

Self-Regulation after Mortality Salience

National Pride Feelings of Action-Oriented German Participants

Miguel Kazén, Nicola Baumann, and Julius Kuhl

Faculty of Human Sciences, University of Osnabrück, Germany

Abstract. This research investigates mortality salience (MS) and national pride in Germany, a country in which, for historical reasons, attitudes toward the nation are negatively valued. Within this cultural context, utilizing national pride as a coping strategy for dealing with MS may require well-developed self-regulatory abilities: It was hypothesized that the typical increment in national pride after induced MS would be confined to action-oriented individuals, who are able to self-regulate after exposure to threatening information. Two studies with German participants showed that they negatively evaluated national pride. Consistent with expectations, action-oriented participants in the MS condition revalued this symbol and also gave higher attractiveness ratings to attributes related to their own culture. Results remained unchanged after controlling for participants' self-esteem. The combined role of self-regulation and culture in terror management is discussed.

Keywords: terror management theory, action orientation, PSI theory, self-esteem

Research on terror management theory (TMT) has demonstrated that concerns about one's own mortality elicit a broad range of behaviors oriented toward the pursuit of positive self-images and faith in one's cultural worldview (Pyszczynski, Greenberg, & Solomon, 1999; for a recent review of research on TMT see Solomon, Greenberg, & Pyszczynski, 2004). Cultural worldviews are psychological structures thought to provide protection against the anxiety associated with awareness of the inevitability of death and offer ways to achieve "symbolic immortality." Consistent with this assumption, induction of mortality salience (MS) has been found to elicit self-serving attributions (Mikulincer & Florian, 2002), ingroup biases (Castano, Yzerbyt, Paladino, & Sacchi, 2002), nationalistic biases (Nelson, Moore, Olivetti, & Scott, 1997), and negative reactions to those who violate cultural values (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989).

In the present studies we investigate MS effects in the realm of national identification and own-culture preferences. Mortality salience is expected to increase expressions of nationalism in countries where national pride is positively valued like the USA (e.g., Nelson et al., 1997), Italy, or Scotland (see Castano, Yzerbyt, & Paladino, 2004). Here, we investigate how coping with the inevi-

tability of death works when national identification as a terror management strategy is difficult because being proud of one's own country is a value that elicits negative associations. In Germany, many people evaluate "national pride" negatively because it elicits association with the Nazi era, which is presumably related to group-based feelings of guilt (cf. Doosje, Branscombe, Spears, & Manstead, 1998). Does national identification nevertheless occur as a means to restore positive self-images? We propose that it takes well-developed self-regulatory abilities to be proud of aspects of German culture despite the negative connotations of nationalism. Consequently, members of the German culture are expected to revalue national pride and attributes of their own culture as a terror management strategy only to the extent that they have well-developed self-regulation skills.

From a broader perspective, this research examines the role of self-regulatory abilities in dealing with the anxiety associated with one's own mortality. In studying values that are not unambiguously positive, differences in the ability to self-regulate negative affect are expected to be especially influential. Self-regulation can be conceptualized as a set of executive functions required to override automatic behavioral tendencies (cf. Kuhl & Fuhrmann, 1998). Although self-regulation could be a plausible mech-

anism to moderate MS effects, it is explicit self-esteem that has received the most attention: High self-esteem has been found to buffer the anxiety associated with mortality and to reduce the need to defend one's own worldview against threat (Greenberg, Solomon, & Pyszczynski, 1997; Harmon-Jones et al., 1997; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). Other moderators of MS on worldview defense relate to personality traits. Those that have been investigated are authoritarianism (Greenberg et al., 1990, Study 2), need for closure (Dechesne, Janssen, & van Knippenberg, 2000), and attachment style (Mikulincer & Florian, 2000).

The personality disposition of action vs. state orientation captures individual differences in the ability to self-regulate affect *intuitively* (i.e., in a flexible, efficient, and nonrepressive manner; see Koole & Jostmann, 2004) and autonomously (e.g., being able to stop ruminations by oneself, without external help; cf. Kuhl & Beckmann, 1994). For example, action-oriented individuals (in the threat or failure-related subscale) are able to reduce negative affect in response to negative life events (Rholes, Michas, & Shroff, 1989), repeated failure inductions (Kuhl, 1981), and problems associated with life transition when entering college (Jaramillo & Spector, 2004). Action vs. state orientation is, therefore, expected to be an important moderator in dealing with thoughts and feelings elicited by reminders of one's own mortality. Moreover, the effects of action orientation on worldview defense (i.e., national pride) are proposed to occur over and above the effects of self-esteem. The reason is that the functions of action-oriented affect regulation and self-esteem in dealing with terror management are different. A boost to self-esteem serves to buffer (and often prevent) the anxiety produced by exposure to one's mortality (Greenberg et al., 1997; Solomon et al., 2004). In contrast, intuitive affect regulation through action orientation serves to promote efficient enactment of intentions *after* negative affect (which does not have to be consciously experienced) has been aroused (instead of preserving the current state and preventing their enactment; cf. Kuhl & Koole, 2004). Notice that self-esteem effects after MS are expected for persons with low self-esteem, whereas this latter type of affect regulation is presumably associated with a construct (i.e., action orientation) that is more akin to *high* rather than low self-esteem.

A Functional Explanation of Self-Regulation after MS

The moderating role of action orientation in terror management can be elaborated within the integrative framework of Personality Systems Interaction (PSI) theory

(Kuhl, 2000; Kuhl & Koole, 2004), which tries to explain human personality functioning in terms of its underlying mechanisms. Dealing with the anxiety that can develop in response to reminders of one's own mortality presumably requires access to an extended semantic network system (i.e., *extension memory*) in order to find ways to cope with this experience (for a similar proposal relating MS to increased accessibility of constructs central to one's worldview see Arndt, Greenberg, & Cook, 2002). According to PSI theory, extension memory is capable of integrating vast amounts of information from cognitive and affective subsystems through parallel-processing mechanisms (Rumelhart & McClelland, 1986) and forms the basis for integrated representations of internal states such as needs, motives, emotions, values, and autobiographical experiences that involve the self. One important part of extension memory forms the "implicit self," which does not have to be consciously experienced (Kuhl, 2000; Kuhl & Koole, 2004). Activation of extension memory (and the self) has been associated with right-hemispheric (prefrontal) processing (Baumann, Kuhl, & Kazén, 2003; Craik et al., 1999), which is ideally suited for integrative information processing (Beeman et al., 1994) and closely connected with affective systems. These processing characteristics make extension memory especially suited for affect regulation and integration of conflicting information. Action-oriented individuals are presumed to be highly skilled at coping with or preventing negative affect and in generating positive affect through activation of self-relevant information in extension memory (see Kuhl, 2000).

In the present studies, the focus is on the threat or failure-related dimension of action orientation (AOF). This type of action orientation relates to the volitional control of perseverating negative affect after experiencing failure or other types of negative experience (Kazén, Baumann, & Kuhl, 2003; Kuhl, 1994, 2000). The perseverating negative state (which is typical of state-oriented individuals in the *failure* subscale but not of state-oriented individuals in the *decision* subscale, who hesitate at low levels of positive affect once aroused) may be expected to be *implicitly* elicited or at least expected after MS induction. Explicit elicitations of negative affect do not usually occur after MS inductions (cf. Arndt, Allen, & Greenberg, 2001). This does not imply that action-oriented participants are immune to MS effects (cf. Koole & Van den Berg, 2004). In an event-related EEG study, they were found to be even more sensitive to negative affect than state-oriented participants at an early (implicit) processing stage (Rosahl, Tennigkeit, Kuhl, & Haschke, 1993) and to self-regulate negative affect only when it was in conflict with their current interests or threatening to their self-worth. In contrast, failure-related state orientation (SOF) is defined as preoccupation

Table 1. Mean evaluation ratings (*SD*) of aspirations or values for the Control (cinema) and MS Conditions in Studies 1 and 2.

	Study 1		Study 2	
	Control (cinema)	Mortality Salience	Control (cinema)	Mortality Salience
Wealth (Reichtum)	0.56 (1.10)	0.39 (1.24)	-0.06 (1.73)	0.00 (1.87)
Intelligence (Klugheit)	2.65 _a (0.49)	1.94 _a (1.06)	2.35 (0.61)	2.09 (1.45)
Social Recognition (Gesellschaftliches Ansehen)	0.94 (1.73)	1.00 (1.19)	0.74 (1.41)	0.19 (2.04)
Professional Efficiency (Berufliche Tüchtigkeit)	2.06 (0.80)	2.06 (1.00)	1.68 _a (0.75)	0.81 _a (1.84)
Self-Actualization through Consumption (Verwirklichung im Konsumverhalten)	-0.61 (1.85)	0.06 (1.66)	-0.84 (1.64)	-1.19 (0.30)
National Pride (Nationalstolz)	-1.17 (1.76)	-0.89 (1.94)	-1.27 (1.76)	-0.88 (1.60)
Family Orientation (Familienorientierung)	1.61 (1.24)	2.22 (0.94)	1.10 (1.60)	1.25 (1.83)

Note: Scales ranged from -3 (very negative) to +3 (very positive). Means with the same subscript differed significantly from each other ($p < .025$).

with negative thoughts and feelings because of an inability to volitionally control the perseverance of negative affect (Kuhl, 1994, 2000).

The prediction is, therefore, that action- and not state-oriented participants will show the worldview defense pattern of increase in national pride (from an initially negative level) after MS but not in a control condition. That is, we do not expect a main effect of MS on national pride but we predict an interaction between MS induction and personality. Note that our hypothesis does not make additional assumptions about responses of state-oriented participants to MS: They could either show no differences compared to the control condition or further devalue national pride. In other words, we do not expect a cross-over interaction, in which state-oriented participants devalue nationalism after MS.

The coping expected in action-oriented participants after induction of MS does not need to be mediated by negative affect (although explicit ratings of negative affect could presumably be phenomenological correlates of it): Action-oriented individuals may engage in anticipatory coping, that is in accessing their implicit self-system to *prevent* negative affect that would otherwise arise in response to MS. The functional characteristics of activation of the implicit self and extension memory, such as access to a broader network of meanings, suffice to predict their efficient coping after exposure to MS (Kuhl, 2000). Actually, a large number of studies show that the typical worldview-defense effects that follow exposure to MS do not depend on reporting negative affect (for a review see Greenberg et al., 1997). A view compatible with our theorizing is the idea that worldview defenses are engaged after MS for regulating the *potential* for negative affect (cf. Greenberg et al., 2003). This regulation potential could even be carried out through pro-social behavior, like altruism (see Jonas, Schimel, Greenberg, & Pyszczynski, 2002, for a study carried out in Germany). Anticipatory regulation of the potential for negative affect after MS may involve activation of *extension memory* by action- but not by state-oriented participants,

especially if this regulatory activity occurs at an implicit level.

Hypotheses

Because of historical reasons, we expected that national pride would be negatively evaluated by all our German participants under control and MS conditions. However, according to our main hypothesis of an interaction between personality and MS induction, action-oriented participants, compared to state-oriented, would evaluate national pride less negatively after induction of MS because of their greater capacity for self-regulation (Studies 1 and 2). Moreover, this self-regulation effect was predicted to occur independently of participants' level of self-esteem (Study 2).

Study 1

National pride is the main dependent variable. Considering that national pride is a sensitive issue in Germany, we chose not to measure it with a direct question (e.g., "How proud are you to be German"), because of the potential of eliciting a reaction such as associations with right-wing extremists. To avoid this problem, we measured it instead by asking participants to evaluate the negativity or positivity of a series of even values or aspirations, ranging from *intelligence* to *family orientation* (see Table 1). These additional values were included as fillers and will be analyzed on an explorative basis, although they did not represent our main focus of interest, which was to investigate worldview defense through national pride as a function of MS and personality. Within this list of values national pride always occupied the sixth place (see Table 1).

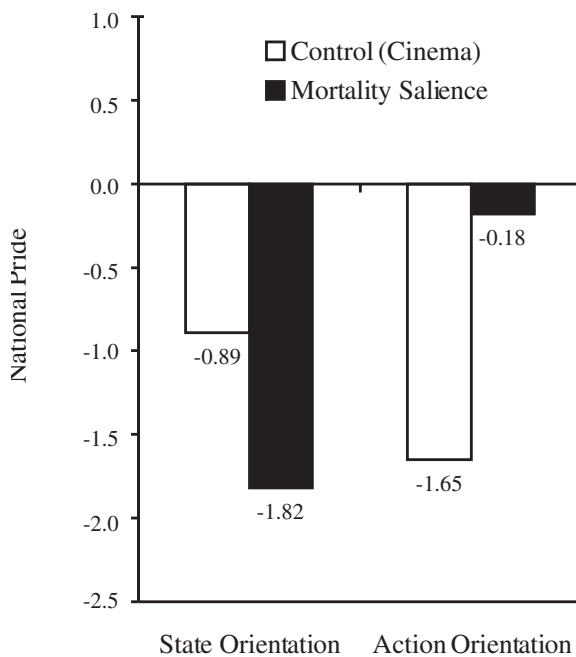


Figure 1. Ratings of national pride (range: from -3, very negative, to +3 very positive) as a function of experimental condition and personality in Study 1.

Method

Participants

Thirty-six volunteers (20 women and 16 men) participated in the study. There were both psychology (18) and nonpsychology students (18). The psychology students received course credit. Mean age of participants was 30.6 years (range 17 to 61). All of them were German.

Materials

A 21-item self-report inventory was administered to check participants' moods ("Right now, I feel . . .") on a four-point rating scale from 0 (*not at all*) to 3 (*very strongly*). From this inventory, the scale *Helplessness* was especially relevant to our study, including the items "helpless," "hopeless," and "gloomy." Cronbach's α of this three-item scale was $= .71$.

The Action Control Scale (ACS-90; Kuhl, 1994; for the English version see also Dieffendorf, Hall, Lord, & Streat, 2000) measuring state vs. action orientation was administered. For our research purposes the *threat-* or *failure-related* subscale (AOF) is the most relevant be-

cause it measures efficient affect regulation and action capability after exposure to negative events. The state-oriented pole of this dimension is functionally associated with uncontrollable perseverance of negative affect (e.g., distress). One example item is: "When I have to put all my effort into doing a really good job on something and the whole thing doesn't work out: (a) I don't have too much difficulty starting something else, or (b) I have trouble doing anything else at all." Here, Option (a) reflects the action- and Option (b) the state-oriented alternative (all 12 items are listed in Kuhl, 1994, pp. 57–59). The scale ranges from 0–12 with high scores indicating action orientation and low scores indicating state orientation. In this sample the AOF subscale had a Cronbach's $\alpha = .74$.

In addition, participants rated the seven values listed in Table 1 on a seven-point rating scale, ranging from -3 (*very negative*) to +3 (*very positive*).

Procedure

Participants were tested individually. They were told that the investigation dealt with person perception and self-perception. They first rated their momentary mood (Time 1 or T1) and proceeded with the action control scale. Participants were then randomly assigned to one of the experimental conditions. Participants in the MS Condition were asked to imagine what happens to their body when they die and to describe in as much detail as possible the feelings and thoughts that arose when imagining their own death. Participants in the Control Condition were asked to imagine what goes on in their body when they watch a movie at the cinema and to describe in as much detail as possible the feelings and thoughts that arise when imagining their visit to the movies. A sheet of paper was provided with instructions at the top and 22 empty lines for their descriptions.¹ Subsequently, participants rated their momentary mood (T2). Finally, participants rated their attitude toward various values. They were then debriefed and dismissed. The session lasted about 45 minutes.

Results

Descriptives²

AOF scores ranged from 0 to 12. Applying the norms (Kuhl, 1994), 20 participants were classified as state ori-

1 An inspection of the answers given to the open-ended questions in each experimental condition in both this and the second study revealed no meaningful differences between action- and state-oriented persons.

2 For the analyses of data using ANOVA we classified participants into two groups, state vs. action oriented, and did not use raw action orientation scores as a continuous independent variable in regression analyses. The main reasons are: (1) The action control scales are not assumed to measure a continuous dimension from state to action orientation but it is proposed that one of two qualitatively different processing modes is associated with each pole of the continuum (self-control for state-oriented and self-regulation for action-oriented

ented because their score was below the median of the normative sample (i.e., lower than 5, indicating a stronger disposition to preoccupy, $M = 2.7$, $SD = 1.78$) and 16 as action-oriented because their score was above the median of the normative sample (i.e., a score of 5 or higher; $M = 8.44$, $SD = 2.16$). In the MS Condition, 8 participants were state oriented and 10 participants were action oriented. In the Control Condition, 12 participants were state oriented and 6 participants were action oriented. The assignment of participants to the four groups formed by crossing the variables of personality and MS induction showed no systematic bias: $\chi^2(1, N = 36) = 1.8$, $p > .15$, $\Phi = .22$.

MS Effects on Mood

Proximate Effects

Helplessness ratings³ immediately after MS (T2) were analyzed using a 2×2 (AOF \times MS) analysis of covariance (ANCOVA), with baseline helplessness ratings (T1) at the beginning of the experiment serving as a covariate. On a descriptive level, participants in the MS Condition ($M = 1.16$) felt more helpless than participants in the control condition ($M = .80$), controlling for baseline ratings of helplessness. The main effect of mortality salience, however, was not significant, $F(1, 29) = 1.58$, $p > .20$, $\eta^2 = .01$. The main effect of AOF and the two-way interaction were not significant either.

MS Effects on National Pride

Descriptive statistics of ratings of culture-specific values are listed in Columns 2 and 3 of Table 1. There were no differences between the MS and control conditions with the exception of the value of intelligence: Participants under MS rated intelligence less positively than those in the Control Condition, $t(33) = 2.50$, $p < .025$, $d = 0.83$.

Evaluations of national pride were analyzed using a 2×2 (AOF \times MS) analysis of variance (ANOVA). Results yielded no main effects but the predicted AOF \times MS interaction, $F(1, 32) = 4.29$, $p < .05$, $\eta^2 = .11$. The mean evaluation of national pride for participants of both groups was in the negative range (see Table 1 and Figure 1). As shown in Figure 1, state-oriented individuals evaluated national pride negatively irrespective of experimental condition. On a descriptive level, they

even further devalued national pride after having been reminded of their own mortality, compared to the control group, $t(18) = 1.17$, $p > .24$, $d = 0.53$. In contrast, action-oriented individuals shared the negative evaluation of national pride in the Control Condition, but they revalued national pride after having been reminded of their own mortality, $t(14) = -1.75$, $p < .05$, (one-tailed), $d = -0.90$. Replacing AOF with gender in the analysis yielded no significant main effects or interactions.

Discussion

Results show that individual differences in self-regulation of affect (action vs. state orientation) moderate the effects of MS on national pride. The expectation was confirmed that all of our German participants would have average ratings toward the negative side of the national pride continuum. After induction of MS, however, action-oriented participants gave more neutral scores to this dimension, as compared to state-oriented participants receiving the same induction, or to participants in the control group (see Figure 1).

Speculating about the additional explorative results, the significantly reduced evaluations of intelligence obtained after induction of MS (see Table 1) seems to run against what one would expect from other MS studies, because if at all, it should be consistent with participant's worldview to value the trait of intelligence. It may be that "Klugheit" not only has positive connotations (intelligence) but it could also have negative connotations. Other acceptable translations in English are "cleverness" or "astuteness." This finding could alternatively reflect something typical of the worldview of our German participants and it will be discussed together with those of the next study in the General Discussion.

In Study 1 there were no significant increases in self-reported helplessness as a function of MS (only a trend). The absence of significant changes on reported affect as a result of MS replicates previous findings reported in the literature (see Greenberg et al., 1997). As discussed in the introduction, we believe that the self-regulatory coping of action-oriented persons after MS occurs at an implicit level by activation of extension memory, without requiring a conscious representation of negative affect (e.g., helplessness).

individuals). (2) The original norm data ($N = 877$) of ACS show significant deviations from a normal distribution (the ratio of the skewness of the distribution to the standard error of skewness exceeded 2.0). The form of the distribution approaches a bimodal shape, with one mode below the median and the other above it.

3 We also checked out the effect of experimental induction (MS vs. control) on the three other negative mood states assessed at T2 (*excitation*, *listlessness*, and *anger*) and found no significant differences between the groups on either study.

Study 2

One variable postulated to moderate the effects of MS is self-esteem. Because of its anxiety-buffering effect, individuals with *low* self-esteem show a higher tendency to defend their worldview compared to those with high self-esteem (see Greenberg et al., 1997; Harmon-Jones et al., 1997; Pyszczynski et al., 2004). One alternative interpretation of the previous national pride findings is that they are due to lower self-esteem as a variable that might be related to action orientation. This alternative interpretation seems implausible to us, because action orientation usually correlates moderately and positively with self-esteem, which would lead to the expectation that state- rather than action-oriented participants should show the effect (recall that *low* self-esteem was associated with MS effects). Moreover, effects of action orientation on affect regulation have been found to be stable even after statistically controlling for self-esteem (Koole & Jostmann, 2004).

To investigate this issue we carried out a second study to compare the role of self-esteem and action orientation in moderating MS effects. In addition, we included a further dependent variable related to the attractiveness of attributes associated with participants' own culture: Instead of assessing feelings toward Germany as a nation, cultural identification with Central Europe was assessed. This new measure was chosen to avoid the potential reaction of participants had we asked directly about how proud they were to be Germans. Notice that this is a more subtle and indirect measure of cultural identification and because of that probably a more valid way of assessing the attitudes of participants.

Study 2 was intended to (a) replicate the findings of Study 1 concerning effects of MS and action orientation on national pride, (b) extend these findings with an additional measure of worldview defense, and (c) explore the role of self-esteem.

Method

Participants

Sixty-two undergraduate psychology students (49 women and 13 men) participated voluntarily and received course credit in return for their participation. Their mean age was 24.1 years (range 18 to 47). All participants were German.

4 Because Germany lies in Central Europe, it was obvious to all participants that they belonged to that cultural group (compared to the other three cultural-geographical regions presented). Results of a pilot study confirmed this assumption. Moreover, on a postexperimental questionnaire all participants of this study agreed that as Germans they belonged to the Central-European cultural group and not to any of the other groups listed. We used this procedure to reduce the tendency to stereotype traits associated with particular nationalities (e.g., German-industrious or German-rigid), which may have biased subsequent ratings of trait attractiveness.

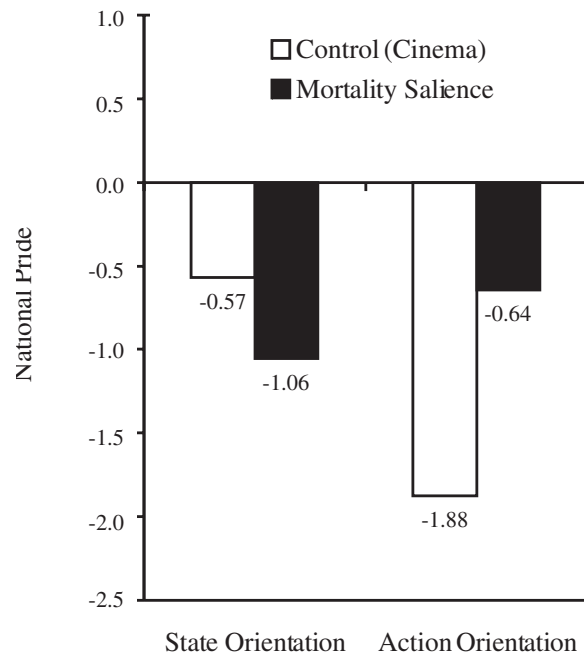


Figure 2. Ratings of national pride (range: from -3, very negative, to +3 very positive) as a function of experimental condition and personality in Study 2.

Materials

The same questionnaires and scales were administered as in Study 1. Mood was assessed not only at the beginning (T1) and immediately after the experimental induction (T2), as in the previous study, but also at the end of the experiment (T3). The German translation of Rosenberg's Self-Esteem Scale (Ferrig & Filipp, 1996), including 10 items (Cronbach's $\alpha = .84$), was also applied. In the present study, Cronbach's α for helplessness was .72 and for AOF .80.

In addition to national pride, *cultural preferences* were assessed. Participants were asked to classify 60 positive and negative adjectives (e.g., *orderly*, *superficial*, *optimistic*, *wasteful*) as being more characteristic of people from North America, Central Europe,⁴ Southern Europe, or the Far East. Participants were not allowed to select more than one region per attribute. On a new sheet of paper containing the 60 attributes in a different random order, participants were asked to rate the attractiveness of each attribute on a nine-point scale ranging from -4 (*very unattractive*) to +4 (*very attractive*). Mean attractiveness scores were calculated for adjectives classified as being more characteristic of (a) participants' own Cen-

tral European culture and (b) a foreign culture (i.e., a single score was calculated by averaging ratings given to the three remaining regions; North America, Southern Europe, and the Far East).

Procedure

Participants were tested in groups of 10–15 participants. They were told that the experiment dealt with person perception and self-perception. They first rated their momentary mood (T1) and proceeded to fill out the self-esteem and action-control scales, in that order. Next, participants were randomly assigned to the MS or to the cinema control condition. The two conditions were manipulated in the same way as in Study 1. Subsequently, participants rated their momentary mood (T2). Then, participants' attitude toward the seven values used in the previous Study (cf. Table 1) and the new measure of cultural preferences were assessed. Finally, participants rated their momentary mood (T3). They were then debriefed and dismissed. The session lasted about 60 minutes.

Results

Descriptives

AOF scores ranged from 0 to 11. Applying the norms (see Kuhl, 1994), 32 participants were classified as state oriented ($M = 2.16$) and 30 as action oriented ($M = 7.47$). They were about equally represented in the two induction conditions: In the MS Condition, 18 participants were state oriented and 14 participants were action oriented. In the Control Condition, 14 participants were state oriented and 16 participants were action oriented. The assignment of participants to the four groups formed by crossing the variables of personality and MS induction showed no systematic bias: $\chi^2(1, N = 62) = 0.59, p > .40, \Phi = .10$.

MS Effects on Mood

Proximal Effects

Helplessness ratings (T2) immediately after the MS induction were analyzed with a 2×2 (AOF \times MS) ANCOVA, with baseline helplessness ratings (T1) at the beginning of the experiment serving as a covariate. The only significant result was the main effect of MS, $F(1, 56) = 4.83, p < .05, \eta^2 = .05$. Participants under MS ($M = .53$) were more helpless than those in the Control Condition ($M = .31$). Means are controlled for baseline ratings of helplessness.

Table 2. Mean attractiveness of culture-specific attributes as a function of experimental condition and state-orientation failure (SOF) vs. action-orientation failure (AOF) in Study 2.

	Control (cinema)		Mortality Salience	
	SOF	AOF	SOF	AOF
Own culture (Central Europe)	.50	.48	-.07	.93
Foreign cultures (North America, Southern Europe & Far East)	.78	.99	.83	.57

Note: Scale ranged from -4 (very unattractive) to $+4$ (very attractive).

Distal Effects

Helplessness ratings at the end of the experiment (T3) were analyzed with a 2×2 (AOF \times MS) ANCOVA, with baseline helplessness ratings (T1) serving as a covariate. There were no significant effects. Feelings of helplessness were not significantly different between induction conditions at the end of the experiment.

MS Effects on National Pride

As in the first study, national pride received average negative scores in both experimental conditions (see Table 1). A 2×2 (AOF \times MS) ANOVA was conducted on national pride ratings. Results yielded no main effects but a significant AOF \times MS interaction, $F(1, 58) = 4.22, p < .05, \eta^2 = .07$. As depicted in Figure 2, state-oriented participants evaluated national pride equally negatively in the Control and MS Conditions, $t(30) = -0.79, p > .40, d = -0.28$. In contrast, action-oriented participants evaluated national pride highly negatively in the control condition, whereas they gave less negative ratings to national pride after having been reminded of their own mortality, $t(28) = 2.18, p < .025$, (one-tailed), $d = 0.83$. Results are consistent with expectations and replicate findings of Study 1. Replacing AOF for Gender in the analysis produced no significant results.

To examine the role of self-esteem on national pride we carried out a median split on scores of this variable in each experimental condition (in the MS Condition, 18 participants were classified low and 14 high in self-esteem; in the Control Condition, 15 participants were classified low and 15 high in self-esteem). The assignment of participants to the four groups formed by crossing the variables of self-esteem and MS induction showed no systematic bias: $\chi^2(1, N = 62) = 0.24, p > .50, \Phi = .06$. A 2×2 (Self-esteem \times MS) ANOVA was conducted on national pride ratings with no significant results.

Moreover, we repeated the AOF \times MS ANOVA on national pride ratings, including self-esteem as a covariate in the analysis. Results were practically identical as

before. There were no significant main effects of self-esteem, AOF, or MS but the AOF \times MS interaction remained significant, $F(1, 57) = 4.13, p < .05, \eta^2 = .07$, which indicates that action-orientation effects on MS and worldview defense were independent from self-esteem.

MS Effects on Intelligence and Professional Efficiency

Effects of MS on the additional values were investigated exploratively. Descriptive statistics are listed in Columns 4 and 5 of Table 1. The only significant difference found in this study was for *professional efficiency*: Participants in the MS group rated this value as less attractive than in the control group, $t(60) = -2.46, p < .025, d = -0.63$. To examine whether these differences are reliable after increasing power, we pooled data from Studies 1 and 2 ($N = 98$) and compared both experimental conditions on all seven values listed in Table 1. A MANOVA was carried out including all seven values simultaneously as dependent variables and experimental condition (MS or Control) as the independent variable. The multivariate test did not reach significance: $F(7, 90) = 1.84, p < .09, \eta^2 = .13$. The univariate tests showed a significant difference for intelligence, $F(95) = 4.24, p < .05, \eta^2 = .04$, between the Control, $M = 2.47, SD = 0.58$, and MS groups, $M = 2.04, SD = 1.31$ confirming the results of Study 1. The only other value with a significant difference between the Control, $M = 1.83, SD = 0.78$, and MS groups, $M = 1.26, SD = 1.69$, was professional efficiency, $F(95) = 4.44, p < .05, \eta^2 = .05$, confirming the results of Study 1. That is, after MS, participants of both studies gave significantly *low* positive evaluations to intelligence and professional efficiency.

MS Effects on Cultural Preferences

Attractiveness of culture-specific attributes were analyzed with a $2 \times 2 \times 2$ (AOF \times MS \times Source of Attributes) mixed ANOVA. Results yielded a significant main effect of source of attributes, $F(1, 58) = 5.05, p < .03, \eta^2 = .09$. Attributes associated with participants' own (i.e., Central European) culture were rated to be less attractive than the mean ratings given to attributes associated with a foreign (i.e., Southern European, North American, and Far East) culture, $M = .43$ vs. $M = .79$, respectively. In addition, there was a significant main effect of AOF, $F(1, 58) = 4.37, p < .05, \eta^2 = .05$. Action-oriented participants evaluated all attributes more positively than state-oriented participants did, M

$= .74$ vs. $M = .49$, respectively. More importantly, the three-way interaction was significant, $F(1, 58) = 6.51, p < .02, \eta^2 = .11$. As listed in Table 2, participants in the control condition did not differ in their evaluation of own-culture attributes, irrespective of their action control disposition. In the MS Condition, in contrast, state- (−.07) and action-oriented (.93) participants in the MS Condition evaluated own-culture attributes significantly different from each other, $t(31) = -3.23, p < .005, d = -1.16$. State- and action-oriented participants in the MS Condition did not differ in their evaluation of foreign cultural attributes. Including Gender as an additional factor did not yield any significant effects.

To explore the role of self-esteem on cultural preferences, a $2 \times 2 \times 2$ (Self-esteem \times MS \times Source of Attributes) mixed ANOVA was calculated. There were no significant main effects or interaction with self-esteem. Moreover, we repeated the AOF \times MS \times Source of Attributes ANOVA on attractiveness of culture-specific attributes, including self-esteem scores as a covariate in the analysis. Results were practically identical as before. The only significant effect was the AOF \times MS \times Source of Attributes interaction, $F(1, 56) = 6.00, p < .02, \eta^2 = .11$, which indicates that AOF effects on worldview defense were independent from self-esteem. This independence of effects of MS occurred even though the expected correlation between AOF and self-esteem was positive and moderately strong, $r(60) = .41, p < .001$.

Action Orientation and Mood Repair

To test whether cultural preferences were related to mood, correlations were calculated between helplessness (T2) and attractiveness of own-culture attributes (see Table 3). In the Control Condition, helplessness ratings did not correlate with own-culture preferences, for state- or action-oriented participants. In the MS Condition the correlation was significant for action-oriented participants: Feelings of helplessness after reminders of one's own mortality were associated with more positive evaluations of own-culture attributes, suggesting a proximal affect-regulation function of those evaluations. These correlations, as computed at the end of the experiment (T3), were not significant (see Table 3).

Table 3. Correlations between attractiveness of own-culture attributes and reported helplessness for failure state-oriented (SOF) and failure action-oriented (AOF) participants in Study 2.

	Control (cinema)		Mortality Salience	
	SOF	AOF	SOF	AOF
	($n = 13$)	($n = 15$)	($n = 17$)	($n = 14$)
Proximal helplessness (T2)	−.13	.07	.03	.62*
Distal helplessness (T3)	−.42	−.01	−.11	−.04

Note: Three participants failed to complete the ratings. * $p < .05$.

General Discussion

The present studies show that our German participants gave average negative evaluations to national pride (see Table 1). This was predicted because of historical reasons related to the Nazi era in Germany, a theme that is still hotly debated in the country almost 60 years after the demise of that nationalistic dictatorial regime. We propose that, in this cultural context, it requires a substantial amount of self-regulatory ability or even *emotional autonomy* to give less negative or even positive evaluations to controversial symbols representing one's own cultural worldview, such as national pride. Action-oriented individuals, who are able to self-regulate themselves under threatening or failure-related conditions (Kuhl, 2000; Kuhl & Beckmann, 1994), were, therefore, expected to show this pattern. Results of both studies support this hypothesis. After MS induction action- but not state-oriented participants gave more neutral scores to national pride; which was not the case for participants of the Control Condition (see Figures 1 and 2). The lack of findings for action-oriented participants in the Control Condition was predicted, because they are expected to access extension memory and to exert active self-regulation *only* when they need it, for example, after induction of helplessness or, in the present context, MS (cf. Kuhl, 2000). Notice that emotional autonomy and self-regulation need not play an equivalent role in cultures in which national pride is regarded as a *positive* phenomenon: An increase in nationalism after MS has been reported as a main effect not only for American (Nelson et al., 1997), but also for Italian and Scottish participants (Castano, Yzerbyt, & Paladino, 2004).

Self-esteem was examined in the second study. Results showed that after controlling for self-esteem as a covariate, the effects of action orientation on national pride (worldview defense) remained unchanged, which argues for the independence of self-regulation (AOF) and self-esteem in bringing about these effects. Moreover, self-esteem did not serve as a moderator of effects on national pride (i.e., low self-esteem was not associated with higher cultural worldview defense after MS), which is in disagreement with the results of studies carried out in the USA (cf. Greenberg et al., 1997; Harmon-Jones et al., 1997). What could be the critical difference between the constructs of self-esteem and action orientation? One possibility is that *self-esteem* measures the threshold for responding with negative affect or feelings of insecurity. This threshold affects the likelihood and frequency of showing negative affect as a first response to aversive events (Biebrich & Kuhl, 2004). In contrast, *action orientation* presumably measures *self-regulation* of affect, that is, the ability to modify the first affective response to an aversive situation by terminating negative affect.

Findings using the additional (indirect) measure of cultural worldview in Study 2 confirmed the moderator effect of AOF on worldview defense. Cultural belonging was here defined beyond strict national boundaries (i.e., not Germany but *Central Europe*), to avoid the potential reaction of our participants by direct questioning of national pride. As predicted, only action-oriented participants under MS condition gave positive ratings to their own culture, compared to state-oriented in the same condition and to all participants in the control condition (see Table 2). This convergent evidence supports the conclusion that emotional autonomy is needed to obtain cultural worldview defense effects related to nationalism in a culture in which national values are associated with negative evaluations (cf. Doosje et al., 1998). Action-oriented participants in the MS condition showed a significant correlation between the degree of helplessness they experienced immediately after induction of MS and the culture-specific attractiveness ratings they gave (see Table 3). The effects found were proximal (T2) and not distal (T3), which suggests that those evaluations may have served a mood-repair function (i.e., implicit regulation of negative affect) immediately after induction of mortality salience. The role of *negative affect* on MS effects has not been demonstrated (Greenberg et al., 1997), and it may not be needed to explain those effects (cf. Arndt et al., 2002; Kuhl, 2000). However, the results of Study 2 on helplessness suggest that it would be premature, on the basis of the present results, to discard its influence in producing worldview defence.

Several studies carried out in Germany have shown effects of MS on worldview defense – for example, on consensual validations (Pyszczynski et al., 1996), on altruistic behavior (Jonas et al., 2002), and on attitudes toward the German reunification (Jonas & Greenberg, 2004). However, in this last study effects occurred only for participants having a supportive attitude toward the German reunification but not for those having a more neutral attitude toward it. To our knowledge, the present studies are the first to investigate the issue of national pride after MS inductions in Germany, taking individual differences in self-regulation into account.

We looked exploratively at effects of MS on the other values assessed (see Table 1). Pooling data from both studies we found lower scores for intelligence and professional efficiency as a function of mortality salience. Moreover, materialistic values do not seem to have been revalued by our participants after exposure to mortality salience. There are no significant differences in the values *wealth* and *self-actualization through consumption* between experimental conditions in either study or in the analysis pooling data from both studies. This pattern of results fails to replicate the findings of the two studies reported by Kasser and Sheldon (2000), who found sig-

nificant increases in the materialistic behavior shown by their American college students after exposure to mortality salience. The reason for this discrepancy between studies is not clear, although it seems plausible to assume that cultural differences between German and American students concerning the subjective value of materialistic goods could have played a role.

Conclusion

Mortality salience typically increases support of one's own cultural worldview, according to TMT (Solomon et al., 2004). The specific ways in which these effects will be manifested, however, depend on the particular culture in which the individual lives. If, for historical reasons, the main symbols of cultural worldview, like national pride in Germany, elicit negative associations, it takes more than high self-esteem to counteract the prevalent negative-evaluation tendency and to give neutral or positive evaluations to those symbols, even after MS induction: It requires emotional autonomy in the sense of the ability to regulate negative emotions autonomously through self-confrontation (Koole & Jostmann, 2004; Kuhl, 2000).

Acknowledgments

We thank Sander Koole for his useful suggestions on a previous version of this manuscript.

References

- Arndt, J., Allen, J., & Greenberg, J. (2001). Traces of terror: Subliminal death primes and facial electromyographic indices of affect. *Motivation and Emotion*, *25*, 253–277.
- Arndt, J., Greenberg, J., & Cook, A. (2002). Mortality salience and spreading activation of worldview-relevant constructs: Exploring the cognitive architecture of terror management. *Journal of Experimental Psychology: General*, *131*, 307–324.
- Baumann, N., Kuhl, J., & Kazén, M. (2003). *Left-hemispheric activation and self-infiltration: Testing a neuropsychological model of internalization*. Manuscript submitted for publication.
- Beeman, M., Friedman, R.B., Grafman, J., Perez, E., Diamond, S., & Lindsay, M.B. (1994). Summation priming and coarse semantic coding in the right hemisphere. *Journal of Cognitive Neuroscience*, *6*, 26–45.
- Biebrich, R., & Kuhl, J. (2004). Handlungsfähigkeit und das Selbst: Persönlichkeitsbedingte Unterschiede in der Bewältigung innerer Kapitulation [Action competence and self: Individual differences in coping with inner capitulation]. *Zeitschrift für Differentielle und Diagnostische Psychologie*, *25*, 57–77.
- Castano, E., Yzerbyt, V., Paladino, M.-P., & Sacchi, S. (2002). I belong, therefore, I exist: Ingroup identification, ingroup entitativity, and ingroup bias. *Personality and Social Psychology Bulletin*, *28*, 135–143.
- Castano, E., Yzerbyt, V., & Paladino, M.-P. (2004). Transcending oneself through social identification. In J. Greenberg, S.L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 305–321). New York: Guilford.
- Craik, F.I.M., Moroz, T.M., Moscovitch, M., Stuss, D.T., Winocur, G., Tulving, E., & Kapur, S. (1999). In search of the self: A positron emission tomography study. *Psychological Science*, *10*, 26–34.
- Dechesne, M., Janssen, J., & van Knippenberg, A. (2000). Derogation and distancing as terror management strategies: The moderating role of need for closure and permeability of group boundaries. *Journal of Personality and Social Psychology*, *79*, 923–932.
- Diefendorff, J.M., Hall, R.J., Lord, R.G., & Streat, M.L. (2000). Action-state orientation: Construct validity of a revised measure and its relationship to work-related variables. *Journal of Applied Psychology*, *85*, 250–263.
- Doosje, B., Branscombe, N.R., Spears, R., & Manstead, A.S. (1998). Guilty by association: When one's group has a negative history. *Journal of Personality and Social Psychology*, *75*, 872–886.
- Ferrig, D., & Filipp, S.H. (1996). Messung des Selbstwertgefühls: Befunde zur Reliabilität, Validität und Stabilität der Rosenberg-Skala [The measurement of self-esteem: Findings on the reliability, validity, and stability of Rosenberg's scale]. *Diagnostica*, *42*, 284–292.
- Greenberg, J., Pyszczynski, T., Solomon, S., Rosenblatt, A., Veeder, M., Kirkland, S., & Lyon, D. (1990). Evidence for terror management theory. II: The effects of mortality salience reactions to those who threaten or bolster the cultural worldview. *Journal of Personality and Social Psychology*, *58*, 308–318.
- Greenberg, J., Martens, A., Jonas, E., Eisenstadt, D., Pyszczynski, T., & Solomon, S. (2003). Psychological defence in anticipation of anxiety. *Psychological Science*, *14*, 516–519.
- Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. In P.M. Zanna (Ed.), *Advances in social psychology* (Vol. 29, pp. 61–141). San Diego, CA: Academic Press.
- 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.
- Jaramillo, F., & Spector, P.E. (2004). The effect of action orientation on the academic performance of undergraduate marketing majors. *Journal of Marketing Education*, *26*, 250–260.
- Jonas, E., & Greenberg, J. (2004). Terror management and political attitudes: The influence of mortality salience on German's defense of the German reunification. *European Journal of Social Psychology*, *34*, 1–9.
- Jonas, E., Schimel, J., Greenberg, J., & Pyszczynski, T. (2002). The Scrooge effect: Evidence that mortality salience increases prosocial attitudes and behavior. *Personality and Social Psychology Bulletin*, *28*, 1342–1353.
- Kasser, T., & Sheldon, K.M. (2000). On wealth and death: Materialism, mortality salience, and consumption behavior. *Psychological Science*, *11*, 348–351.
- Kazén, M., Baumann, N., & Kuhl, J. (2003). Self-infiltration and

- self-compatibility checking in dealing with unattractive tasks: The moderating influence of state vs. action orientation. *Motivation and Emotion*, 27, 157–197.
- Koole, S., & Jostmann, N. (2004). Getting a grip on your feelings: Effects of action orientation and social demand on intuitive affect regulation. *Journal of Personality and Social Psychology*, 87, 974–990.
- Koole, S., & Van den Berg, A.E. (2004). *Lost in the wilderness: Terror management, action orientation, and evaluations of nature*. Manuscript submitted for publication.
- Kuhl, J. (1981). Motivational and functional helplessness: The moderating effect of state vs. action orientation. *Journal of Personality and Social Psychology*, 40, 155–170.
- Kuhl, J. (1994). Action and state orientation: Psychometric properties of the action control scales (ACS-90). In J. Kuhl & J. Beckmann (Eds.), *Volition and personality: Action vs. state orientation* (pp. 47–59). Göttingen: Hogrefe.
- Kuhl, J. (2000). A functional-design approach to motivation and volition: The dynamics of personality systems interactions. In M. Boekaerts, P.R. Pintrich, & M. Zeidner (Eds.), *Self-regulation: Directions and challenges for future research* (pp. 111–169). New York: Academic Press.
- Kuhl, J., & Beckmann, J. (1994). *Volition and personality: Action vs. state orientation*. Göttingen, Germany: Hogrefe.
- Kuhl, J., & Fuhrmann, A. (1998). Decomposing self-regulation and self-control: The volitional components inventory. In J. Heckhausen & C. Dweck (Eds.), *Lifespan perspectives on motivation and control* (pp. 15–49). Hillsdale, NJ: Erlbaum.
- Kuhl, J., & Koole, S.L. (2004). Workings of the will: A functional approach. In J. Greenberg, S.L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 411–430). New York: Guilford.
- Mikulincer, M., & Florian, V. (2000). Exploring individual differences in reactions to mortality salience: Does attachment style regulate terror management mechanisms? *Journal of Personality and Social Psychology*, 79, 260–273.
- Mikulincer, M., & Florian, V. (2002). The effects of mortality salience on self-serving attributions. Evidence for the function of self-esteem as a terror management mechanism. *Basic and Applied Social Psychology*, 24, 261–271.
- Nelson, L.J., Moore, D.L., Olivetti, J., & Scott, T. (1997). General and personal mortality salience and nationalistic bias. *Personality and Social Psychology Bulletin*, 23, 884–892.
- Pyszczynski, T., Greenberg, J., & Solomon, S. (1999). A dual-process model of defense against conscious and unconscious death-related thoughts: An extension of terror management theory. *Psychological Review*, 106, 835–845.
- Pyszczynski, T., Greenberg, J., Solomon, S., Arndt, J., & Schimel, J. (2004). Why do people need self-esteem? A theoretical and empirical review. *Psychological Review*, 130, 435–468.
- Pyszczynski, T., Wicklund, R.A., Florescu, S., Koch, H., Gauch, G., Solomon, S., & Greenberg, J. (1996). Whistling in the dark: Exaggerated consensus estimates in response to incidental reminders of mortality. *Psychological Science*, 7, 332–336.
- Rholes, W.S., Michas, L., & Shroff, J. (1989). Action control as a vulnerability factor in dysphoria. *Cognitive Therapy and Research*, 13, 263–274.
- Rosahl, S.K., Tennigkeit, M., Kuhl, J., & Haschke, R. (1993). Handlungskontrolle und langsame Hirnpotentiale: Untersuchungen zum Einfluß subjektiv kritischer Wörter (Erste Ergebnisse) [Action control and slow potential shifts: The impact of words reminding of stressful life-events]. *Zeitschrift für Medizinische Psychologie*, 2, 1–8.
- Rosenblatt, A., Greenberg, J., Solomon, S., Pyszczynski, T., & Lyon, D. (1989). Evidence for terror management theory. I: The effects of mortality salience on reactions to those who violate or uphold cultural values. *Journal of Personality and Social Psychology*, 57, 681–690.
- Rumelhart, D.E., & McClelland, J.L. (1986). *Parallel distributed processing: Explorations in the microstructure of cognition* (Vol. 1). Cambridge, MA: MIT Press.
- Solomon, S., Greenberg, J., & Pyszczynski, T. (2004). The cultural animal: Twenty years of terror management theory and research. In J. Greenberg, S.L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 13–34). New York: Guilford.

About the author

Miguel Kazén is Researcher and Lecturer at the University of Osnabrück, Germany. His current research interests involve the influence of motivation and affect on executive processes, anticipatory coping, hemispheric differences related to personality and self-access, mortality salience effects, and prospective memory.

Address for correspondence

Miguel Kazén, Nicola Baumann, Julius Kuhl
 Faculty of Human Sciences
 Area of Psychology
 University of Osnabrück
 Seminarstr. 20
 D-49074 Osnabrück
 Germany
 E-mail mikazen@uos.de, nbaumann@uos.de, kuhl@uos.de
