

WOUNDED WORLDVIEWS: A TERROR
MANAGEMENT PERSPECTIVE ON COMBAT
VETERANS

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VETERANS

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Abstract: Previous research has demonstrated that individuals that have experienced trauma respond atypically to reminders of mortality. The present research tested the hypothesis that United States military veterans would respond atypically to reminders of mortality. In the experiment, 315 college students and 78 military veterans wrote a short essay describing the emotions that the thought of their own death aroused in them. Each participant then completed a word fragment task designed to measure death thought accessibility (DTA). The results revealed several findings. Veterans respond immediately to MS, and do not require a delay as with civilians. Veterans return to baseline levels of DTA quickly following MS which is also different from previous research with civilians. Additionally, veterans with high levels of combat exposure show an immediate increase in DTA, while veterans with low levels of combat experience show an immediate decrease in DTA. The implications of these findings are discussed.

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CHAPTER I

INTRODUCTION

Terror management theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986) states that culture provides an individual with self-esteem, and that self-esteem works to keep thoughts of death out of the mind. TMT research has shown that reminders of mortality cause a myriad of changes in attitudes and behaviors including increased aggression (McGregor et al., 1998, McPherson & Joireman, 2009), increased intergroup bias (Greenberg, Schimel, Martens, Solomon, & Pyszczynski, 2001, Bradley & Kennison, 2012), and an increase in risky behaviors (Hirschberger, Florian, Mikulincer, Goldenberg, & Pyszczynski, 2002, Hansen, Winzeler, & Topolinski, 2010). A new line of TMT research, anxiety-buffer disruption theory (ABDT; Abdollahi, Pyszczynski, Maxfield, & Luszczynska, 2011), has shown that individuals that have suffered a trauma possess a damaged worldview, and they react atypically to reminders of mortality. Given the current mental health crisis in the military (Army, 2010), it is possible that returning combat military veterans have a damaged worldview which consequently causes them to think uniquely about mortality. It is also possible that combat veterans will react atypically to reminders of mortality as has been the case in previous ABDT research. The present research has two aims. One is to measure American military veterans' unconscious thoughts regarding death and compare it to civilians. The second aim will investigate if veterans respond atypically to mortality primes. This reaction may provide insight into the current veteran mental health crisis.

TMT is based on the works of Ernest Becker (Becker, 1973). Becker stated that humans are like other animals in that we have a survival instinct, but that we are different in at least one way. Humans have the cognitive abilities to imagine the future. This ability is adaptive in many ways. We can use these abilities to plan our careers, prepare for our retirement, and to fulfill even more basic drives such as what to have for dinner. This ability does not come cheaply however. It also comes with the potential for an ever-present anxiety about our own mortality. We realize that at some point in the future we will no longer exist. We know we are going to die.

To assuage this anxiety, according to Becker, we invest in cultural worldviews. Worldviews provide us with an explanation as to why we exist, and what we should do while we exist. Worldviews provide us with a permanent and meaningful universe. Worldviews also provide us with an avenue for self-esteem. By meeting or exceeded the dictates of a cultural worldview, we obtain self-esteem. This self-esteem is then used, not only to feel good about ourselves, but to deny our mortality. Self-esteem is used to buffer against thoughts of personal mortality, and to push these thoughts into the background. Essentially, a person with high self-esteem believes that they are too good to die. Additionally, cultural worldviews provide avenues to immortality. This is generally through a religious afterlife (I acted in a way congruent with the cultural worldview so when I die I will go to a place like heaven), but it can also be through a symbolic immortality (My works will be remembered forever).

Unfortunately, cultural worldviews are vastly different. If one individual believes that the world was created in six days and another individual believes that the world was created out of a coconut, at least one of them has to be wrong. The mere existence of other worldviews causes us to question the validity of our worldview, of our self-esteem, and of our death-anxiety buffer. Historically, this existential threat has been dealt with by the assimilation of the others, the derogation of the others, and if those strategies do not work, the annihilation of the others.

Becker's works are interesting theories, but these theories had no experimental evidence. TMT researchers have worked to bring this evidence to light. It was proposed by TMT researchers that if an individual is reminded of their mortality, they will be more likely to defend their worldview. After reminders of mortality, individuals should increase liking for those that are similar to them, and increase disdain for those who are different. Disdain should also increase for individuals that violate the norms of the cultural worldview. In the first reported experimental evidence for TMT, judges were asked to set a bond for an alleged prostitute (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). Half of the judges were reminded of their mortality. This is referred to as mortality salience (MS). Judges that had been reminded of their mortality set a significantly higher bond amount (455 dollars) compared to judges that had not been reminded of their mortality (50 dollars).

Since that original experiment, numerous studies have shown a myriad of changes after MS. For example, after MS, individuals become more aggressive (McGregor et al., 1998, McPherson & Joireman, 2009), exhibit stronger intergroup bias (Greenberg et al., 2001, Bradley & Kennison, 2012), and increase their desire to kill those that subscribe to a different worldview (Pyszczynski et al., 2006). Also, after MS, individuals exhibit an increase in risky behaviors (Hirschberger et al., 2002, Hansen et al., 2010), and an increase in mental health issues (Strachan et al., 2007, Kosloff et al., 2006).

While the majority of TMT studies have used MS as the foundation for the experiments, an additional line of research has been focusing on death thought accessibility (DTA; for review see Hayes et al., 2010). Because thoughts of mortality have the potential to cause terror, the individual needs to be able to remove these thoughts from conscious awareness. So measuring death related cognitions requires subtle and indirect methods. A word fragment task was first used as a measurement of DTA (Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994). Participants responded to a control topic or to an MS topic, and then were asked to complete a

series of word fragments. Several of the word fragments could be completed with either a neutral word or a death related word. For example, “coff _ _” can be completed as “coffee” or “coffin.” Participants that had been reminded of their mortality completed the fragments with more death related words.

Cultural worldviews, self-esteem, and death denial are intertwined according to TMT. As the MS research has shown, reminding an individual of their mortality causes a need to defend the worldview. However, if culture, self-esteem, and death denial are intertwined, then attacks on the culture worldview or attacks on self-esteem should increase thoughts about death. The first study in this line of research exposed Canadian participants to disparaging remarks about their culture. Participants that were exposed to these remarks had higher DTA than participants that had not been exposed to the remarks (Schimel, Hayes, Williams, & Jahrig, 2007). Additionally, threats to self-esteem also increase DTA (Hayes, Schimel, Faucher, & Williams, 2008)

Several studies have since been conducted that show a myriad of primes can cause an increase in DTA. Looking at pictures of elderly people (Martens, Greenberg, Schimel, & Landau, 2004) and thinking about individuals with disabilities (Hirschberger, Florian, & Mikulincer, 2005) can increase DTA. Exposure to innocent victims that had been severely injured caused an increase in death related thoughts (Hirschberger, 2006). Individuals own shortcomings also cause an increase in DTA. Participants that recalled an experience when they were at their worst had an increase in DTA (Ogilvie, Cohen, & Solomon, 2008). DTA also has been shown to increase after experiencing an experimentally produced failure (Hayes, Schimel, Faucher, & Williams, 2008). Additionally, participants that score high in rumination also score high in DTA (Taubman-Ben-Ari & Noy, 2010).

Several studies have investigated the interaction of close relationships and DTA. Imagining the separation from a close relationship partner increases DTA (Mikulincer, Florian,

Birnbaum, & Malishkevich, 2002) as well as imagining problems in a romantic relationship (Florian, Mikulincer, & Hirschberger, 2002). Recalling a positive parental figure reduces DTA following MS and consequently reduces worldview defense (Cox et al., 2008). Additionally, priming thoughts that a romantic partner holds the individual in high regard reduces DTA after MS (Cox & Arndt, 2011).

An important component of a worldview is that the world is just. In a just world, good things happen to good people and bad things happen to bad people (Lerner, 1980). If, however, the reverse happens, it compromises the worldview. Experimentally it has been shown that after individuals read about something adverse happening to a good person DTA increases (Hirschberger, 2006; Landau et al., 2004). Additionally, Christians that read a news article about the increase of Muslims in Nazareth had an increase in DTA. This increase disappeared though if participants then read a news story about a plane crash that killed a number of Muslims suggesting that the death of the Muslims was just, and that the correct worldview prevailed (Hayes, Schimel, & Williams, 2008).

An important component of a worldview generally is religion. After being exposed to anti-creationist materials, creationists had an increase in DTA (Schimel et al., 2007). After reading contradictions in the Bible, individuals that scored high in religious fundamentalism had an increase in DTA (Friedman & Rholes, 2007). Non-religious people are also susceptible to increases in DTA. Atheists that read a story about intelligent design had an increase in DTA (Hayes et al., 2010).

Even individuals that hold a scientific worldview use that worldview to buffer against thoughts of mortality. A component of a scientific worldview is that we are progressing towards a better world. This concept has been referred to as the myth of progress (J. Gray, 2004).

Individuals that were exposed to the idea that progress is an illusion had an increase in DTA (Rutjens, van der Pligt, & van Harreveld, 2009).

Additionally, DTA increased after viewing an insurance company's logo (Fransen, Fennis, Pruyn, & Das, 2008), after reading news of terrorism (Das, Bushman, Bezemer, Kerkhof, & Vermeulen, 2009), and after viewing images of androids that appear to human-like (MacDorman, 2005). Also, for women, conducting breast exams on a model increases DTA (Goldenberg, Arndt, Hart, & Routledge, 2008).

According to TMT, culture provides a meaningful and stable universe which provides avenues for self-esteem, and then self-esteem is then used to mitigate thoughts of death. Research has shown that individuals with dispositional high or experimentally manipulated high self-esteem are not susceptible to the effects of MS (Harmon-Jones et al., 1997). Also, threatening a valued part of the worldview creates an increase in DTA (Schimel et al., 2007) showing the intertwined nature of culture, self-esteem, and death denial. However, an individual that has suffered a personal trauma may also find their worldview to be damaged. They may no longer feel the universe is stable and meaningful. They may not be able to utilize the cultural worldview as a means to self-esteem, and therefore may be lacking in death denial mechanisms.

Ideas such as these have been explored in a new line of TMT research referred to as anxiety-buffer disruption theory (ABDT; for review see Pyszczynski & Kesebir, 2011). Because an individual with a damaged worldview may have a damaged death anxiety buffer, it was theorized that these individuals would respond atypically to MS. Several studies have supported this hypothesis. In the first reported ABDT study, participants were selected in Iran that had been in close proximity to a major earthquake. Participants first responded to a scale to measure dissociation. Dissociation was chosen because it is one of the strongest predictors of PTSD (Ozer, Best, Lipsey, & Weiss, 2008). Participants then responded to questions regarding foreign

aid. After MS, participants low in dissociation increased dislike for foreign aid. This replicates previous TMT research. However, after MS, participants high in dissociation exhibited no difference regarding foreign aid compared to the control condition. To the authors, these results show that participants high in disassociation have a disrupted death anxiety buffer and are unable to show the typical TMT results. A second study was conducted with the same participants two years later. The results from the first study were replicated.

ABDT research has also revealed that individuals high in PTSD exhibit an abnormally low level of DTA in control groups (Chatard et al., 2011). The same study revealed that while a delay is needed between MS and the measurement of DTA for non-traumatized individuals, this is not the case for traumatized individuals. The authors conclude that individuals high in PTSD have a weakened worldview that is unable to protect the individual from death related thoughts. Consequently, they must use a substantial amount of cognitive resources on a day to day basis to keep thoughts of death out of conscious awareness. However, a reminder of mortality opens the floodgates to their suppressed thoughts of mortality.

Edmondson et al. (2011) further investigated DTA in a traumatized population. In Study 1, participants were assigned to an MS, trauma, or control condition. Participants that were low in trauma symptoms replicated previous DTA research. Immediately following MS, they did not show an increase in DTA because of the ability to use a functional death anxiety buffer to suppress death related thoughts. However, individuals high in trauma symptoms showed an immediate increase in DTA following MS suggesting that their death anxiety buffer functions atypically.

Another ABDT study investigated the damaged worldview of Polish women who were living in domestic violence shelters. Participants were first assigned to an MS or a control condition. Each then completed the Judgment of Social Transgressions Scale (Florian &

Mikulincer, 1997). Participants then completed a scale to measure PTSD. Roughly half of the participants met the criteria for a PTSD diagnosis. Participants that did not meet the criteria for PTSD responded to MS in a typical way. After MS, these participants judged the social transgressors more harshly. However, participants that met the criteria for PTSD responded to MS in the exact opposite manner. After MS, these individuals judged the social transgressors significantly less harshly. In conjunction with the other ABDT studies, it is beginning to appear that those that have experienced trauma potentially have a damaged worldview that does not serve well as a death anxiety buffer.

It is possible that ABDT research could be furthered by using American military combat veterans due to their unique experiences. Army suicide rates are typically lower than the national average. However, in 2009 the Army rate of suicide reached a record of 21.7 in 100,000 which is roughly double the suicide rate for civilians (Tarabay, 2010). When suicides are combined with high risk deaths in the Army, such as drinking and driving, more soldiers die by their own hands than in combat (Army, 2010). It should be noted these numbers are only for soldiers that are active duty. These numbers do not reflect those that have retired from the military because no one keeps an accurate track of those numbers.

It is clear that being a participant in combat has negative psychological consequences. It is possible that witnessing death and actively engaging in killing damages the worldview, self-esteem, and the death-anxiety buffer for the individual. Additionally, risky behaviors (Hirschberger et al., 2002, Hansen et al., 2010) have been linked to the death anxiety buffer. After MS, several risky behaviors have been shown to increase. It comes as no surprise to discover that of the active duty suicides, 34% had legal issues, and 18% had a substance abuse diagnosis (Army, 2010).

The purpose of the present research is to investigate if veterans are unconsciously thinking more about death than civilians, and if combat veterans will respond atypically to MS. The intuitive guess would be that combat veterans would have a higher level of baseline DTA when compared to civilians. However, ABDT research has demonstrated that individuals with high levels of trauma had extremely low levels of DTA (Chatard et al., 2011). According to the authors, this is because traumatized individuals must use their cognitive resources to keep thoughts of death low instead of utilizing the cultural worldview. It has also been demonstrated that after MS a delay is needed to increase DTA because immediately following MS individuals suppress thoughts of mortality (Greenberg et al., 1994). This is not true for traumatized individuals. After MS, they immediately show an increase in DTA (Chatard et al., 2011; Edmondson et al., 2011). According to these authors, this is an atypical response to MS, and suggests a compromised death anxiety buffer. If veterans do think about death differently from civilians, it could help to explain the current state of mental health in the military.

In the present experiment, I measured baseline DTA for civilians and veterans in the control group. I also tested the hypothesis that veterans would respond atypically to reminders of mortality. The present research aims to replicate previous ABDT studies while utilizing veterans as participants. In the present experiment, participants were randomly assigned to either respond to the MS essays or control essays. Participants then completed a measurement of DTA. It was predicted that veterans would have a different level of baseline DTA when compared to civilians. It was also predicted that veterans would respond to atypically to MS compared to civilians. Specifically, they would not need a delay between MS and the measurement of DTA to produce an increase in DTA. In accordance with previous research with traumatized populations, it was expected that their reaction to MS would be immediate. In addition, all participants completed several questionnaires to measure individual differences in the response to MS. These included scales designed to measure PTSD and trauma over the lifetime. It was considered a possibility

that these life experiences could have an impact on the reaction to MS. Veterans also completed a combat exposure checklist. Recently several changes were made to the PTSD criteria in the DSM-5 (American Psychiatric Association, 2013). One of these changes was a refinement that states PTSD may be more likely to occur with people that are repeatedly exposed to life threatening situations or are witnesses to life threatening situations. Because combat is exactly that, it was possible that combat experience would have an impact on the reaction to MS.

CHAPTER II

METHODS

Participants

315 undergraduate civilians who were enrolled in psychology classes at a southwestern university took part in the experiment in exchange for course credit. 78 undergraduates who were veterans took part in the experiment in exchange for an entry in a drawing for a fifty dollar gift card. Participants completed the study online. A pilot study has shown that DTA can be manipulated online (Bradley & Kennison, unpublished data).

Materials and Procedure

Participants first responded to several demographic questions and a self-esteem scale (Rosenberg, 1965). Participants were randomly assigned to either the control or the MS condition. In the MS condition, participants responded to the two following questions: “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 will happen to you as physically die and once you are physically dead.” Participants in the control condition responded to the two following questions: “Please briefly describe the emotions that the thought of dental pain arouses in you” and to “Jot down as

as specifically as you can, what you think will happen to you as you physically experience dental pain, and once you are physically experiencing dental pain.”

Next, half of the participants completed the PANAS (Watson, Clark, & Tellegen, 1988), while the other half of the participants proceeded directly to the measure of DTA. The PANAS measures affect, but its main purpose here is to serve as a distraction between MS and the measurement of DTA. The PANAS asks participants to describe how they feel right now by selecting a number between 1 (very slightly or not at all) and 5 (extremely) for 20 different emotions (e.g., interested, distressed, excited, ect.) Following PANAS, the participants completed the DTA measurement. The DTA measurement consists of 25 word fragments. 6 of the fragments can be completed with a neutral word or a death related word. For example, coff_ _ can be completed as “coffee” or “coffin” (Greenberg et al., 1994). Individuals that complete the fragments with more death related words are said to have higher DTA.

Participants completed the experiment by completing a questionnaire regarding important values (Gurel-Atay, Xie, Chen, & Kahle, 2010), the Life Events Checklist (M. J. Gray, Litz, Hsu, & Lombardo, 2004) to check for trauma experience over the lifetime, the PTSD Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993), and The Combat Exposure Scale (Keane et al., 1989).

Experimental Design

The experimental design was a 3 (Control/MS Delay/MS No Delay) x 2 (Civilians/Veterans). Control/MS Delay/MS No Delay was manipulated between participants. Civilians/Veterans was a quasi-independent variable.

CHAPTER III

RESULTS

As expected veterans had higher levels of trauma, $F(1, 392) = 192.97, p < .001, \eta^2 = .33$, and PTSD, $F(1, 392) = 14.85, p < .001, \eta^2 = .04$, compared to civilians. Veterans with high combat experience did have significantly higher levels of trauma compared to veterans with less combat experience, $F(1, 77) = 11.77, p = .001, \eta^2 = .13$, but these veterans did not have significantly higher levels of PTSD, $F(1, 77) = 2.22, p = .14, \eta^2 = .03$.

One possible influence upon DTA for veterans is combat exposure. A 3 (control/MS with delay/MS without delay) x 2 (high combat exposure/low combat exposure) analysis on DTA revealed a significant interaction, $F(2, 72) = 6.77, p = .002, \eta^2 = .16$. Further investigation revealed DTA for veterans with high combat exposure ($M = 1.50$) compared to veterans with low combat exposure ($M = 1.91$) in the control condition was not significant, $F(1, 21) = 1.01, p = .33$, nor was DTA for veterans with high combat exposure ($M = 1.54$) compared to veterans with low combat exposure ($M = 2.07$) in the MS with delay condition, $F(1, 25) = 2.37, p = .14$. However, veterans with high combat exposure ($M = 2.13$) had a significantly higher level of DTA compared to veterans with low combat exposure ($M = 1.00$) in the MS without delay condition, $F(1, 26) = 10.70, p = .003, \eta^2 = .29$. Figure 1 displays DTA by condition and combat exposure.

A 3 (control/MS with delay/MS without delay) x 2 (civilians/veterans) analysis for DTA was not significant, $F < 1$. There was not a main effect for condition, $F < 1$, nor for military status, $F(1, 387) = 2.17, p = .14$. Further investigation revealed that DTA was not significantly different for civilians between the control condition compared to the MS with delay condition, $F < 1$, nor for veterans, $F < 1$. These results are inconsistent with previous DTA research. The means for DTA by condition and military status are displayed in Table 1.

MS had no effect on the variables of PANAS which is congruent with most previous TMT research. Demographic variables such as age and gender did not significantly interact with the conditions. Neither did the self-esteem scale, the Life Events Checklist, nor the PTSD checklist.

CHAPTER V

GENERAL DISCUSSION

The present research is potentially the first TMT study to investigate the DTA of United States military veterans. The results revealed four main findings. One, veterans respond immediately to MS. This is congruent with previous ABDT research that has suggested that populations that have suffered trauma are more likely to respond to MS immediately (for review see Pyszczynski & Kesebir, 2011). Two, veterans recover quickly from MS. Veterans that had the delay between MS and the measurement of DTA by responding to PANAS had similar DTA to veterans in the control group. So DTA for veterans returns to baseline levels very quickly. Veterans may be the first reported group to recover so quickly from MS. Three, veterans with high levels of combat experience responded differently to MS compared to veterans with low levels of combat experience. Veterans with high levels of combat experience have an immediate increase in DTA, while veterans with low levels of combat experience have an immediate decrease. Four, the civilian participants have not replicated previous DTA research at this time. In short, veterans do respond atypically to MS. They do not, however, display a significantly different level of baseline DTA compared to civilians. This may be because the civilians have not replicated the previous DTA findings.

The present results suggest that veterans react quickly and recover quickly to MS. This is congruent with previous research with traumatized populations. Previous research has shown that individuals that have not been traumatized require a delay between MS and the measurement of DTA because these individuals suppress thoughts of mortality immediately following MS (Greenberg et al., 1994). Individuals that have been traumatized are not able to suppress thoughts of mortality immediately following MS suggesting a compromised worldview (for review see Pyszczynski & Kesebir, 2011). Consistent with that research, the present results show that military veterans do not require a delay after MS. It also makes sense at an intuitive level. Military operations demands that mortal threats be handled quickly and decisively. They also must be able to recover quickly from mortal threats in order to deal with next objective. The quick return to baseline levels of DTA for these veterans is opposite the previous research with civilians. Previous research with civilians has demonstrated that civilians are susceptible to the effects of MS for much longer periods of time when compared to the veterans in this experiment (Hayes et al., 2010).

The most interesting result is that veterans with high levels of combat exposure react to MS in the exact opposite manner compared to veterans with low levels of combat experience. After MS, veterans with high levels of combat experience saw an immediate increase in DTA. This is congruent with previous research utilizing traumatized populations. However, veterans with low level of combat experience showed an immediate decrease in DTA. This may be the first time in published TMT research that MS has caused a decrease in DTA. On the surface, it is a highly counter-intuitive finding. MS is essentially a priming technique that should increase thoughts of death. It should never decrease thoughts of death unless individuals are actively suppressing those thoughts. TMT authors have stated individuals are suppressing thoughts of mortality when their DTA levels stay at baseline immediately following MS. In the present research, veterans with less combat experience have levels of DTA that are below baseline which

strongly suggests suppression of DTA. Perhaps this is because these individuals have had limited exposure to combat, they are the most frightened by death in combat. They have not acclimated to the idea of death on the battlefield, and consequently they are the most disturbed by the idea. They have seen enough death on the battlefield to be rattled by it, but they have not seen enough to be used to it. It is possible they have to bury their thoughts of mortality in order to function.

Which reaction is best, an immediate increase or decrease in DTA for individuals in the military? The intuitive choice would be that suppressing thoughts of mortality would be beneficial, but this may not be the case for an individual in the military. Suppressing those thoughts may use cognitive resources that could be better used during battle. This reduction in cognitive resources could slow reactions during a time when every millisecond is of the utmost importance. The combat veterans with high levels of combat experience may understand this at an unconscious level. They do not suppress their thoughts of mortality. Perhaps they are actually using those thoughts as a motivator. When these individuals are responding to MS, it is not some intellectual exercise that they have no real world experience with like the typical participant in most TMT research. They have, on multiple occasions, had someone actually try to kill them. Their death is not something that might happen in some distant future. It is something that has almost happened numerous times. Perhaps thoughts of mortality give them the ability to live in the moment, but that type of thinking may have consequences. It may be in addicting in a way. If you are getting “high” off of continuous threats of mortality, returning to a slow civilian life may be difficult. Additionally, continuous thoughts of mortality could cause a permanent increase in negative thoughts and behaviors that have been shown to increase after MS such as intergroup bias and substance abuse. That may be helpful in understanding the current mental health crisis in the military.

The military training veterans receive should also be noted. Boot camp has been referred to as a time when the individual is broken down and built back up. This could be thought of as a

forced worldview reorientation. Because previous TMT research has shown how important a worldview is to an individual, this worldview destroying exercise may have long-lasting repercussions. It could be in part responsible for veterans' atypical reactions to MS. Although, this may be an essential trade off. It may be necessary to have a worldview rewritten to be effective in the field.

The civilian participants do not replicate previous DTA research. Previous civilian research has shown that MS increases DTA after a delay (for review see Hayes et al., 2010). This civilian data is contradictory with all previous published DTA research. They are also contradictory with common sense. Writing about death should cause an increase in death related thoughts as would writing about a zoo would increase thoughts related to animals. It is a simple priming effect. It should be noted that we have conducted previous DTA research at the same university in 2009. Those results were consistent with previous research. Participants in the MS condition had higher DTA compared to participants in the control condition. The exact same materials were used during this experiment. The first group of participants for this study were run in October of 2012. The results showed no difference in DTA between the MS and control condition. This was perplexing. The possibility that the presidential election was influencing the results was considered. Threats to the worldview can increase DTA, and it was possible that the elections were considered a worldview threat by some participants. So, a new set of participants were ran in March of 2013. Again, these results were not congruent with past research. MS did not increase DTA in these two cases.

There are at least three ways to explain the results of the civilians. First, the study conducted by this lab in 2009 was a false-positive. Perhaps MS does not increase DTA with participants at this university. This theory is weak. TMT research has been shown to be a cross-cultural phenomenon, and again, the MS manipulation and the measurement of DTA is a simple priming technique. A second explanation is the data from October 2012 and the data from March

2013 is a false-negative. While it is possible, it should be unusual to have two type II errors in a row.

A third and more theoretical possibility is that the American worldview is currently in a state of flux. MS is not currently increasing DTA because DTA is already too high at the moment. The baseline DTA in 2012 and 2013 is higher than the baseline DTA from the 2009 study. The majority of TMT research has been conducted during a time of American prosperity. As of this date, the idea of American exceptionalism may be on the wane. The last decade in American history has produced highly expensive potentially failed wars, financial crises, political intransigence and scandals, terrorist attacks, and gun violence. These incidents may be taking its toll on the death-anxiety buffering attributes of the American worldview. Future research should investigate if this third possibility is true. If true, the effects could be quite negative for those in America, and it could have negative repercussions for those that are not American when considering that worldview threats cause individuals to exhibit more intergroup bias.

Future TMT and combat veterans research has several potential directions. First, because veterans have an immediate reaction to MS, it is possible that their thoughts of mortality are closer to the surface and these thoughts do not need to be activated by MS. Other types of stress could raise DTA for these individuals. One way of testing this would be to administer a Stroop task and then measure DTA. A Stroop task presents a word of a color, such as RED, in a color different from the actual meaning of the word, such as blue. The participant must press a button marked "RED" to produce a correct response. It is a very taxing mental exercise. If performing this task causes a change in DTA, it could help in explaining current mental health problems among veterans. Small stresses throughout the day that would not cause an increase in DTA for civilians may cause an increase in DTA veterans because their thoughts of mortality are closer to the surface. This could cause negative changes in thoughts and behaviors. For example, MS increases individuals desire to engage in risky behaviors (Hirschberger et al., 2002). DTA is

increased by thoughts of relationship problems (Florian et al., 2002). 20% of the Army's active duty suicides from 2005 to 2009 had been drinking alcohol and 56% had relationship problems (Army, 2010). So a small fight with spouse that would be ignored by a civilian could cause a drinking binge with a veteran because their cognitive resources are being utilized to suppress thoughts of mortality. Or perhaps the initial disagreement may have been caused in part to veterans suppressing DTA. In any case, the idea that some veterans use cognitive resources to suppress thoughts of mortality is worthy of investigation.

A second experiment could investigate if lower DTA after MS, or suppressed DTA, is associated with a higher cognitive load and consequently poorer performance. Participants could be exposed to MS, have their DTA measured, and then complete a Stroop task. For individuals with suppressed DTA, this suppression could cause a cognitive load which may cause slower reaction times and an increase in incorrect responses. This would obviously have real world applications in the field. For example, MS causes individuals to be more likely to misidentify tools as weapons if they are primed with another race (Bradley & Kennison, 2012). Individuals that are suppressing thoughts of mortality may make more errors recognizing weapons in foreign lands, and their reactions to such incidents may be slowed. Additionally, do individuals with more combat experience perform better on the task after MS? The present results suggest that they do not suppress their thoughts of mortality, so they would not have that extra cognitive load. In fact, thoughts of mortality could be an extra motivator for them, and could cause them to respond potentially quicker and more accurately.

Because veterans do have atypical responses to MS, and assuming that this is a negative reaction at least some of the time, it may be worth investigating ways to minimize this effect. One possibility could be mindfulness training. Mindfulness has been shown to reduce the effects of MS (Niemic et al., 2010). Mindfulness training is an avenue that the military is currently investigating to reduce stress (Watson, 2013). While the main purpose of this training is to

reduce stress, it may be also reducing thoughts of mortality which could be thought of as the biggest stressor possible. So it could be investigated if mindfulness training helps veterans to handle thoughts of mortality. This may create a more effective and more mentally healthy military that is better able to cope with thoughts of mortality.

To sum up the findings succinctly, veterans do respond atypically to reminders of mortality. They do not need a delay between MS and the measurement of DTA which has been needed in previous DTA research with civilians. Veterans also return to baseline levels of DTA quickly following MS. This is also the direct opposite of previous DTA research with civilians. Also, veterans with high levels of combat experience respond differently to MS than veterans with low levels of combat experience. Veterans with high levels of combat experience see an increase in DTA immediately following MS, while veterans with low levels of combat experience see an immediate decrease in DTA. Hopefully these findings may be used in future research to help with the mental health crisis in the military.

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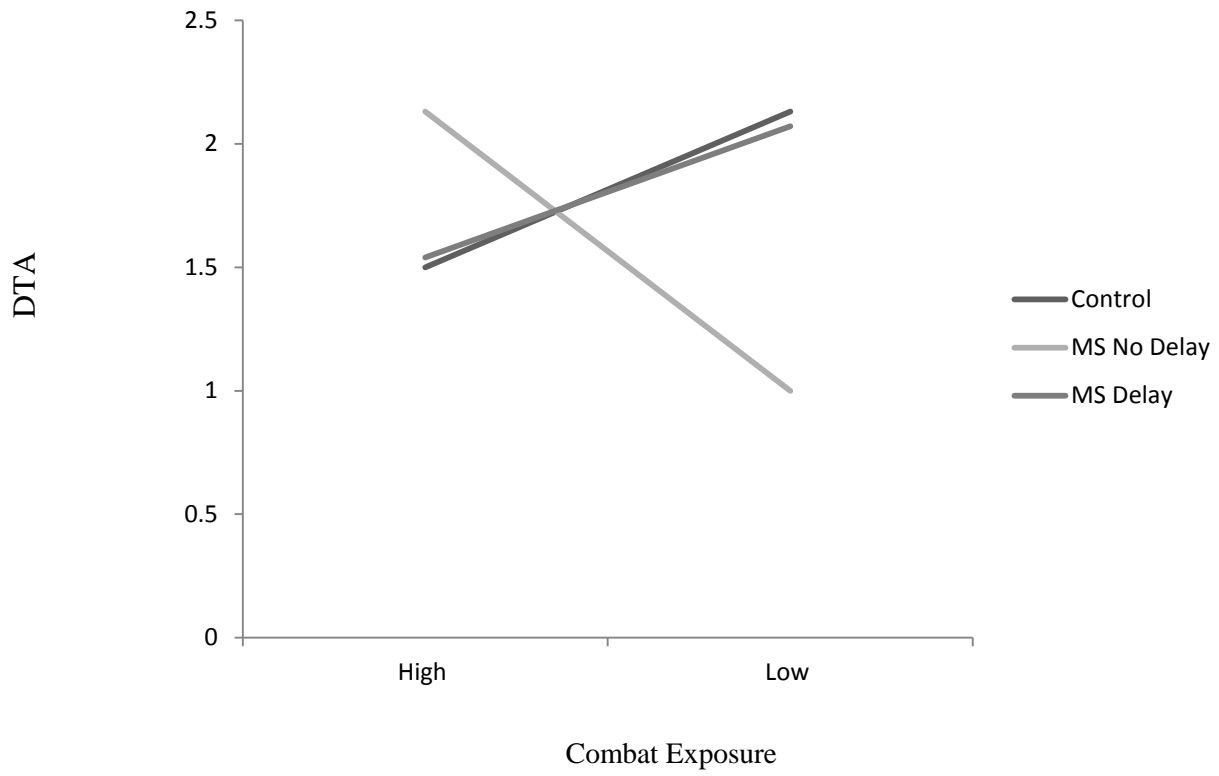
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Table 1. DTA by military status and condition.

	Civilian	Veteran
Control	1.86 (.10)	1.70 (.22)
MS Delay	1.86 (.09)	1.81 (.20)
MS No Delay	1.99 (.11)	1.61 (.20)

Figure 1. DTA by combat exposure and condition.



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