertise of the author and the quality of the paragraph on a 9-point scale (Do you think that the author dominates his/her article? To what extent do you agree with the thoughts of the author? How objective do you think the author is? What is your opinion about the statements? What is your general opinion about the author? Do you agree with the main theme of the article?). After completing the questionnaire packet, participants were thanked for their collaboration and de-briefed. None of our participants reported any suspicion or awareness of the true purpose of the study.

The dependent variable was the participants' evaluation of the paragraph/author (1 = least favorable evaluation, 9 = most favorable evaluation). The independent variables were MS condition (death vs. exam) and the main message of the paragraph (defensive/favoring private universities vs. threatening/favoring state universities).

## Results and Discussion

Before testing the effects of the MS manipulation on the evaluation of the newspaper article, we tested whether positive and negative affect measured by the PANAS-X revealed any effects. Analysis revealed that the MS manipulation did not lead to any significant variations in mood ( $p > .05$ ). This result is consistent with previous studies (e.g., Goldenberg, Pyszczynski, McCoy, Greenberg, & Solomon, 1999) providing evidence that the effects of MS could not be explained by changes in the mood of our participants. It was also found that the dispositional level of self-esteem of our participants was not different between experimental

and control groups ( $p > .05$ ). Therefore, neither the PANAS-X nor self-esteem scores of the participants were used in further analyses. Additionally, the analysis regarding the sex of the participants did not reach any significant effects.

Participants' attitudes toward the paragraph and the author were evaluated by using 9-point Likert-type questionnaire consisting of five questions. An evaluation score for each participant was obtained by calculating the mean of responses given to these questions. A reliability analysis of responses to these five items indicated very high levels of internal consistency, with Cronbach's alpha of .94.

A 2 (MS condition: death vs. exam)  $\times$  2 (message: defense vs. threat) univariate analysis of variance (ANOVA) indicated that although there was not a main effect of MS ( $F < 1$ ), there was a significant main effect of message,  $F(1, 56) = 9.01$ ,  $p < .05$ ,  $\eta^2 = .14$ . As can be seen in Table 1, participants showed more favorable attitudes toward the paragraph arguing that private universities were better than state universities ( $M = 5.23$ ,  $SD = 1.68$  and  $M = 3.76$ ,  $SD = 2.14$ , respectively).

As expected, there was also a significant interaction of MS by message  $F(1, 56) = 4.61$ ,  $p < .05$ ,  $\eta^2 = .08$ . Pair-wise comparisons showed that although there was no difference between the evaluations of either paragraph in the control group (exam), participants in the experimental group (death) reported more positive attitudes toward the paragraph in which private universities were favored than toward the paragraph praising state universities,  $t(29) = 4.71$ ,  $p < .05$ ; mean values were 5.58 ( $SD = 1.58$ ) and 3.09 ( $SD = 1.37$ ) respectively. (See Figure 1 for the interaction effect.)

Post hoc analyses did not indicate any proof for ingroup favoritism because there is no difference between control and MS conditions for the evaluation scores of private universities, and the evaluations of the paragraph favoring private universities were higher in both MS and non-MS conditions. There is a partial support for outgroup derogation; that is, although there is no significant difference between control and MS conditions for evaluations of state universities, it was found that in MS condition proprivate universities essay was evaluated more positively than prostate universities' essay. Since participants in this study were undergraduate students in a private university, the former is quite understandable; that is, students did favor the paragraph which was favoring their universities. Of additional

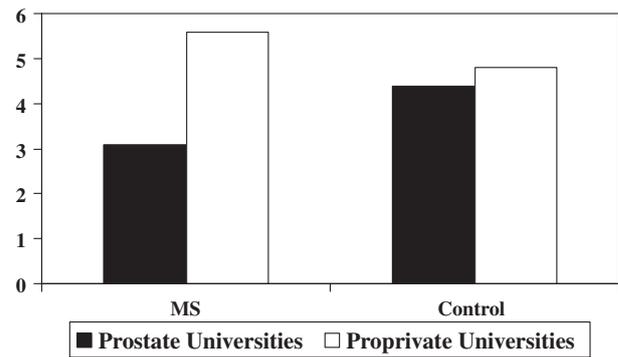


Figure 1. Private university students' evaluation scores of the paragraph as a function of MS and type of message.

note, participants who had been reminded of their own death showed a clear preference between the messages of the two paragraphs. Students in the MS (death) condition evaluated the paragraph and the author more positively if the paragraph suggested that private universities were superior to state universities. That is, they favored the argument supporting their cultural worldview and provided negative evaluations when the argument's claim countered their own. However, in the control condition (exam), evaluations of both paragraphs did not differ; participants reported similar attitudes.

Study 1a provided additional evidence for the MS hypothesis of TMT in that it is valid in a Muslim-majority country such as Turkey. Additionally, when people were asked to think of their own death, they tried to defend their cultural worldviews even if these views were far from nation and/or religion-related concepts. Using the very same concept (university identity) and similar procedures, we replicated Study 1a in a state university to ensure that our inferences were valid.

## Study 1b

Study 1b was an identical replication of Study 1a in that we applied the same procedures to undergraduate students enrolled at a state university. We hypothesized that

Table 1. Mean values and (standard deviations) of evaluation scores reported private university and state university students as a function of MS and paragraph type

		Favoring state universities	Favoring private universities	Total
Private university students (Study 1a)	MS	3.09 <sub>a</sub> (1.37) ( $n = 14$ )	5.58 <sub>b</sub> (1.54) ( $n = 17$ )	4.45 (1.91)
	Control	4.39 <sub>a,b</sub> (2.55) ( $n = 15$ )	4.80 <sub>a,b</sub> (1.80) ( $n = 14$ )	4.59 (2.19)
	Total	3.76 (2.14)	5.23 (1.68)	4.52 (2.03)
State university students (Study 1b)	MS	5.91 <sub>a</sub> (1.86) ( $n = 11$ )	2.92 <sub>b</sub> (1.21) ( $n = 12$ )	4.35 (2.16)
	Control	5.85 <sub>a</sub> (1.16) ( $n = 11$ )	4.96 <sub>a</sub> (1.70) ( $n = 9$ )	5.45 (1.46)
	Total	5.88 (1.51)	3.79 (1.74)	4.86 (1.93)

Note. Different subscripts point out significant differences among mean values ( $p < .05$ ) according to post hoc Turkey analyses.

compared to those in the control condition, undergraduates in the MS condition would evaluate an author and his or her article more favorably when the expressed views supported the participants' worldview (defending state universities). Conversely, participants in the MS condition were expected to respond more negatively than those in the control condition while evaluating the essay of an author expressing opinions in defiance of the participants' worldview (defending private universities). According to our tentative knowledge, students attending state universities believe that their previous success in university entrance examination, rather than finances, determined their school affiliation. Therefore, one could argue that because high levels of self-esteem reduce the effects of MS (Harmon-Jones, et al., 1997), students in state universities would not be affected by the MS manipulation. However, as Castano and his colleagues (2002) found, when individuals were asked to think of their own death, they displayed stronger ingroup identification and ingroup bias. It is interesting to note that there was no difference between MS and control groups in the evaluation of outgroup members. Study 1b was designed to test between these alternative hypotheses.

## Method

### Participants

Forty-three undergraduate students (32 women and 11 men) enrolled in the psychology department in a state university participated in Study 1b. They participated during scheduled class sessions voluntarily. Participants ranged in age from 19 to 27 ( $M = 21.71$ ,  $SD = 1.71$ ). Students in our sample had been attending this state university for 2–5 years ( $M = 2.70$ ,  $SD = 0.71$ ). As in the first study, our sample did not contain freshmen.

### Materials and Procedure

The materials used and procedures followed were identical to those in Study 1a. All materials were presented in Turkish. After finishing the study, participants were thanked for their collaboration and de-briefed. None of our participants reported any suspicion or awareness of the true purpose of the study.

The dependent variable was the participants' evaluation of the paragraph (1 = least favorable evaluation, 9 = most favorable evaluation). The independent variables were MS condition (death vs. exam) and the article's main message (defensive/favoring state universities vs. threatening/favoring private universities).

## Results

As in Study 1a, before testing the effects of the MS manipulation on the evaluation of the newspaper article, we tested whether positive and negative affect measured by PANAS-X

revealed any effect and whether participants' level of dispositional self-esteem was statistically different between experimental and control groups. Results indicated that neither PANAS-X nor self-esteem measure was different between groups. Therefore, we did not use them for further analyses. Additionally, analyses regarding the sex of the participant did not find any significant effects.

The reliability analysis of participants' evaluations of the paragraphs indicated very high levels of internal consistency, with Cronbach's alpha of .93.

A 2 (MS condition: death vs. exam)  $\times$  2 (message: defense vs. threat) univariate analysis of variance (ANOVA) showed, interestingly, that there was main effect of MS,  $F(1, 39) = 4.67$ ,  $p < .05$ ,  $\eta^2 = .11$ . This main effect indicated that participants in the exam condition provided more favorable evaluations than participants in the MS condition regardless of the type of the message (i.e., for both prostrate and proprivate school essays) they read ( $M = 5.45$ ,  $SD = 1.46$  and  $M = 4.35$ ,  $SD = 2.16$ , respectively). There was also a main effect of message,  $F(1, 39) = 17.94$ ,  $p < .05$ ,  $\eta^2 = .31$ . As can be seen in Table 1, participants showed more favorable attitudes toward the paragraph arguing that state universities were better than private universities ( $M = 5.88$ ,  $SD = 1.51$  and  $M = 3.79$ ,  $SD = 1.74$ , respectively).

As expected, there was also a significant interaction of MS by message  $F(1, 39) = 5.19$ ,  $p < .05$ ,  $\eta^2 = .12$ . Pairwise comparisons showed that although there was no difference between evaluations of both paragraphs in the control group (exam), participants in the experimental group (death) reported much more positive attitudes toward the paragraph in which state universities were favored than toward the paragraph praising private universities,  $t(21) = 4.61$ ,  $p < .05$  ( $M = 5.91$ ,  $SD = 1.86$  and  $M = 2.92$ ,  $SD = 1.21$ , respectively). Similar to Study 1a, we did not find any direct evidence for ingroup favoritism. The paragraph favoring state universities was evaluated more positively in both MS and non-MS conditions. In other words, students did favor the paragraph which was favoring their universities regardless of the group (experimental/control) to which they belonged. It was also found that participants reading the paragraph favoring private universities reported much more negative attitudes under MS condition compared to participants in the exam condition,  $t(19) = -3.21$ ,  $p < .05$  ( $M = 2.92$ ,  $SD = 1.21$  and  $M = 4.96$ ,  $SD = 1.70$ , respectively). (See Figure 2 for the interaction effects.)

Study 1b replicated the results of Study 1a in a different setting. MS increased preference for the proworldview over the antiworldview essay. It was also found that participants in the MS condition evaluated the paragraph praising private universities more negatively than those in exam condition. Both results strongly supported the MS hypothesis of TMT.

As in Study 1a, this study showed that when asked to think and write about their own death, state university students did not reward the agents who had similar cultural worldviews by giving more positive evaluations (ingroup favoritism) but punished those who threatened their worldview by reporting negative evaluations about them (outgroup derogation). Since state universities are less expensive than private universities and since the former is

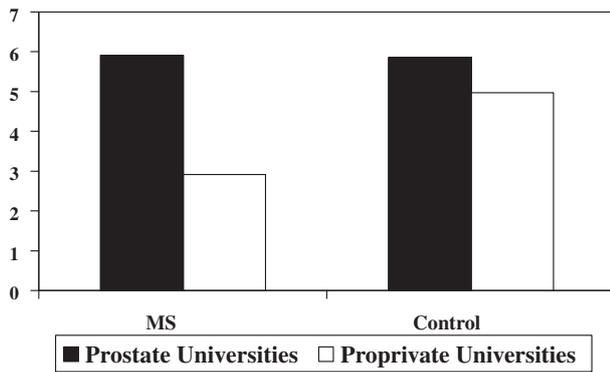


Figure 2. State university students' evaluation scores of the paragraph as a function of MS and type of message.

harder to be enrolled in, participants in Study 1b might think that the paragraph in which private universities were claimed to be superior was nonsense. Therefore their responses to the paragraph favoring private universities were very negative.

## Study 2

Studies 1a and 1b had indicated strong evidence that TMT was valid in a predominantly Muslim sample. University students defended their university identity in the MS condition much more strongly than those in the control condition. Study 2 was designed to extend TMT from university identity to religious and national identities in a similar sample. It was hypothesized that when individuals were asked to report their preference for enhancing international relations between their home country and others, those who were in MS condition would approve of so-called "allied" countries and disapprove of countries regarded as "rivals."

## Method

### Participants

Ninety undergraduate students (70 women and 20 men) from a private university located in Ankara participated in Study 2. Students, who had not participated in the previous two studies, were from different departments of the Faculty of Economic and Administrative Sciences and the Faculty of Health. They participated during their scheduled class sessions for extra credit. Participants ranged in age from 18 to 27 ( $M = 21.46$ ,  $SD = 1.70$ ). The majority of students reported their religious affiliation as Muslim (90.0%). Other categories included atheists (6.7%), Jews (1.1%), and others (2.2%). For the purpose of Study 2, we used only Muslim university students (63 women and 18 men) for further analyses. The mean age of the Muslim group was 21.46 with a standard deviation of 1.67.

## Materials and Procedure

Participants were asked to fill out a small questionnaire with a starting page asking for their demographic variables including their religious affiliation. The second page contained the Turkish form of 10-item Self-Esteem Inventory (Rosenberg, 1965; Çuhadaroğlu, 1986). Then, on the same page they were given a set of adjectives and nouns describing different characteristics of a person (e.g., creative, intelligent, lonely, hardworking, ...) and asked to check the words that they thought described themselves. Among these 32 words, two were important for Study 2: "Muslim" and "Turk." MS manipulation was presented next, identical to those in Study 1a. The MS manipulation was followed by the Turkish form of Positive and Negative Affect Scale (PANAS-X; Dürü, 1998; Watson et al., 1988), which was used to evaluate whether there are any different affective reactions to the manipulation. In order to ensure a delay between the MS manipulation and the responses to the dependent variable, a 10-item filler questionnaire about one's life habits (e.g., "How many hours a day do you spend watching TV?" and "How often do you go to the cinema per month?") was presented.

Finally, the participants read a paragraph about funding for strengthening international relations between The Republic of Turkey and 11 different countries. They were asked to decide about sharing the percentage of funding among these countries:

The Ministry of Foreign Affairs has funding to be used for strengthening international relations between our country and 11 countries written below. Please indicate the percentages of this funding which would be used for each country. If you think that no money should be used for a country then write '0%' and if you think all funding should be used only for one country write '100%'.

These countries were USA, China, Armenia, France, India, Iraq, England, Iran, Russia, Turkmenistan, and Greece in the presented order (alphabetically in Turkish). These countries were chosen because in the department of Political Science and International Relations, these countries are discussed in courses like *Comparative Politics* and *Foreign Policy Analysis*. For another selection criterion, countries such as USA, England, Iran, and Iraq were seen as agents of the conflicts in the Middle East and the latter two are also predominantly Muslim. Russia and China were chosen because laypeople and students in the political science department think that they are alternative countries to European Union (EU) countries (Kökdemir & Yeniçeri, 2005). There are some articles in Turkish newspapers about the conflicts between Turkey and other countries (e.g., France, Armenia, and Greece), mostly related to topics such as Cyprus, minorities, and EU. For example, one of the leading newspapers in Turkey, *Hürriyet*, claimed that France and Greece were expecting necessary steps from Turkish Government about Cyprus; otherwise it would be very hard for Turkey to join EU (Hürriyet, 2006). Turkmenistan was added not

because of the relationship between the Republic of Turkey and Turkmenistan but because both countries' names start with the word "Turk."

## Results and Discussion

As in Studies 1a and 1b, results indicated that neither the PANAS-X nor the self-esteem measure was different between groups. Therefore, we did not use them for further analysis and analyses were performed only for participants who reported their religious affiliation as Muslim. Additionally, analyses regarding the sex of the participant did not reach any significant effects.

Although they reported their religious affiliation as Muslim, 14 participants (17.3%) chose neither "Muslim" nor "Turk" as adjectives to describe themselves. Forty-nine participants (60.5%) identified themselves both as a "Muslim" and "Turk," 9 (11.1%) chose the word "Turk" only, and 9 (11.1%) did "Muslim" only.

Table 2 shows the mean percentages of funding score for each country. Since the total of proposed funding percentages exceeded 100% for some participants, total points were calculated by adding up the score of 11 countries. Then, we took a ratio for each country by dividing each of their funding percentages by this total score. Therefore, the possible maximum score was 1 (100%) and the possible minimum score was 0 (0%).

A multivariate analysis of variance (MANOVA) was performed on 11 funding scores. The independent variable was MS condition (death vs. exam). With the use of Wilks' criterion, MANOVA showed that the combined DVs (11 funding scores) were not affected significantly by MS condition,  $F(10, 64) = 1.24, p > .05$ . Although multivariate effects were not significant, it was found that there were significant univariate effects of MS condition on different funding scores. Obtaining nonsignificant multivariate but significant univariate tests is not uncommon. Tabachnick and Fidell (2001, p. 348) state that "... multivariate  $F$  is often not as powerful as univariate or stepdown  $F$  and significance can be lost..." Having too many scores as

DVs with relatively small degrees of freedom might cause multivariate tests to be not significant at .05 level. However, not the combined effects of DVs but the differences among countries were important for the purpose of Study 2, so univariate tests are worth considering.

It was found that among 11 countries there were significant differences between MS and control conditions for England, Greece, and Turkmenistan. Compared to the control group ( $M = 0.10, SD = 0.06$ ), participants in the MS condition ( $M = 0.06, SD = 0.08$ ) reported preferences for lower percentages of funding to be used for strengthening the relationship between Turkey and England,  $F(1, 73) = 4.31, p < .05, \eta^2 = .06$ . There was a similar main effect of MS for Greece;  $F(1, 73) = 4.40, p < .05, \eta^2 = .06$ . This main effect indicated that participants in the MS condition had less favorable preferences for enhancing the relationship between Turkey and Greece than participants in the control group ( $M = 0.05, SD = 0.06$  and  $M = 0.09, SD = 0.06$ , respectively). Although we did not specifically have any information as to whether our participants cared about this issue or not, it can be claimed that Turkey, Greece, and England have been the sides of an ongoing crisis related to the island of Cyprus, and that they had been known as the guarantor countries of Cyprus for about 40 years. Therefore, our Muslim participants might have perceived England and Greece as representatives of another cultural worldview threatening their own and therefore, in the MS condition they tried to punish these countries by setting them apart from their home country.

However, the main effect of MS on Turkmenistan was different. It was found that participants in the MS condition ( $M = 0.22, SD = 0.21$ ), compared to those in the control group ( $M = 0.11, SD = 0.08$ ), reported preference for higher funding scores for Turkmenistan,  $F(1, 73) = 8.60, p < .05, \eta^2 = .10$ . Apparently, under existential threat, participants defended or favored a country which was representative of their cultural worldview, namely "Turk." It is also worthwhile to point out here that Turkey was the first country to recognize Turkmenistan and open an embassy there. Besides, 21 January 2000 was announced as the Turkmen-Turkish Brotherhood Festival day by the President of Turkmenistan.

Table 2. Mean values and (standard deviations) of funding scores for each country as a function of MS and control conditions

	MS condition ( $n = 34$ )	Control condition ( $n = 41$ )	Total ( $n = 75$ )
USA	0.08 (0.15)	0.12 (0.12)	0.10 (0.14)
China	0.10 (0.13)	0.11 (0.10)	0.11 (0.11)
Armenia	0.03 (0.05)	0.05 (0.06)	0.04 (0.06)
France	0.08 (0.13)	0.09 (0.06)	0.08 (0.10)
India	0.11 (0.12)	0.08 (0.07)	0.09 (0.09)
England*	0.06 (0.08)	0.10 (0.06)	0.08 (0.07)
Iraq	0.13 (0.14)	0.10 (0.10)	0.11 (0.12)
Iran	0.08 (0.09)	0.07 (0.06)	0.08 (0.08)
Russia	0.07 (0.08)	0.08 (0.06)	0.07 (0.07)
Turkmenistan*	0.22 (0.21)	0.11 (0.08)	0.16 (0.16)
Greece*	0.05 (0.06)	0.09 (0.06)	0.07 (0.06)

\*  $p < .05$ .

A further analysis was done with funding percentages. Instead of comparing countries with each other, a principal component analysis (PCA) with varimax rotation was performed to determine whether the dependent measures cluster in some conceptually coherent fashion or not. The examination of the scree plot indicated that a three-component solution was suitable. Then, another PCA was run with varimax rotation forcing the number of components to three.

The first component included five countries which could be labeled as *Dominating Countries* (explained variance = 41.14%). This component contained England, China, USA, Russia, and France (loadings were .91, .90, .88, .87, and .82, respectively). The second component included four countries which are *Allies* (explained variance = 27.87%). This component contained Iraq, Iran, Turkmenistan, and India (loadings were .88, .87, .75, and .75, respectively). The third and the last component contained Greece and Armenia (loadings were .67 and .66, respectively) which could be labeled as *Rival Countries* (explained variance = 11.04%).

After the components were obtained from PCA, a 2 (MS condition: death vs. exam)  $\times$  3 (type of countries: dominating countries vs. allied countries vs. rival countries) mixed ANOVA with MS condition as between-group factor and type of countries as a within-group factor was conducted on funding scores Figure 3. Results showed that funding scores were significantly affected by both these components ( $F_{2,72} = 22.98, p < .05, \eta^2 = .39$ ) and the interaction of these components and mortality salience manipulation ( $F_{2,72} = 4.64, p < .05, \eta^2 = .11$ ). However, the main effect of mortality salience manipulation was not statistically significant.

Results of post hoc analyses indicated that funding scores of *rival countries* ( $M = 0.06$ ) significantly differed from both *allied countries* ( $M = 0.11$ ) and *dominating countries* ( $M = 0.09$ );  $t(83) = 4.59$  and  $t(83) = 4.14, p < .05$ , respectively. Results also showed that there was significant interaction between components of countries and mortality salience manipulation in the funding scores. Post hoc analyses revealed that allied countries' funding scores were increased in mortality salience condition ( $M = 0.13$ ) rather

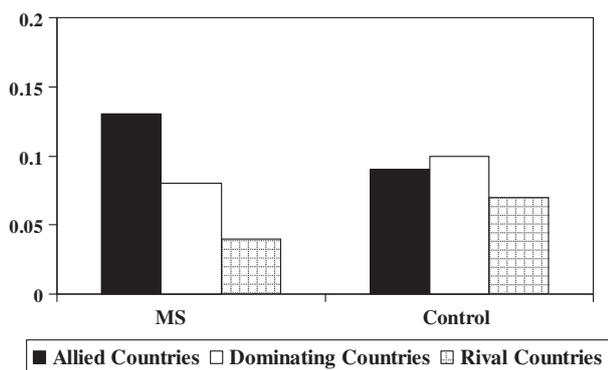


Figure 3. Mean values of funding scores as a function of MS and country type.

than in the control condition ( $M = 0.09$ );  $t(73) = 2.70, p < .05$ . On the other hand, the funding scores of both dominating countries and rival countries were lower in the MS condition (mean values were 0.08 and 0.04, respectively) rather than in the control condition (mean values were 0.10 and 0.07, respectively);  $t(73) = 2.07$  and  $t(74) = 2.47, p < .05$ , respectively.

## Conclusion

Previous research on TMT reveals that mortality salience leads to increased support and defense of ingroups and their norms (e.g., Castano et al., 2002; Fritzsche, Jonas, & Fankhänel, 2008; Harmon-Jones et al., 1996). In other words, research shows evidence of MS-induced effects for ingroup identification and ingroup bias. Studies 1a, 1b, and 2 showed that, similar to earlier studies in different cultures, Turkish participants tried to defend their cultural worldviews more when their own death was made salient. Results support the validity of the MS hypothesis of TMT in a predominantly Muslim country.

It is also important that we used university type as an identification source of cultural worldview, discovering that although it is not nationalistic and/or religious in nature, MS did influence students' identification with their university. The present studies, like Dechesne, Greenberg et al. (2000) and Dechesne, Janssen et al. (2000), show that ingroup identities such as being a university student are strong enough to help individuals in the quest for existential meaning in the world. However, it is still unclear whether being in a group by itself is a major way to achieve symbolic immortality or whether people choose it because they cannot achieve it individually. Whatever the reason, seeking immortality through group membership (whether university identity or nationality) is the first step of stereotypes, biases, and even hatred for "others." Study 1a is especially important in this sense because as far as we know from teaching experience in different types of universities in Turkey, one can easily say that being a student in a private university is a somewhat nonpreferred situation. However, students in Study 1a, when they were reminded of their death, tended to attach themselves to their ingroup; that is, their university by derogating the agent who favors a rival university.

Neither Study 1a nor Study 1b, on the other hand, showed any direct effect of MS on ingroup favoritism. Although not expected, this result was not surprising, since the university types can be considered as rivals when students read a paragraph favoring their university over the other one; they rated the author of this paragraph positively in both MS and non-MS groups. The basic effect was outgroup derogation, when they read the paragraph favoring the other university (rival), students' evaluation of the paragraph was very negative in MS condition compared to non-MS condition.

Study 2 indicates that one's identity regarding special issues such as nationality, religion, and/or political preferences may be significant in one's attitude toward "others."

More specifically subjects in the MS condition showed greater favor for Turkmenistan than for any other country because Turkmenistan is linked in name and political connections to their own country. This is a support for ingroup favoritism in which *ingroupness* is defined as not just cultural but also semantic similarity. In other words, when our subjects were reminded of their death, they managed this terror by connecting themselves to another group consisting of “Turks,” too. We cannot be sure whether such a semantic similarity is important for terror management. In order to generalize this claim, further experiments are needed to test semantic/cultural differentiation, if there is any.

In the second part of Study 2, we used groups of countries: *Dominating Countries*, *Allied Countries*, and *Rival Countries*. The results were clear that in MS condition, subjects both showed ingroup favoritism [favoring *allied countries* and outgroup derogation (derogating both *Dominating Countries* and *Rival Countries*)]. These results indicated that the salience of death alone is enough to exaggerate positive and negative attitudes toward other cultures. Although there are almost always negative attitudes toward rival countries, mortality salience intensified this negativity.

Future research should concentrate on individual differences such as the degree of religious affiliation, and national and political identification in determining ingroup favoritism and outgroup derogation. We should also concentrate on how (if possible) terror management can be used to *improve* attitudes among “historically rival” cultures.

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About the authors

Doğan Kökdemir is Associate Professor of Social Psychology at the Department of Psychology, Başkent University, Ankara, Turkey, and the Head of ELYADAL Research Laboratory. His research interests lie in critical thinking, decision making and death, terror of death, and heroism.

Zuhal Yeniçeri is a doctoral student at the Department of Psychology, Middle East Technical University, Ankara, Turkey, and a member of ELYADAL Research Laboratory. Her research interests are death, terror, terrorism, heroism, and self.

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Doğan Kökdemir

Department of Psychology  
 Baskent University  
 06810 Ankara  
 Turkey  
 E-mail dogan@kokdemir.info