



Existential Threat Fuels Worldview Defense, but not after Priming Autonomy Orientation

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ABSTRACT

Although mortality salience (MS) typically motivates worldview defensiveness, priming an autonomy/self-determined orientation may attenuate that defensiveness. In Study 1 ($n = 156$) MS (vs. pain) had higher support for militaristic defense of American interests abroad, unless participants were also primed with autonomy-oriented (vs. controlled) concepts. In Study 2 ($n = 205$), a pilot survey found participants were strongly aware of and interested in the cultural value of tolerance; MS (vs. neutral) had higher defense of that salient value in the form of support for more expansive/accepting immigration policy, unless participants were primed to recall autonomous/self-determined (vs. controlled) experiences. These findings bear implications for both aggressive and prosocial existential defenses, political ideology, and the intersection of existential defense and growth orientations.

Political atmospheres are often characterized by an invigorating yet turbulent mixture of existential concerns and social values. One must often address mortality-related concerns (terrorism, war, abortion, capital punishment, gun violence, healthcare, etc.), navigate freedom-related experiences (self-determination, liberty, opportunity, etc.), and express attitudes about foreign and domestic policies related to cultural identities, beliefs, and values. The present research builds on both terror management theory (TMT; Greenberg, Vail, & Pyszczynski, 2014) and self-determination theory (SDT; Ryan & Deci, 2017) to explore how such existential concerns might intersect to influence Americans' defense of American interests and values both at home and abroad. But, whereas prior work suggests death awareness can motivate both the aggressive defense of one's national interests as well as the defense of prosocial cultural values, the present work further explores the novel question of whether the concept (Study 1) and recalled experience (Study 2) of autonomy might mitigate the impact of death awareness on such socio-cultural defenses.

TMT and worldview defense

Building upon the work of cultural anthropologist Ernest Becker (Becker, 1971, 1973), TMT posits that

people manage the awareness of death by investing in sociocultural worldviews and obtaining self-esteem within those systems (Routledge & Vess, 2019). Cultural worldviews involve a set of identities, beliefs, and values that offer a sense of permanence through secular legacy (national identity, contributions to government, art, science, prosocial values, etc.) and/or spiritual means (e.g., afterlife). Self-esteem then functions in that context as an indicator of how well one is living up to the standards and values of one's worldview. One hypothesis derived from TMT is the *worldview defense hypothesis* (Greenberg et al., 1990), which posits that if one's sociocultural worldviews serve to protect against existential concerns, then increasing mortality salience (MS) should motivate people to defend and affirm those worldviews. Indeed, over 30 years of research has found support for the idea that MS motivates worldview defense (Burke, Martens, & Faucher, 2010; Routledge & Vess, 2019).

For example, some research has found that MS can motivate harsh punishment of moral transgressors (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989), rejection of those with different religious beliefs and identities (Greenberg et al., 1990), and aggression toward people with different political beliefs (McGregor et al., 1998). MS has also been found to: increase American participants' liking of

those with pro-USA attitudes and derogation of critics of the USA (Gailliot, 2012; Greenberg et al., 1990, 2003); lead Americans to express negative attitudes toward Arabs (Motyl et al., 2011); lead Canadians to endorse civil rights restrictions for people with anti-Western/pro-Islamic beliefs (Norenzayan, Dar-Nimrod, Hansen, & Proulx, 2009); and increase American, Israeli, and Iranian participants' support for military aggression against their respective "enemy" nations (Hirschberger, Pyszczynski, & Ein-Dor, 2009; Pyszczynski et al., 2006; Pyszczynski, Motyl, et al., 2012). Together, these findings suggest that death awareness can motivate people to more aggressively defend their cultural identities, beliefs, and values, including militaristic defense of their national interests.

Additionally, whereas worldview defense may often involve aggressive defense of one's national identities and interests, many belief systems include prosocial values such as helping, empathy, compassion, and tolerance (Vail et al., 2012 for review). For instance, many Americans may believe in upholding and defending American interests on the international stage, while also believing in the value of tolerance and diversity enshrined in the idea that America is a nation of immigrants—a "melting pot" that welcomes people from all corners of the world and all walks of life. Accordingly, when such prosocial values are salient or dominant, TMT suggests that MS would motivate increased adherence to those worldview beliefs. Indeed, research has found that MS motivated participants to: increase helping behavior when the value of helping was salient (Gailliot, Stillman, Schmeichel, Maner, & Plant, 2008); increase support for peace when pacifism was salient (Jonas et al., 2008); and increase forgiveness among individuals with high empathy (Schimmel, Wohl, & Williams, 2006). Additionally, when the value of tolerance was salient, MS increased Americans' acceptance of politically-dissimilar others and decreased domestic anti-Islamic attitudes (Greenberg, Simon, Pyszczynski, Solomon, & Chatel, 1992; Vail, Courtney, & Arndt, 2019). Together, these findings are consistent with the idea that although death awareness can motivate aggressive defense of one's national identities and interests, it can also motivate defensive adherence to one's dominant or salient prosocial beliefs and values.

And yet, although MS can motivate various worldview defenses, it is also possible that certain conditions might attenuate existential concerns and thus attenuate such defensive responses. One way to mitigate existential concerns might be to experience

liberty—to feel as though one is able to behave in freely chosen, self-determined ways. Indeed, building upon prior work (e.g., N. O. Brown, 1959; Rank, 1936), Becker (1973) himself argued that people can manage the awareness of death by striving for *causa sui* (self-causation/self-determination)—engaging life as the author of one's own actions, living according to one's internalized beliefs and values. One prominent theory dealing specifically with the psychological experience of engaging life as the author of one's actions is SDT (Deci & Ryan, 2000).

SDT and autonomy orientation

Building on prior work (DeCharms, 1968; Deci, 1975), SDT posits that people are fundamentally oriented toward personal growth and well-being, facilitated in large part by autonomy—the individual's ability to act and pursue goals coherent with one's own internalized beliefs and values (Ryan & Deci, 2017). From this perspective, one's behavioral orientations can range from autonomous to controlled, impacting both task performance and well-being. Autonomous orientation occurs when an individual's behavior is based on their own internalized beliefs and values; in such circumstances, one's behavior is perceived as a self-determined expression and endorsement of one's personal values and is enacted with a greater sense of volition and psychological freedom. In contrast, controlled orientation occurs when one's behaviors are regulated by an external force, rather than one's own interests, such as when an external authority compels/forces the behavior or social expectations induce internal pressures to conform (e.g., guilt, shame, contingent self-worth). Importantly, any particular behavior might be experienced as autonomous or controlled. For example, consider two students enrolling in the same social psychology course: one might enroll because she genuinely believes it offers something of value and finds it interesting, making it autonomous or self-determined behavior¹; the other might enroll not because of any genuine appreciation or interest, but rather because her degree program requires it or because her friends enrolled and she now feels pressure to do the same, making it a more introjected and externally-controlled behavior.

Much research has investigated the impact of social environments influencing people's sense of autonomy in areas such as work (Gagné & Deci, 2005), education (Reeve, 2002), and sports (Hagger & Chatzisarantis, 2007; Pelletier, Fortier, Vallerand, &

Brière, 2001), among others. Environments, organizations, and leaders that empathize, provide options, and explain the rationale of decisions all facilitate the feeling of autonomy (Deci & Ryan, 1987), whereas those that involve rewards (Deci, Koestner, & Ryan, 1999), surveillance (Enzle & Anderson, 1993; Lepper & Greene, 1975), deadlines (Amabile, Dejong, & Lepper, 1976), and direct orders (Reeve & Jang, 2006) are controlling and undermine feelings of autonomy. Consistent with SDT, felt autonomy is associated with better task performance and greater well-being (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Ryan & Deci, 2017), whereas a lack of autonomy undermines well-being and is even linked to various psychopathologies (Ryan, Deci, & Vansteenkiste, 2016).

Additionally, recent research has also examined the effects of priming autonomy orientations. Some studies have manipulated autonomy orientations using unattended-channel audio primes (Radel, Sarrazin, Jehu, & Pelletier, 2013) or computerized subliminal visual primes (Radel, Sarrazin, & Pelletier, 2009) of autonomy-related words (e.g., willing, freedom, chose) vs. neutral and controlled orientation words (e.g., constrained, obligation, obey). Additionally, some studies have manipulated autonomy orientation through the use of sentence unscrambling priming tasks (Hodgins, Brown, & Carver, 2007; Hodgins, Yacko, & Gottlieb, 2006; Levesque & Pelletier, 2003). Indeed, compared to both neutral and controlled primes, such autonomy primes increase self-reports of felt autonomy and cognitive accessibility of autonomy-related concepts, increase intrinsic motivation, increase physiological effort, and improve behavioral performance on subsequent lab tasks (Levesque & Pelletier, 2003; Radel et al., 2013, 2009).

But further, SDT argues that individuals with autonomy orientations are more growth oriented—that is: better able to cope with stress, more open, and less defensive (Vansteenkiste & Ryan, 2013). In terms of stress coping, for example, participants exposed to an autonomy-prime showed reduced physiological threat response and improved behavioral performance during a stressful interview and speech (Hodgins et al., 2010), and dancers who felt more self-determined prior to a solo performance showed reduced cortisol responses, reduced self-reported anxiety, and perceived the performance to be more of a positive challenge than a stressful threat (Quested et al., 2011). In terms of openness, a 2-week diary study found that autonomy orientation was associated with greater interpersonal disclosure, trust, and honesty (Hodgins, Koestner, & Duncan, 1996); and,

adolescents with greater autonomy orientation were more open to exploring potentially uncomfortable identity-discrepant information (Soenens, Berzonsky, Vansteenkiste, Beyers, & Goossens, 2005). In terms of defensiveness, compared to a controlled orientation prime, people given an autonomy prime reduced their avoidance of negative experiences (Hodgins et al., 2006), used less hostile humor (Weinstein, Hodgins, & Ostvik-White, 2011), and reduced their suppression of emotionally-distressing information and negative past events (Weinstein, Deci, & Ryan, 2011; Weinstein & Hodgins, 2009). Autonomy primes also reduced self-serving attributional bias (Knee & Zuckerman, 1996) and reduced self-handicapping (Hodgins et al., 2006). Whereas threats to one's self-esteem and social group boosted defensive self-esteem and self-serving attributional biases after a controlled orientation prime, those defenses were attenuated after an autonomy orientation prime (Hodgins et al., 2007, 2006).

Together, the above research finds broad support for SDT. An active autonomy orientation can promote intrinsic motivation, improve task performance, and bolster well-being. Autonomy orientation is more growth oriented in the sense that it promotes better coping with stress, more openness to difficult information, and less defensiveness about negative experiences and self-esteem. However, no research has yet examined whether an active autonomy orientation might mitigate the effect of death awareness on worldview defensiveness. Nevertheless, several neighboring (not interchangeable with SDT) theoretical perspectives and related research evidence suggest it might.

Autonomy and existential nondefensiveness

First, Becker (1973) suggested that as individuals mature from infant to adult, they are exposed to various cultural beliefs and values; if internalized, individuals will integrate those values into their self and autonomously express them (perhaps developing a passion for dancing, a particular religious belief, an appreciation of the value of stopping one's car at red traffic lights, and so on) rather than experience them as a simple duty being externally imposed by society. Thus, self-determined orientations may naturally affirm one's internalized death-denying cultural systems of meaning and self-worth. Although no prior work has directly tested that idea, suggestive evidence comes from tests of TMT's buffer hypothesis, which holds that: if something functions to buffer against death awareness, then situationally activating (or chronically relying on) it will alleviate the existential

concern caused by death reminders, and thus attenuate or eliminate the need for defensive responding after MS. Numerous studies have found that MS typically increased death-thought and worldview defenses, but not if participants first affirmed their worldview belief systems (Schmeichel & Martens, 2005; Vail, Morgan, & Kahle, 2018), their close relationships with others (Mikulincer, Florian, & Hirschberger, 2003), and/or had increased levels of self-esteem (Harmon-Jones et al., 1997; Schmeichel et al., 2009). Thus, if autonomy orients people toward their internalized sociocultural death-denying systems of meaning and self-worth, then—as in this prior research—MS should typically motivate worldview defensiveness unless autonomy orientation is activated.

Second, numerous observers have pointed out that a core existential problem posed by the concept of death is that one will cease to *be*, in the sense that one will cease to be a living, vital, self-aware, freely acting agent in the world (Choron, 1964; Yalom, 1980). Yet, the experience of self-determination represents full-fledged living, including self-awareness, vitality, and personal control in one's life (Ryan & Deci, 2004). Though not directly related to this idea, some suggestive yet distally related neighboring constructs are known to mitigate existential defensiveness. For example, autonomy orientation is associated with greater mindfulness (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007), vitality (Ryan & Frederick, 1997), and competence and desire for control (Amoura, Berjot, & Gillet, 2013), and generally promotes full functioning and optimal 'being' in the world (Niemiec & Ryan, 2013; Ryan & Deci, 2004a). Thus, compared to controlled orientations, activating autonomy orientation may mitigate death-related existential concerns because it amplifies the sense of being "truly alive" as a vital, aware, self-determined agent acting authentically in the world. Some suggestive evidence has found that death reminders increased worldview defensiveness, but not if participants were high in mindfulness (Niemiec et al., 2010) or considered having personal control over their death (Fritsche, Jonas, & Fankhänel, 2008). However, no work has yet investigated the role of autonomy orientation specifically.

Third, SDT research has found that autonomy promotes growth orientation, entailing better coping with stress, less defensiveness, and greater openness (Vansteenkiste & Ryan, 2013), which bears implications for coping with existential threat and reducing worldview defensiveness. In terms of coping with existential concern, for example, regardless of self-

reported history of physical assaults and injury, psychiatric hospital staff with greater autonomy tended to perceive reduced risk of potentially life-threatening danger to their physical safety (Lynch, Plant, & Ryan, 2005). In terms of openness and nondefensiveness, MS increased worldview defense unless participants first engaged in a creative task (Routledge, Arndt, & Sheldon, 2004) or were high in openness to experience or curiosity (Boyd, Morris, & Goldenberg, 2017), orientations typically viewed as supportive of personal growth and autonomy. Other suggestive evidence is related to work finding that more autonomy-oriented individuals value personal growth oriented goals, rather than extrinsic culturally-introjected goals (e.g., standards of wealth, fame, physical attractiveness) (Kasser & Ryan, 1996; Niemiec, Ryan, & Deci, 2009; Sheldon, Gunz, Nichols, & Ferguson, 2010). Such individuals report reduced death anxiety and greater death acceptance (Van Hiel & Vansteenkiste, 2009) and they should not respond to MS with esteem-striving or worldview defensiveness—for example, MS increased both financial greed (Cozzolino, Staples, Meyers, & Samboceti, 2004) and nationalistic worldview defensiveness (Vail, Horner, & Conti, 2019) among people with stronger extrinsic goals but not among those with stronger autonomy/growth oriented goals.

The present research

Together, the above-mentioned theoretical perspectives and suggestive evidence each converge on the previously untested hypothesis that although MS typically motivates worldview defensive responses, that effect should be attenuated among individuals with an active autonomy orientation. The present research tested that idea in two studies. In Study 1, conducted in 2015, American student participants were reminded of death or a control topic, primed with either autonomy orientation or controlled orientation concepts, and then were given an opportunity to express support for the militaristic defense of American interests abroad. Study 2 was conducted in the months following the 2016 American Presidential Election, when a pilot survey indicated our American student sample had an increased awareness of the value of tolerance/acceptance of immigrants. Thus, in Study 2, participants were reminded of death or a control topic, primed with either autonomy orientation or controlled orientation concepts, and then were given an opportunity to express support for the American value

of tolerance toward immigrants in the form of more accepting immigration attitudes.

Study 1

In terms of American worldview defensiveness abroad, consider the US involvement in the Syrian civil war. In 2011, Arab Spring protestors in Syria called for removal of the Assad regime, which they panned as oppressive, and armed conflict erupted after those protests were violently suppressed (Slackman, 2011; Syria, 2016). In the chaotic years that followed, the USA and its Western allies joined the conflict aligned with Syrian opposition/rebel forces, against the Iran- and Russia-supported Assad regime as well as against Al-Qaeda and the Islamic State of Iraq and the Levant (ISIL) that had opportunistically entered the fray. Both conservatives and liberals in the USA were able to agree that opposing al-Qaeda, ISIL, and the Assad regime was worthwhile foreign policy—meaning that supporting military defense of American interests in Syria was a defense of American interests/values abroad rather than an affirmation of a particular American domestic conservative or progressive ideology. Indeed, the stated American interest was to advance Western values and democracy, protect civilians from conventional and chemical attacks, and stymie regional power grabs by Russia, Islamic militants, and other opportunistic terrorist groups. As US President Obama put it (Obama Syria speech, 2013), “Our ideals and principles, as well as our national security, are at stake in Syria, along with our leadership of a world where we seek to ensure that the worst weapons will never be used.” In that context, over the subsequent years as many as 3-in-4 Americans supported the US military campaign in Syria (Pew Research Center, 2014; Smeltz, Kafura, & Martin, 2016).

Thus, in Study 1, conducted during that period in 2015, support for militaristic defense of American interests against Syria served as our target dependent variable. Participants were randomly assigned to either an MS or dental pain prime, then were primed with either autonomy-orientation or controlled-orientation concepts, and then indicated their support for militaristic defense of American interests. The present analysis led to the hypothesis that MS should increase worldview defense among those primed with controlled-orientation concepts, but that MS should *not* increase worldview defense among those primed with autonomy-orientation concepts.

Method

Participants

A total of 157 participants were recruited via a research exposure program (SonaSystems) at Cleveland State University, and those who participated were compensated with partial credit toward a departmental research exposure requirement. One participant discontinued the study before completing the manipulations or dependent measure and was therefore excluded listwise. The remaining sample of 156 participants tended to be Christian, White, Non-Hispanic, college-age females (see [Supplemental Materials Table S1](#)).

Materials and procedure

The present study was conducted with IRB approval; all protocol materials, data, and syntax are available at <https://osf.io/devtp/>. Participants attended a laboratory session where they were greeted by an experimenter who obtained informed consent. A set of filler personality items was administered to bolster the cover story that the study was about “personality and social attitudes,” and then the target materials were administered in the following order.

Mortality salience

Following previous research (e.g., Greenberg et al., 1990), participants were randomly assigned to complete one of two versions of a “Projective Life Attitudes Assessment.” In the MS condition, participants responded to the prompts, “Please briefly describe the emotions that the thought of your own death arouses in you,” and “Jot down, as specifically as you can, what you think happens to you as you physically die and once you are physically dead.” The control condition used a parallel prompt about dental pain instead of death, chosen to test whether MS exerts effects above and beyond other negative stimuli. Aside from being face-valid, hundreds of prior studies have used this method (Routledge & Vess, 2019 for recent comprehensive reviews); large meta-analyses of studies using this method have found that MS increases worldview defensiveness (the topic of the present paper) (Burke, Kosloff, & Landau, 2013; Burke et al., 2010), and also a systematic review and a more recent meta-analysis of many dozens of studies have found that the MS essay prompt increases implicit death-thought accessibility (Hayes, Schimmel, Arndt, & Faucher, 2010; Steinman & Updegraff, 2015).

Delay and distraction

Next, participants completed the positive and negative affect schedule² (PANAS-X; Watson & Clark, 1992), as well as a brief reading task (an excerpt taken from *The Growing Stone* by Camus, 1957) and a word-search task, providing the task-switching distraction needed to observe the consequences of non-conscious death awareness (Pyszczynski, Greenberg, & Solomon, 1999; Routledge & Vess, 2019). This procedure is based on research finding that conscious awareness of death first motivates efforts to remove death thoughts from consciousness by suppressing them or reducing the direct threat of death (e.g., health and safety checks); but, when moved outside of focal awareness (e.g., subliminal primes, or an explicit MS prime followed by delay/distracter tasks), death awareness exerts a non-conscious influence on motivation. Indeed, several meta-analyses of hundreds of studies have found that death-related primes followed by delay tasks typically produce both increased death-thought accessibility (Steinman & Updegraff, 2015) and increased worldview defense (Burke et al., 2013, 2010; Martens, Burke, Schimel, & Faucher, 2011).

Autonomy salience manipulation

Following validated methods used in prior research (Hodgins et al., 2007, 2006; Weinstein, Deci, et al., 2011), we used a sentence unscrambling task to manipulate the salience of self-determination. Confirming the manipulation's validity, prior work has found that—whether compared to either neutral or controlled primes—the autonomy prime increased self-reports of felt autonomy and cognitive accessibility of autonomy-related concepts, increased intrinsic motivation, increased physiological effort, and improved behavioral performance on subsequent lab tasks (e.g., Levesque & Pelletier, 2003; Radel et al., 2013, 2009); thus, we aimed for a more parsimonious study design by omitting the neutral condition and including just the more theoretically meaningful autonomy and controlled prime conditions.

The task consisted of 30 items in which participants were given a set of 5 words in scrambled order and were instructed to drop an extraneous word from each to form a coherent four-word sentence. Fifteen sentences were neutral and constant across conditions, and 15 were prime sentences which differed by condition. An example neutral sentence is “sale for by sweatshirts are” (sweatshirts are for sale). Example self-determination concept prime sentences are: “to go and I decided” (I decided to go); and “am I still for self-determined” (I am still self-determined). Example

controlling concept prime sentences are: “do we to this must” (we must do this); “was obey we're compelled to” (we're compelled to obey); and “so behavior my they restrict” (they restrict my behavior).

Worldview defense

Following prior research (Pyszczynski, Motyl, et al., 2012; Rothschild, 2008), worldview defense was measured by assessing American participants' support for militaristic defense of American interests in Syria. Participants were prompted to: “Imagine that you are Commander-in-Chief of the Armed Forces. It is your job to decide when to use your armed forces knowing that, as a result, some innocent civilians are likely to be killed.” The measure began with a sentence stem “I would support using our armed forces against Syria...” and participants were then presented with six brief scenarios such as, “... if Syria blatantly disregards the international community,” “... if Syria is providing a safe haven for terrorists who want to attack Americans,” and “... if Syrian soldiers or militants attack American soldiers.” Each item used a 10-point Likert scale (1 = *Strongly disagree*, 10 = *Strongly agree*) and the six items formed a reliable index ($\alpha = .90$), so an overall composite score was calculated such that higher scores indicated greater support for anti-Syria militarism.

Demographics

Participants completed a questionnaire recording age, sex, race, ethnicity, religious affiliation, political orientation, etc., and then were fully debriefed.

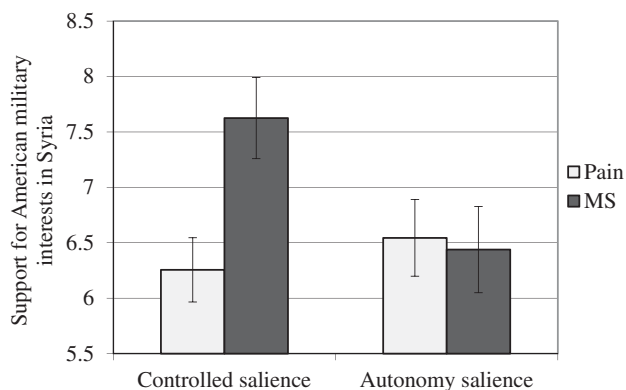
Results

The study used a 2 (MS vs. dental pain) x 2 (salience: autonomy vs. controlled) design examining support for anti-Syria militarism (worldview defense). See Table 1 for descriptive statistics for worldview defense scores overall and in each condition. First, there appeared to be a main effect of MS, such that anti-Syria militarism was higher in the MS than the pain condition ($d = .32$, $SE = .16$). There was also a trivial main effect of autonomy prime, such that anti-Syria militarism was lower in the autonomy than the controlled condition ($d = -.13$, $SE = .16$).

To better understand the nature of the interaction, we examined the conditional pairwise comparisons of each of the two variables. First we examined the conditional effects of MS. In the controlled prime condition, worldview defense was higher in the MS condition than the pain condition ($d = .67$, $SE = .22$).

Table 1. Worldview defense (support for American military interests in Syria) descriptive statistics overall and in each condition of Study 1.

	<i>n</i>	<i>M</i>	<i>SD</i>	Skewness (<i>SE</i>)	Kurtosis (<i>SE</i>)
Overall sample	156	6.66	2.18	−.97 (.19)	.67 (.39)
MS main effect pattern					
MS condition	64	7.07	1.87	−1.05 (.30)	1.40 (.59)
Pain condition	92	6.38	2.34	−.85 (.25)	.23 (.50)
Autonomy main effect pattern					
Autonomy condition	68	6.50	2.22	−1.05 (.29)	.71 (.57)
Controlled condition	88	6.79	2.14	−.92 (.26)	.70 (.51)
Interaction pattern					
MS, Controlled	34	7.63	1.46	−.19 (.40)	−.68 (.80)
Pain, Controlled	54	6.26	2.34	−.73 (.33)	−.05 (.64)
MS, Autonomy	30	6.44	2.09	−1.10 (.43)	.55 (.83)
Pain, Autonomy	38	6.54	2.35	−1.07 (.38)	.96 (.75)

**Figure 1.** MS had higher support for American military interests in Syria in the controlled prime condition, but not in the autonomy prime condition. The error bars represent standard error.

In the autonomy prime condition, worldview defense did not appear to meaningfully differ between the MS and pain condition ($d = -.04$, $SE = .24$). Next, we examined the conditional effects of autonomy prime. When reminded of dental pain, worldview defense did not meaningfully differ between the controlled and autonomy condition ($d = -.12$, $SE = .21$). But when reminded of death, worldview defense was higher in the controlled condition than the autonomy condition ($d = .67$, $SE = .26$) (see Figure 1).

Discussion

Study 1 found that nationalistic worldview defensiveness was higher in the MS (vs. pain) condition among those primed with controlled orientation, but not among those primed with autonomy orientation. Also, in the MS condition, worldview defensiveness was lower in the autonomy prime (vs. controlled prime) condition. This novel finding both converges with and extends the current understanding of existential

motivation, suggesting that death awareness may motivate worldview defense, but not when people feel autonomous and self-determined. There remains, however, some ambiguity about the nature of the attenuation effect observed in Study 1 because the measure of worldview defense—Americans militarism in Syria—confounded worldview defensiveness with hostility. Thus, it remains unclear whether the autonomy prime attenuated the MS-induced support for defensive militarism because autonomy simply inhibits hostility³, or because it produces a more general non-defensiveness in the face of existential threat and thus would attenuate worldview defensiveness regardless of whether it was hostile or prosocial.

Prior TMT research has found that MS motivates worldview defense, broadly, and may sometimes motivate hostile defense of one's national identities and interests (e.g., Americans' anti-Syria militarism) but may *also* motivate defense of salient prosocial values such as helping, empathy, compassion, and tolerance (Vail et al., 2012). Likewise, prior SDT research finds that self-determined orientation can reduce interpersonal hostility (e.g., hostile humor; Weinstein, Hodgins, et al., 2011), but also that self-determined orientation is associated with a more general “non-defensiveness” (Vansteenkiste & Ryan, 2013), including attenuated appraisals of stressors and even life-threatening situations as threats (Hodgins et al., 2010; Lynch et al., 2005; Quested et al., 2011). Therefore, Study 2 again employed a 2 (MS vs. neutral) x 2 (autonomy vs. controlled) design, but measured worldview defense in a domain in which MS was likely to motivate defense of the prosocial cultural value of tolerance, a salient value relevant to American immigration policy attitudes during the first year of the Donald Trump Presidency.

Study 2

Consider that, throughout its history, amid the political conversations about war and terrorism and other existential concerns, the US has remained largely accepting of immigrants. Even John F. Kennedy (1964) dismissed the persistent “nativist” voices as an agitated minority, greatly outnumbered among a “nation of immigrants” who welcomed newcomers as an affirmation of national strength, tolerance, freedom, acceptance, and opportunity. More than half a century later, that view still rings true among the broader American populace. As of 2015, 50% of Americans said immigrants strengthen American society (Jones, Cox, Cooper, & Rachel, 2016), and those

numbers only grew following the 2016 election of Donald Trump, who seemed to attack the traditional American values of tolerance and acceptance of immigrants. Trump routinely expressed nativist anti-immigration positions, campaigned for a wall at the southern border, and in his first weeks of office issued executive orders increasing deportation enforcement, blocking the admission of refugees, and banning travel from 7 majority-Muslim nations (Roberts, 2017; Shear & Cooper, 2018). In response, during Trump's first year, most Americans rejected the border wall (Pew Research Center, 2016); rejected the travel ban and said the US has a responsibility to accept refugees (Pew Research Center, 2017); and said legal immigration should not be decreased (Brenan, 2018). Likewise, the number of Americans who viewed immigration as a "good thing for this country" rose to 71% in 2017 and to 75% in 2018 (Brenan, 2018).

A pilot survey conducted in early 2017 (see Supplemental Materials for full details about method and results) queried 90% of the participants in our research participant pool (SonaSystems) at Cleveland State University and found the pool of participants: viewed President Trump as intolerant and strongly anti-immigrant; perceived strong public attention to diversity and tolerance; and indicated both strong personal attention to diversity/tolerance and strong interest in being more tolerant/accepting of immigrants. That salient set of prosocial cultural values is of critical importance, because prior research has found that when prosocial values such as tolerance (Greenberg et al., 1992; Vail, Courtney, et al., 2019), helping (Gailliot et al., 2008), or compassion (Vail, Arndt, Motyl, & Pyszczynski, 2009) are salient, MS can motivate defensive adherence to those values in the form of more tolerant/accepting sociopolitical attitudes.

Thus, Study 2 was conducted in 2017 during the first year of the Trump administration, with immigration policy attitudes as the target dependent variable. Participants were randomly assigned to either an MS or neutral prime, then primed to recall either autonomy-orientation or controlled-orientation experiences, and then asked to indicate their immigration policy attitudes. In light of the above analysis of the American tradition of welcoming/accepting immigrants, increased support for expanding (rather than restricting) immigration policy was conceptualized as a defense of American interests/values at home. The present analysis therefore hypothesized that MS should increase defense of tolerant and accepting immigration policy attitudes, but that defensive

response should be attenuated among those primed with autonomy-orientation.

Method

Participants

A total of 208 participants were recruited via a research exposure program at Cleveland State University, and those who participated were compensated with partial credit toward a departmental research exposure requirement. One participant discontinued the study immediately after signing the informed consent, and two did not complete the dependent measure, and so those three were excluded listwise. As seen in Table S1 (Supplemental Materials), the remaining sample of 205 participants tended to be Christian, White, Non-Hispanic, college-age females.

Materials and procedure

The present study was conducted with IRB approval; all protocol materials, data, and syntax are available at <https://osf.io/devtp/>. The study was listed on the recruitment website under the title "Social issues and public policy." Participants attended a laboratory session where they were greeted by an experimenter who obtained informed consent and administered materials in the following order.

Mortality salience

Following previous research (Das, Bushman, Bezemer, Kerkhof, & Vermeulen, 2009; Fransen, Fennis, Pruyn, & Das, 2008), participants were randomly assigned to complete one of two versions of a "Policy Importance" measure to either increase MS or a neutral topic. In each condition, participants were instructed to use the number 1–6 to rank the importance of six public policy issues. In the MS condition, the policy issues all primed death-related concepts: terrorism; war, or military intervention; abortion; gun control; capital punishment; and illness, healthcare, health insurance. In the neutral condition, the policy issues were not death-related but involved other pressing topics: trade regulation; tax reform; budget and economy; energy and oil; technology and infrastructure; and education. This comparison condition was chosen to test whether MS exerts effects beyond the salience of other concerning topics. Some prior work has found that similar death-related stimuli does increase death-thought accessibility (Steinman & Updegraff, 2015 for review and meta-analysis), and other research has validated the present method by

finding that it influences death-thought accessibility (Vail & Horner, 2019)—similar to other MS manipulations.

Autonomy salience manipulation

Adapting methods used previously in other domains (Greenberg et al., 1990; Routledge & Vess, 2019), participants were randomly assigned to complete one of two versions of a “Projective Life Attitudes Assessment.” In the self-determination salience condition, participants responded to the prompt, “Please briefly describe a time when you felt ‘self-determined,’ meaning a time in which you felt you were doing things or acting a certain way simply because you wanted to; not because of any outside pressure.” The controlling salience condition used a parallel prompt, but instead asked participants to, “Please briefly describe a time when you felt “controlled,” meaning a time in which you felt you were doing things or acting a certain way simply because of some outside pressure; not because you wanted to.”

Delay and distraction

Next, as in Study 1, participants completed the positive and negative affect schedule (PANAS; Watson & Clark, 1992) to provide the task-switching distraction as described in Study 1 (Pyszczynski et al., 1999; Routledge & Vess, 2019).

Worldview defense

Next, participants completed an 18-item (Likert type; 1 = *Strongly disagree*, 10 = *Strongly agree*) measure of immigration attitudes. Nine items measured support for restricting immigration based on economic, cultural, and security concerns, such as: “The US should restrict immigration because... immigrants take jobs from American citizens” (economic concern), “... we risk losing our uniquely American national, cultural, and religious identity” (cultural concern), and “...immigrants are a potential risk to our national security” (security concern). Nine items measured support for expanding immigration for economic, cultural, and security concerns, such as: “The US should expand immigration because... immigrants help our economy by consuming American goods and services” (economic concern), “...immigrants bring diverse cultural beliefs, perspectives, and identities to our country” (cultural concern), and “...immigrants often contribute to national security via military service” (security concern). The nine items measuring support for restriction formed a reliable composite ($\alpha = .88$) as did the nine items measuring support for expansion

($\alpha = .91$). Converging with the pilot survey, mean scores suggested that, on average, participants tended to agree with reasons to expand immigration ($M = 6.69$, $SD = 1.94$) more than with reasons to restrict it ($M = 3.06$, $SD = 1.57$). The expansion and restriction subscale composites were substantially negatively correlated ($r = -.46$). The restriction subscale items were reverse scored and combined with the expansion subscale items to form a single composite ($\alpha = .91$); item mean scores were computed such that higher positive scores reflected stronger overall support for expanding (vs. restricting) immigration.

Demographics

Participants completed a questionnaire recording age, sex, race, ethnicity, religious affiliation, political orientation, etc., and were fully debriefed.

Results

Study 2 used a 2 (MS vs. dental pain) x 2 (salience: autonomy vs. controlled) design examining accepting immigration attitudes (worldview defense). See Table 2 for descriptive statistics for worldview defense scores overall and in each condition. First, there was a trivial main effect of MS such that worldview defense was higher in the MS than the neutral condition ($d = .14$, $SE = .14$), and a trivial main effect of autonomy prime such that it was lower in the autonomy than the controlled condition ($d = -.15$, $SE = .14$).

To better understand the nature of the interaction, we examined the conditional pairwise comparisons of each of the two variables. First we examined the conditional effects of MS. In the controlled prime condition, accepting immigration attitude scores were higher in the MS condition than the neutral condition ($d = .45$, $SE = .21$). In the autonomy prime condition, worldview defense did not appear to meaningfully

Table 2. Worldview defense (support for expanding vs. restricting immigration) descriptive statistics overall and in each condition of Study 2.

	<i>n</i>	<i>M</i>	<i>SD</i>	Skewness (<i>SE</i>)	Kurtosis (<i>SE</i>)
Overall sample	205	7.32	1.50	-.34 (.17)	-.58 (.34)
MS main effect pattern					
MS condition	102	7.42	1.39	-.11 (.24)	-.96 (.47)
Neutral condition	103	7.21	1.60	-.45 (.24)	-.54 (.47)
Autonomy main effect pattern					
Autonomy condition	108	7.21	1.45	-.35 (.23)	-.51 (.46)
Controlled condition	97	7.43	1.55	-.38 (.25)	-.62 (.49)
Interaction pattern					
MS, Controlled	49	7.77	1.40	-.05 (.34)	-1.34 (.67)
Neutral, Controlled	48	7.09	1.64	-.46 (.34)	-.78 (.67)
MS, Autonomy	53	7.11	1.32	-.29 (.33)	-1.01 (.64)
Neutral, Autonomy	55	7.31	1.57	-.45 (.32)	-.26 (.63)

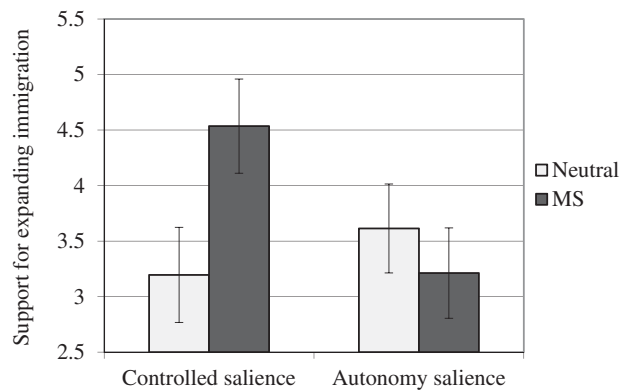


Figure 2. MS had higher support for expanding immigration in the controlled prime condition, but not in the autonomy prime condition. The error bars represent standard error.

differ between the MS and neutral condition ($d = -.14$, $SE = .19$). Next, we examined the conditional effects of autonomy prime. When in the neutral condition, worldview defense did not meaningfully differ between the controlled and autonomy condition ($d = -.14$, $SE = .20$). But when reminded of death, worldview defense was higher in the controlled condition than the autonomy condition ($d = .49$, $SE = .20$) (see Figure 2).

Discussion

A pilot survey conducted in early 2017, during the first months of the Trump Presidency, found that our participant pool a) perceived strong public attention to diversity and tolerance and b) were strongly personally interested in being more tolerant and accepting of immigrants. Study 2, conducted among that same pool during that same period in 2017, found that worldview defense of those salient cultural values of tolerance and acceptance of immigrants was higher in the MS (vs. neutral) condition. Additionally, and most importantly, Study 2 results were also consistent with the present hypothesis that worldview defense would not be higher in the MS (vs. neutral) condition when primed with autonomy-orientation concepts. Specifically, support for expanding (vs. restricting) immigration was higher in the MS (vs. neutral) condition when given the controlled-prime, whereas that effect was attenuated in the autonomy-prime condition. Further, in the MS condition, worldview defensiveness was lower in the autonomy (vs. controlled) prime.

General discussion

The present research tested the hypothesis that although MS typically motivates worldview

defensiveness, priming an autonomy orientation should attenuate that defensiveness. Results from two studies supported that hypothesis. In the controlled-orientation conditions, American participants reminded of death (vs. other topics) had higher worldview defense in the form of support for militaristic defense of American interests in Syria (Study 1) and by upholding salient American values of tolerance and acceptance of immigrants (Study 2). However, in each study, those defensive responses to MS were attenuated among participants in the autonomy-orientation prime conditions. These findings offer several novel contributions to the growing body of research on the existential dynamics of defense and growth.

Existential threat and worldview defense

First, the present findings converge with and expand upon a large body of research finding that death awareness can motivate both hostile and prosocial worldview defenses. Study 1 converges with prior research, such as that described in the introduction, finding that MS can motivate support for military defense of one's national interests. The US had become militarily involved in the Syrian civil war following the 2011 Arab Spring protests, with American leaders portraying that involvement as the defense of American values and regional interests against Iran, Russia, Al-Qaeda, and ISIL. Thus, in the controlled-orientation prime condition, Study 1, conducted in 2015, found that American support for US militarism in Syria was higher in the MS (vs. pain) condition. This supports the TMT idea that death awareness can motivate people to more fervently defend their worldviews, including militaristic defense of national interests.

Additionally, the present analysis also noted that although worldview defense may sometimes involve aggressive defense of one's national interests, it also often involves the defense of prosocial values such as tolerance and compassion (Vail et al., 2012). Prior work has found that when the value of tolerance was salient, MS increased Americans' political tolerance and acceptance of culturally-dissimilar others (Greenberg et al., 1992; Vail, Courtney, et al., 2019). Study 2 converges with these prior studies. Americans have a long history of valuing tolerance and acceptance of immigrants, and following the election of Donald Trump as President, Americans largely rejected nativist restrictions on immigration policies and instead viewed immigration as a gain for the country (Brenan, 2018; Pew Research Center, 2016;

Pew Research Center, 2017). Similarly, a pilot survey conducted in early 2017, during the first year of the Trump Presidency, found that our participant pool perceived strong public attention to diversity and tolerance and were strongly personally interested in being more tolerant and accepting of immigrants. To be clear: TMT suggests that if a particular worldview value is salient/dominant then MS will motivate defense of that value, and the pilot study determined that acceptance/tolerance of immigrants was a salient value. In that light, Study 2, conducted during that same period in 2017, found that in the controlled-orientation condition, American defense of those salient cultural values of tolerance and acceptance in the form of support for expanding (vs. restricting) immigration was higher in the MS (vs. neutral) condition.

Second, the present research also informs the impact of existential threat on political ideologies. The uncertainty-threat model (Jost, Glaser, Kruglanski, & Sulloway, 2003; Jost & Napier, 2012) suggests that death awareness is a form of uncertainty-threat that motivates efforts to conserve the status quo, producing a politically conservative shift. From that perspective, one might be tempted to conclude that the present findings suggest that MS caused conservative shift, if one assumes that support for military action in Syria was a conservative position and if one views tolerance and acceptance of immigrants as a conservative expression of traditional American values. However, that interpretation encounters at least two obstacles. One is that it was progressive Democrat President Obama who led the American military involvement in Syria, and conservative Republican President Trump who advocated more *restrictive* (not more expansive) immigration policies. Another is that exploratory analyses⁴ of participants' political orientation in the present Studies 1 and 2 show that MS did not cause a substantive conservative or liberal shift. Such points suggest existential threat may not cause shifts in political ideological content, per se, but rather cause people to more strongly defend and uphold salient cultural beliefs and identities regardless of where they might fall on the political spectrum (Greenberg & Jonas, 2003; see also Burke, Kosloff, & Landau, 2013). Additionally, we also analyzed the 3-way Continuous (political orientation) x 2 (MS vs. non-MS) x 2 (autonomy vs. controlled) interactions; however, there was only a trivial 3-way interaction effect in Study 1 ($R^2\Delta = .004$) and Study 2 ($R^2\Delta = .003$). That is, the present research found that MS did not substantively impact participants' political orientation but did motivate them to defend and

uphold salient national interests and cultural values at home and abroad.

Self-determination and existential nondefensiveness

At least three theoretical perspectives suggested people might be able to manage the awareness of death by engaging life as the self-determined author of their own actions. Building upon those perspectives, the present work addressed the previously-untested hypothesis that priming autonomy orientation would attenuate MS-induced defensiveness. Indeed, MS motivated worldview defensive responses in both Studies 1 and 2; yet, in both studies, that effect was attenuated among participants in the autonomy-orientation prime conditions. These findings converge with and extend previous research relevant to each of these perspectives.

First, Becker (1973) argued that as people mature, they encounter and often internalize surrounding sociocultural beliefs, such that a self-determined orientation will naturally orient people to affirm and abide by their death-denying cultural systems of meaning and self-worth. From this view, although MS may motivate worldview defensiveness, activating an autonomy orientation would potentially affirm those internalized defensive buffers and attenuate the need for additional worldview defensiveness. Whereas a variety of other studies have found, for example, that MS increases death-thought and worldview defensiveness unless participants affirmed their worldview belief systems (Schmeichel & Martens, 2005; Vail et al., 2018), the present work goes further to find that simply priming the concept (Study 1) or recalled experience (Study 2) of autonomy orientation can likewise attenuate existential defensiveness.

Second, some have argued that death awareness represents an existential threat because it threatens active being, in the sense that one will cease to be a living, vital, self-aware, freely-acting agent in the world (Choron, 1964; Yalom, 1980). Thus, an autonomy orientation may mitigate the impact of death awareness because self-determination represents full-fledged, vital, self-aware, freely-acting engagement of life (Ryan & Deci, 2004b); another possibility is that autonomy may bring one's focus to the here-and-now of one's experience, with a focus on the present, potentially inhibiting an awareness of the concept of mortality which (one would hope) is more about a future state than a present one.

Third, and relatedly, SDT research suggests that autonomy orientations are more growth-oriented—

better able to cope with stressors, less defensive, and more open (Vansteenkiste & Ryan, 2013). Prior work also shows that people who value personal growth-oriented goals rather than externally-introjected goals (which tends to be associated with autonomy-orientations, Kasser & Ryan, 1996) experience reduced death anxiety and greater death acceptance (Van Hiel & Vansteenkiste, 2009) and do not respond to MS with financial greed or nationalistic worldview defensiveness (Cozzolino et al., 2004; Vail, Horner, & Conti, 2019). The present work converges with each of the above prior studies and yet goes further by finding that priming self-determination, specifically, attenuates MS-induced defensiveness.

Defensive and growth-oriented existential dynamics: Implications and future directions

Notably, some of the above perspectives suggest self-determined orientation, at least in part, serves a defensive/protective function by naturally affirming death-denying cultural beliefs, and some suggest it serves a more growth-oriented function. Although perhaps vogue to view existential defense and growth as dialectically opposing forces, it is also possible they may sometimes act in concert as complementary forces. In the former dynamic, existential anxiety may sometimes motivate defenses that appear to inhibit growth-oriented open-mindedness, and growth-oriented exploration may sometimes challenge one's familiar defenses. But under the latter dynamic, it is also possible that certain defensive protections can produce a sense of security, thus reducing anxiety and perception of threat, and in the same stroke enabling individuals to boldly venture out to explore the world, openly engage uncomfortable situations and information, and willingly build new experiences and grow as a person.

It is possible that self-determination may be one such set of conditions that serves those dual motivational functions—it may serve defensive/protective *and* growth-oriented functions. Indeed, prior research has found that self-determination is associated with well-being, openness, and personal growth (see Ryan & Deci, 2017 for comprehensive review), and the present findings could potentially be taken as evidence that self-determination also helps serve a defensive/protective function, mitigating the effect of MS on subsequent worldview defenses. But before confidently drawing that conclusion, future research on the topic should further explore the role of self-determination in other existential defensive/protective and growth-oriented dynamics as well. For example, future work

could explore 1) whether self-determination (and its ingredients of autonomy, competence, and relatedness) can help mitigate the effects of MS on increased death-thought accessibility, death anxiety, and undermined well-being (e.g., satisfaction with life, happiness); 2) whether undermining autonomy (e.g., controlled-orientation) undermines those protections and thus increases death-thought accessibility; 3) whether individual differences in autonomy (vs. controlled) orientations, rather than manipulated/primed orientations, similarly mitigate death-related concerns and worldview defenses; 4) whether MS motivates defensive efforts to experience self-determined orientations, goals, and activities; and 5) whether MS motivates self-determined individuals to increase growth-oriented motivations to explore novel social, intellectual, and cultural information and experiences. If so, it may be appropriate to begin moving beyond TMT and SDT to develop and empirically test more comprehensive and unifying perspectives on existential motivation, capable of accounting for both dialectical and complementary relationships between defense and growth orientations (e.g., Greenberg, Pyszczynski, & Solomon, 1995; Pyszczynski, Greenberg, & Arndt, 2012).

The present work also challenges the common, though perhaps tacit, assumptions that MS-induced defensiveness is “bad” whereas self-determined orientation is “good.” Indeed, although death awareness does sometimes motivate aggressive defense of salient cultural beliefs, values, and identities, a growing body of work finds it can also motivate defense of salient prosocial attitudes and behaviors as well—including compassion, empathy, helping, love, and charitable giving (Vail et al., 2012). The present work also found that MS can motivate both support for military actions (a hostile defense of one's cultural system) and support for more expansive and welcoming immigration policy (a prosocial defense of the cultural value of tolerance). Likewise, some have urged caution about the perhaps overly-optimistic “humanistic” view of self-determination; as Pyszczynski et al., (2000) noted, “... autonomous functioning is no guarantee that a person will behave well toward others...” (p. 302). Indeed, the present work found that in the pain (Study 1) and neutral (Study 2) conditions, the autonomy (vs. controlled) prime had no impact on attitudes about militarism or pro/anti-immigration policy; also, in Study 2, the autonomy prime attenuated the effect of MS on tolerance/acceptance in immigration policy attitudes. In other words, regarding this specific research: although MS may impact the defense of

one's sociocultural worldviews, and autonomy orientation may alter that process, autonomy orientation on its own (in the non-MS conditions) may not necessarily impact foreign policy attitudes or immigration attitudes. Future research should further parse the impacts of existential defensiveness and growth-orientations on both the light and dark sides of social functioning.

In addition to the implications and future directions outlined above, it is worth mentioning a methodological design decision. Previous research has found the autonomy primes to differ from both no-prime and controlling conditions, so in both studies we chose efficient research designs that included just the autonomy and controlling conditions. The inclusion of a no-prime condition would have, of course, enabled us to pinpoint the degree to which the autonomy prime mitigated, or the controlling prime exacerbated, the MS effects in the two studies. However, we would like to note that most previous TMT studies have tested the effects of MS compared to other aversive or neutral topics (Routledge & Vess, 2019 for review) in the absence of an SDT-relevant prime condition (i.e., similar to what would be an SDT no-prime condition), and that such MS effects are consistent with the pattern of MS effects obtained in the controlling prime conditions of the present research. Thus, one might infer that if the controlling prime conditions in the present studies were replaced with a no-prime or neutral comparison condition, MS would still be expected to increase worldview defense as was seen in the present studies. In contrast, the notable finding here is that autonomy attenuated MS effects on worldview defense. Nevertheless, future research may also consider comparing the effects of an autonomy prime against both a controlling and no-prime condition.

Conclusion

As was described at the outset, people must often navigate a world that makes salient mortality-related concerns, influences their sense of personal freedoms and self-determination, and affords the expression of attitudes about various foreign and domestic policies related to their cultural identities, beliefs, and values. In that light, the present research found support for the TMT idea that increased mortality-awareness can motivate increased support for American military interests and prosocial values at home and abroad. More importantly, however, the present work also found that priming self-determination orientations

attenuated those effects, consistent with the idea that the concept and recalled experience of autonomy/self-determined orientation might serve a protective function (mitigating existential defensiveness) in addition to its well-known growth-oriented functions.

Notes

1. As is often done in the SDT literature, "autonomous" and "self-determined" are here used interchangeably.
2. For the curious reader, we also examined the effects on the various PANAS subscales in both Studies 1 and 2, but there were no substantive main effects of MS nor autonomy prime nor interactions (see Tables S2 and S4 in the Supplemental Materials for details).
3. As seen in Table S2 of the Supplemental Materials, analysis of the PANAS hostility subscale found there was no main effect of MS ($\eta_p^2 = .002$). However, we also note that the PANAS was measured immediately after the MS manipulation, whereas death-related primes followed by delay tasks typically produce both increased death-thought accessibility (Steinman & Updegraff, 2015) and increased worldview defense (Burke, Kosloff, & Landau, 2013; Burke, Martens, & Faucher, 2010; Martens, Burke, Schimel, & Faucher, 2011), meaning that the PANAS hostility subscale was probably not in a position where it could have captured changes in worldview defensive hostility. We also note that the PANAS was administered prior to the autonomy manipulation, making it impossible to analyze a 2 (MS vs. pain) x 2 (autonomy vs. controlled) interaction comparable to the analyses on worldview defense.
4. Analyzing political orientation in Study 1, there were only trivially small effects of MS ($d = -.12$, $SE = .16$), autonomy prime ($d = -.19$, $SE = .16$), and the interaction patterns. Political orientation did not meaningfully differ between the MS and the pain condition in the controlled prime condition ($d = -.08$, $SE = .22$) nor in the autonomy prime condition ($d = -.15$, $SE = .25$); it also did not meaningfully differ between the controlled and autonomy condition in the pain condition ($d = .16$, $SE = .21$) nor the MS condition ($d = .23$, $SE = .25$). Study 2 also found only trivially small effects of MS ($d = .15$, $SE = .14$), autonomy prime ($d = .01$, $SE = .14$), and the interaction patterns. Political orientation did not meaningfully differ between the MS and the neutral condition in the controlled prime condition ($d = .07$, $SE = .20$) nor in the autonomy prime condition ($d = .24$, $SE = .19$); it also did not meaningfully differ between the controlled and autonomy condition in the neutral condition ($d = .07$, $SE = .20$) nor the MS condition ($d = -.07$, $SE = .20$). We hasten to note, however, that in each study political orientation was measured at the end of the study as part of the demographics and was not counterbalanced with the dependent variable, so it is possible the dependent measure disrupted a potential effect on the subsequently-measured political orientation measure.

References

- Amabile, T. M., Dejong, W., & Lepper, M. R. (1976). Effects of externally imposed deadlines on subsequent intrinsic motivation. *Journal of Personality and Social Psychology*, 34(1), 92–98. doi:10.1037/0022-3514.34.1.92
- Amoura, C., Berjot, S., & Gillet, N. (2013). Desire for control: Its effect on needs satisfaction and autonomous motivation. *Revue Internationale de Psychologie Sociale*, 26(2), 55–71.
- Becker, E. (1971). *The birth and death of meaning: An interdisciplinary perspective on the problem of man* (2nd ed.). New York, NY: Free Press. (1972-22983-000).
- Becker, E. (1973). *The denial of death*. New York, NY: Free Press. (1976-00780-000).
- Boyd, P., Morris, K. L., & Goldenberg, J. L. (2017). Open to death: A moderating role of openness to experience in terror management. *Journal of Experimental Social Psychology*, 71, 117–127. doi:10.1016/j.jesp.2017.03.003
- Brenan, M. (2018). Record-high, 75% of Americans say immigration is good thing. Retrieved from <https://news.gallup.com/poll/235793/record-high-americans-say-immigration-good-thing.aspx>.
- Brown, N. O. (1959). *Life against death: The psychoanalytical meaning of history*. Oxford, UK: Wesleyan University Press. (1959-07194-000).
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822–848. doi:10.1037/0022-3514.84.4.822
- Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry*, 18(4), 211–237. doi:10.1080/10478400701598298
- Burke, B. L., Kosloff, S., & Landau, M. J. (2013). Death goes to the polls: A meta-analysis of mortality salience effects on political attitudes. *Political Psychology*, 34(2), 183–200. doi:10.1111/pops.12005
- Burke, B. L., Martens, A., & Faucher, E. H. (2010). Two decades of terror management theory: A meta-analysis of mortality salience research. *Personality and Social Psychology Review*, 14(2), 155–195. doi:10.1177/1088868309352321
- Camus, A. (1957). *Exile and the kingdom* (J. O'Brien, Trans.). New York, NY: Random House.
- Choron, J. (1964). *Modern man and mortality*. New York, NY: Macmillan.
- Cozzolino, P. J., Staples, A. D., Meyers, L. S., & Samboceti, J. (2004). Greed, death, and values: From terror management to transcendence management theory. *Personality and Social Psychology Bulletin*, 30(3), 278–292. doi:10.1177/0146167203260716
- Das, E., Bushman, B. J., Bezemer, M. D., Kerkhof, P., & Vermeulen, I. E. (2009). How terrorism news reports increase prejudice against outgroups: A terror management account. *Journal of Experimental Social Psychology*, 45(3), 453–459. doi:10.1016/j.jesp.2008.12.001
- DeCharms, R. C. (1968). *Personal causation: The internal affective determinants of behavior*. New York, NY: Academic Press.
- Deci, E. L. (1975). *Intrinsic Motivation*. New York: Plenum Press. doi:10.1007/978-1-4613-4446-9
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125(6), 627–668. doi:10.1037//0033-2909.125.6.627
- Deci, E. L., & Ryan, R. M. (1987). The support of autonomy and the control of behavior. *Journal of Personality and Social Psychology*, 53(6), 1024–1037. doi:10.1037/0022-3514.53.6.1024
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. doi:10.1207/S15327965PLI1104_01
- Enzle, M. E., & Anderson, S. C. (1993). Surveillant intentions and intrinsic motivation. *Journal of Personality and Social Psychology*, 64(2), 257–266. doi:10.1037//0022-3514.64.2.257
- Fransen, M. L., Fennis, B. M., Pruyn, A. D. T., & Das, E. (2008). Rest in peace? Brand-induced mortality salience and consumer behavior. *Journal of Business Research*, 61(10), 1053–1061. doi:10.1016/j.jbusres.2007.09.020
- Fritsche, I., Jonas, E., & Fankhänel, T. (2008). The role of control motivation in mortality salience effects on in group support and defense. *Journal of Personality and Social Psychology*, 95(3), 524–541. doi:10.1037/a0012666
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331–362. doi:10.1002/job.322
- Gailliot, M. T. (2012). Mortality salience and metabolism: Glucose drinks reduce worldview defense caused by mortality salience. *Psychology*, 03(11), 991–996. doi:10.4236/psych.2012.311149
- Gailliot, M. T., Stillman, T. F., Schmeichel, B. J., Maner, J. K., & Plant, E. A. (2008). Mortality salience increases adherence to salient norms and values. *Personality and Social Psychology Bulletin*, 34(7), 993–1003. doi:10.1177/0146167208316791
- Greenberg, J., & Jonas, E. (2003). Psychological motives and political orientation—The left, the right, and the rigid: Comment on Jost et al. (2003). *Psychological Bulletin*, 129(3), 376–382. doi:10.1037/0033-2909.129.3.376
- Greenberg, J., Martens, A., Jonas, E., Eisenstadt, D., Pyszczynski, T., & Solomon, S. (2003). Psychological defense in anticipation of anxiety: Eliminating the potential for anxiety eliminates the effect of mortality salience on worldview defense. *Psychological Science*, 14(5), 516–519. doi:10.1111/1467-9280.03454
- Greenberg, J., Pyszczynski, T., & Solomon, S. (1995). Toward a dual-motive depth psychology of self and social behavior. In M. H. Kernis & M. H. Kernis (Eds.), *Efficacy, agency, and self-esteem*. (pp. 73–99). New York, NY: Plenum Press. (1995-97476-004).
- 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 on reactions to those who threaten or bolster the cultural worldview. *Journal of Personality and Social Psychology*, 58(2), 308–318. doi:10.1037/0022-3514.58.2.308
- Greenberg, J., Simon, L., Pyszczynski, T., Solomon, S., & Chatel, D. (1992). Terror management and tolerance: Does mortality salience always intensify negative

- reactions to others who threaten one's worldview? *Journal of Personality and Social Psychology*, 63(2), 212–220. doi:10.1037/0022-3514.63.2.212
- Greenberg, J., Vail, K. E., & Pyszczynski, T. (2014). Terror management theory and research: How the desire for death transcendence drives our strivings for meaning and significance. In *Advances in motivation science* (Vol 1; ISSN: 2215-0919 (Print), pp. 85–134). San Diego, CA: Elsevier Academic Press. (2014-47682-003).
- Hagger, M. S., & Chatzisarantis, N. L. D. (2007). Advances in self-determination theory research in sport and exercise. *Psychology of Sport and Exercise*, 8(5), 597–599. doi:10.1016/j.psychsport.2007.06.003
- 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(1), 24–36. doi:10.1037/0022-3514.72.1.24
- Hayes, J., Schimel, J., Arndt, J., & Faucher, E. H. (2010). A theoretical and empirical review of the death-thought accessibility concept in terror management research. *Psychological Bulletin*, 136(5), 699–739. doi:10.1037/a0020524
- Hirschberger, G., Pyszczynski, T., & Ein-Dor, T. (2009). Vulnerability and vigilance: Threat awareness and perceived adversary intent moderate the impact of mortality salience on intergroup violence. *Personality and Social Psychology Bulletin*, 35(5), 597–607. doi:10.1177/0146167208331093
- Hodgins, H. S., Brown, A. B., & Carver, B. (2007). Autonomy and control motivation and self-esteem. *Self and Identity*, 6(2-3), 189–208. doi:10.1080/15298860601118769
- Hodgins, H. S., Koestner, R., & Duncan, N. (1996). On the compatibility of autonomy and relatedness. *Personality and Social Psychology Bulletin*, 22(3), 227–237. doi:10.1177/0146167296223001
- Hodgins, H. S., Weibust, K. S., Weinstein, N., Shiffman, S., Miller, A., Coombs, G., & Adair, K. C. (2010). The cost of self-protection: Threat response and performance as a function of autonomous and controlled motivations. *Personality and Social Psychology Bulletin*, 36(8), 1101–1114. doi:10.1177/0146167210375618
- Hodgins, H. S., Yacko, H. A., & Gottlieb, E. (2006). Autonomy and nondefensiveness. *Motivation and Emotion*, 30(4), 283–293. doi:10.1007/s11031-006-9036-7
- Jonas, E., Martens, A., Niesta Kayser, D., Fritsche, I., Sullivan, D., & Greenberg, J. (2008). Focus theory of normative conduct and terror-management theory: The interactive impact of mortality salience and norm salience on social judgment. *Journal of Personality and Social Psychology*, 95(6), 1239–1251. doi:10.1037/a0013593
- Jones, R. P., Cox, D., Cooper, B., & Rachel, L. (2016). How Americans view immigrants and what they want from immigration reform: Findings from the 2015 American Values Atlas. Retrieved from <https://www.prii.org/research/poll-immigration-reform-views-on-immigrants/>.
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin*, 129(3), 339–375. doi:10.1037/0033-2909.129.3.339
- Jost, J. T., & Napier, J. L. (2012). The uncertainty-threat model of political conservatism. In M. A. Hogg, D. L. Blaylock, M. A. Hogg, & D. L. Blaylock (Eds.), *Extremism and the psychology of uncertainty* (pp. 90–111). New York: Wiley-Blackwell. (2012-03155-006).
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, 22(3), 280–287. doi:10.1177/0146167296223006
- Kennedy, J. F. (1964). *A nation of immigrants* (Harper Perennial reprint edition (2008)). New York, NY: Harper & Rowe.
- Knee, C. R., & Zuckerman, M. (1996). Causality orientations and the disappearance of the self-serving bias. *Journal of Research in Personality*, 30(1), 76–87. doi:10.1006/jrpe.1996.0005
- Lepper, M. R., & Greene, D. (1975). Turning play into work: Effects of adult surveillance and extrinsic rewards on children's intrinsic motivation. *Journal of Personality and Social Psychology*, 31(3), 479–486. doi:10.1037/h0076484
- Levesque, C., & Pelletier, L. G. (2003). On the investigation of primed and chronic autonomous and heteronomous motivational orientations. *Personality and Social Psychology Bulletin*, 29(12), 1570–1584. doi:10.1177/0146167203256877
- Lynch, M. F., Plant, R. W., & Ryan, R. M. (2005). Psychological needs and threat to safety: implications for staff and patients in a psychiatric hospital for youth. *Professional Psychology: Research and Practice*, 36(4), 415–425. doi:10.1037/0735-7028.36.4.415
- Martens, A., Burke, B. L., Schimel, J., & Faucher, E. H. (2011). Same but different: Meta-analytically examining the uniqueness of mortality salience effects. *European Journal of Social Psychology*, 41(1), 6–10. doi:10.1002/ejsp.767
- McGregor, H. A., Lieberman, J. D., Greenberg, J., Solomon, S., Arndt, J., Simon, L., & Pyszczynski, T. (1998). Terror management and aggression: Evidence that mortality salience motivates aggression against worldview-threatening others. *Journal of Personality and Social Psychology*, 74(3), 590–605. doi:10.1037/0022-3514.74.3.590
- Mikulincer, M., Florian, V., & Hirschberger, G. (2003). The existential function of close relationships: Introducing death into the science of love. *Personality and Social Psychology Review*, 7(1), 20–40. doi:10.1207/S15327957PSPR0701_2
- Motyl, M., Hart, J., Pyszczynski, T., Weise, D., Maxfield, M., & Siedel, A. (2011). Subtle priming of shared human experiences eliminates threat-induced negativity toward Arabs, immigrants, and peace-making. *Journal of Experimental Social Psychology*, 47(6), 1179–1184. doi:10.1016/j.jesp.2011.04.010
- Niemiec, C. P., Brown, K. W., Kashdan, T. B., Cozzolino, P. J., Breen, W. E., Levesque-Bristol, C., & Ryan, R. M. (2010). Being present in the face of existential threat: The role of trait mindfulness in reducing defensive responses to mortality salience. *Journal of Personality and Social Psychology*, 99(2), 344–365. doi:10.1037/a0019388
- Niemiec, C. P., & Ryan, R. M. (2013). What makes for a life well lived? Autonomy and its relation to full functioning and organismic wellness. In S. A. David, I.

- Boniwell, & A. Conley Ayers (Eds.), *The Oxford handbook of happiness*. (pp. 214–226). New York, NY: Oxford University Press. (2013-08793-016).
- Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The path taken: Consequences of attaining intrinsic and extrinsic aspirations in post-college life. *Journal of Research in Personality*, 43(3), 291–306. doi:10.1016/j.jrp.2008.09.001
- Norenzayan, A., Dar-Nimrod, I., Hansen, I. G., & Proulx, T. (2009). Mortality salience and religion: Divergent effects on the defense of cultural worldviews for the religious and the non-religious. *European Journal of Social Psychology*, 39(1), 101–113. doi:10.1002/ejsp.482
- Obama Syria speech. (2013, September 11). *Full text*. Retrieved from <https://www.bbc.com/news/world-us-canada-24044553>.
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J., & Brière, N. M. (2001). Associations among perceived autonomy support, forms of self-regulation, and persistence: A prospective study. *Motivation and Emotion*, 25(4), 279–306.
- Pew Research Center. (2014). *Support for U.S. Campaign against ISIS*. Retrieved from <http://www.people-press.org/2014/10/22/support-for-u-s-campaign-against-isis-doubts-about-its-effectiveness-objectives/>.
- Pew Research Center. (2016). *On immigration policy, partisan differences but also some common ground*. (p. 15). Retrieved from <https://www.people-press.org/2016/08/25/on-immigration-policy-partisan-differences-but-also-some-common-ground/>
- Pew Research Center (2017). *In first month, views of Trump are already strongly felt, deeply polarized*. (p. 47). Retrieved from <https://www.people-press.org/2017/02/16/in-first-month-views-of-trump-are-already-strongly-felt-deeply-polarized/>
- Pyszczynski, T., Abdollahi, A., Solomon, S., Greenberg, J., Cohen, F., & Weise, D. (2006). Mortality salience, martyrdom, and military might: The great Satan versus the axis of evil. *Personality and Social Psychology Bulletin*, 32(4), 525–537. doi:10.1177/0146167205282157
- Pyszczynski, T., Greenberg, J., & Arndt, J. (2012). Freedom versus fear revisited: An integrative analysis of the dynamics of the defense and growth of self. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity*. (pp. 378–404). New York, NY: Guilford Press. (2012-10435-018).
- 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(4), 835–845. doi:10.1037/0033-295X.106.4.835
- Pyszczynski, T., Greenberg, J., & Solomon, S. (2000). Toward a dialectical analysis of growth and defensive motives. *Psychological Inquiry*, 11(4), 301–305. (2001-03012-009).
- Pyszczynski, T., Motyl, M., Vail, K. E., Hirschberger, G., Arndt, J., & Kesebir, P. (2012). Drawing attention to global climate change decreases support for war. *Peace and Conflict: Journal of Peace Psychology*, 18(4), 354–368. doi: 10.1037/a0030328
- Quested, E., Bosch, J. A., Burns, V. E., Cumming, J., Ntoumanis, N., & Duda, J. L. (2011). Basic psychological need satisfaction, stress-related appraisals, and dancers' cortisol and anxiety responses. *Journal of Sport and Exercise Psychology*, 33(6), 828–846. doi:10.1123/jsep.33.6.828
- Radel, R., Sarrazin, P., Jehu, M., & Pelletier, L. (2013). Priming motivation through unattended speech. *British Journal of Social Psychology*, 52(4), 763–772. doi:10.1111/bjso.12030
- Radel, R., Sarrazin, P., & Pelletier, L. (2009). Evidence of subliminally primed motivational orientations: The effects of unconscious motivational processes on the performance of a new motor task. *Journal of Sport and Exercise Psychology*, 31(5), 657–674. doi:10.1123/jsep.31.5.657
- Rank, O. (1936). *Will therapy and truth and reality*. New York, NY: Alfred A. Knopf.
- Reeve, J. (2002). Self-determination theory applied to educational settings. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research*. (pp. 183–203). Rochester, NY: University of Rochester Press. (2002-01702-009).
- Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of Educational Psychology*, 98(1), 209–218. doi:10.1037/0022-0663.98.1.209
- Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin*, 26(4), 419–435. doi:10.1177/0146167200266002
- Roberts, R. (2017, February 11). *Immigration raids are spreading fear and panic after Trump's crack down order*. Retrieved from <http://www.independent.co.uk/news/world/americas/immigration-raids-us-donald-trump-crackdown-illegal-immigrants-order-deportation-a7574796.html>.
- 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(4), 681–690. doi:10.1037//0022-3514.57.4.681
- Rothschild, Z. K. (2008). *More human but less humane: The effect of morality salience and perceived similarity on infra-humanization and support for violence against out-groups* (Unpublished Masters Thesis). University of Colorado, Colorado Springs, CO.
- Routledge, C., Arndt, J., & Sheldon, K. M. (2004). Task engagement after mortality salience: The effects of creativity, conformity and connectedness on worldview defense. *European Journal of Social Psychology*, 34(4), 477–487. doi:10.1002/ejsp.209
- Routledge, C., & Vess, M. (2019). *Handbook of terror management*. Amsterdam, The Netherlands: Elsevier.
- Ryan, R. M., & Deci, E. L. (2004a). Autonomy is no illusion: Self-determination theory and the empirical study of authenticity, awareness, and will. In J. Greenberg, S. L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 449–479). New York, NY: Guilford Press. (2004-21900-028).
- Ryan, R. M., & Deci, E. L. (2004b). Avoiding death or engaging life as accounts of meaning and culture: Comment on Pyszczynski et al. (2004). *Psychological Bulletin*, 130(3), 473–477. doi:10.1037/0033-2909.130.3.473

- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. New York, NY: Guilford Press.
- Ryan, R. M., Deci, E. L., & Vansteenkiste, M. (2016). Autonomy and autonomy disturbances in self-development and psychopathology: Research on motivation, attachment, and clinical process. In D. Cicchetti (Ed.), *Developmental psychopathology: Theory and method* (Vol. 1, 3rd ed. pp. 385–438). Hoboken, NJ: John Wiley & Sons Inc. (2016-25392-009).
- Ryan, R. M., & Frederick, C. (1997). On energy, personality, and health: subjective vitality as a dynamic reflection of well-being. *Journal of Personality*, 65(3), 529–565. doi:10.1111/j.1467-6494.1997.tb00326.x
- Schimmel, J., Wohl, M. J. A., & Williams, T. (2006). Terror management and trait empathy: Evidence that mortality salience promotes reactions of forgiveness among people with high (vs. low) trait empathy. *Motivation and Emotion*, 30(3), 214–227. doi:10.1007/s11031-006-9040-y
- Schmeichel, B. J., Gailliot, M. T., Filardo, E.-A., McGregor, I., Gitter, S., & Baumeister, R. F. (2009). Terror management theory and self-esteem revisited: The roles of implicit and explicit self-esteem in mortality salience effects. *Journal of Personality and Social Psychology*, 96(5), 1077–1087. doi:10.1037/a0015091
- Schmeichel, B. J., & Martens, A. (2005). Self-affirmation and mortality salience: Affirming values reduces worldview defense and death-thought accessibility. *Personality and Social Psychology Bulletin*, 31(5), 658–667. doi:10.1177/0146167204271567
- Shear, M. D., & Cooper, H. (2018, January 20). Trump Bars Refugees and Citizens of 7 Muslim countries. *The New York Times*. Retrieved from <https://www.nytimes.com/2017/01/27/us/politics/trump-syrian-refugees.html>.
- Sheldon, K. M., Gunz, A., Nichols, C. P., & Ferguson, Y. (2010). Extrinsic value orientation and affective forecasting: Overestimating the rewards, underestimating the costs. *Journal of Personality*, 78(1), 149–178. doi:10.1111/j.1467-6494.2009.00612.x
- Slackman, M. (2011, March 25). Syrian troops open fire on protesters in several cities. *The New York Times*. Retrieved from <https://www.nytimes.com/2011/03/26/world/middleeast/26syria.html>.
- Smeltz, D., Kafura, C., & Martin, K. (2016). Americans Support Limited Military Action in Syria against ISIS. Chicago Council on Global Affairs, 1–3.
- Soenens, B., Berzonsky, M. D., Vansteenkiste, M., Beyers, W., & Goossens, L. (2005). Identity styles and causality orientations: In search of the motivational underpinnings of the identity exploration process. *European Journal of Personality*, 19(5), 427–442. doi:10.1002/per.551
- Steinman, C. T., & Updegraff, J. A. (2015). Delay and death-thought accessibility: A meta-analysis. *Personality and Social Psychology Bulletin*, 41(12), 1682–1696. doi:10.1177/0146167215607843
- Syria. (2016, March 11). *Syria: The story of the conflict*. Retrieved from <https://www.bbc.com/news/world-middle-east-26116868>.
- Vail, K. E., Arndt, J., Motyl, M., & Pyszczynski, T. (2009). Compassionate values and presidential politics: Mortality salience, compassionate values, and support for Barack Obama and John McCain in the 2008 presidential election. *Analyses of Social Issues and Public Policy*, 9(1), 255–268. doi:10.1111/j.1530-2415.2009.01190.x
- Vail, K. E., Courtney, E., & Arndt, J. (2019). The influence of existential threat and tolerance salience on anti-Islamic attitudes in American politics. *Political Psychology*, 40(5), 1143–1162. doi:10.1111/pops.12579
- Vail, K. E., & Horner, D. E. (2019). Self-determination attenuates death-related concerns and maintains well-being when death-thoughts are heightened (Unpublished manuscript). Cleveland, OH: Cleveland State University.
- Vail, K. E., Horner, D. E., & Conti, J. P. (2019). Intrinsic goal orientation attenuates the effect of mortality salience on worldview defense (Unpublished manuscript). Cleveland, OH: Cleveland State University.
- Vail, K. E., Juhl, J., Arndt, J., Vess, M., Routledge, C., & Rutjens, B. T. (2012). When death is good for life: Considering the positive trajectories of terror management. *Personality and Social Psychology Review*, 16(4), 303–329. doi:10.1177/1088868312440046
- Vail, K. E., Morgan, A., & Kahle, L. (2018). Self-affirmation attenuates death-thought accessibility after mortality salience, but not among a high post-traumatic stress sample. *Psychological Trauma: Theory, Research, Practice, and Policy*, 10(1), 112–120. doi:10.1037/tra0000304
- Van Hiel, A., & Vansteenkiste, M. (2009). Ambitions fulfilled? The effects of intrinsic and extrinsic goal attainment on older adults' ego-integrity and death attitudes. *The International Journal of Aging and Human Development*, 68(1), 27–51. doi:10.2190/AG.68.1.b
- Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration*, 23(3), 263–280. doi:10.1037/a0032359
- Watson, D., & Clark, L. A. (1992). Affects separable and inseparable: On the hierarchical arrangement of the negative affects. *Journal of Personality and Social Psychology*, 62(3), 489–505. doi:10.1037/0022-3514.62.3.489
- Weinstein, N., Deci, E. L., & Ryan, R. M. (2011). Motivational determinants of integrating positive and negative past identities. *Journal of Personality and Social Psychology*, 100(3), 527–544. doi:10.1037/a0022150
- Weinstein, N., & Hodgins, H. S. (2009). The moderating role of autonomy and control on the benefits of written emotion expression. *Personality and Social Psychology Bulletin*, 35(3), 351–364. doi:10.1177/0146167208328165
- Weinstein, N., Hodgins, H. S., & Ostvik-White, E. (2011). Humor as aggression: Effects of motivation on hostility expressed in humor appreciation. *Journal of Personality and Social Psychology*, 100(6), 1043–1055. doi:10.1037/a0022495
- Yalom, I. D. (1980). *Existential psychotherapy* (Vol. 1). New York, NY: Basic Books.

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