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Terror Management and Religious Literacy in the Classroom

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ABSTRACT

Over the past decade, Terror Management Theory (TMT) has been widely studied for its role in conflict management and in shaping the behavior of target populations, including in the classroom. Emerging from research on the importance of self-esteem, TMT submits that much of our behavior is driven by death anxiety and its effects are particularly evident when one's "worldview" is threatened by another, incompatible "worldview." When a student is threatened by learning about a topic that is incompatible with their worldview, their response is more contingent upon their sources of self-esteem and meaning than upon the reception of straightforward information on the topic itself. Their religious identities provide yet another layer of framing for self-esteem and belonging that may or may not interfere with their learning. This paper urges educators to recognize the importance of religious literacy when incorporating the insights of TMT into their pedagogical strategies when teaching topics that may be incompatible with the worldview of many of their students.

Keywords: climate change, conflict management, pedagogy, religious diversity, Terror Management Theory

Editors' Comment

Isaac Alderman, Ph.D., instructor at Baruch College, City University of New York, and Kendra Holt Moore, Ph.D. candidate Boston College and Assistant Professor of Religion at Bethany College (both 2017-2019 Fellows) introduce Terror Management Theory (TMT) from social psychology as a useful tool for understanding how accepting students may or may not be to the frightening truth of anthropogenic climate change. They remind us that students' beliefs are are oftentimes more shaped by their personal experiences rather than facts and emphasize the importance of understanding students' identifies, especially their religious identities, when teaching science that has religious or political implications.

Introduction

One of the facts of science education is that students quickly see religious and political implications when their own views, or that of their community, are at odds with scientific consensus. The challenge for science educators is how to navigate these students' realizations without unintentionally furthering conflict or cynicism towards science. The difficulties of this challenge are clearly seen with topics such as human evolution, sex education, women's health, and climate change. As educators, we want to allow students to be validated in their deeply held convictions, and we hate

closing down dialogue by saying, "you are wrong." It can, in fact, feel like we are criticizing a student's very identity or religious beliefs when we do so. It is difficult, unpleasant, and often results in adverse and confrontational responses when we try to explain to students why their deeply held view is at odds with scientific consensus or factually incorrect.

The National Science Teachers Association position statement on climate science highlights many of these challenges and recognizes that students' deeply held values and cognitive biases can be a roadblock to learning:

Belief systems do not necessarily arise from logic and evidence... [but from one's] faith, family, and personal emotional experiences. An individual's desire to be a part of a specific community or group will inform his or her beliefs and affect his or her ability to change their beliefs based on the pressures applied by the community or group they belong to or wish to join (NSTA, 2018, p. 4).

The deeply held values and sense of identity can cause the student to reject the course material and lead to discouragement on all sides and even conflict in the classroom. More than one in four science teachers recently surveyed reported that they sought to mitigate classroom conflict by giving "equal time to perspectives that raise doubt that humans are causing climate change" (Plutzer et al., 2016, p. 18).

It is not surprising that teachers all over the country are trying different approaches, attending workshops, reading research, and talking with peers about how to reduce this tension in ways better than teaching the controversy. Beyond publishing examples of best practices, researchers and educators are looking to fields such as cognition and psychology to apply various theoretical frameworks to generate useful approaches (Drewes & Henderson, 2020). Some are focusing on first teaching the nature of science to overcome misconceptions at that foundational level before moving on to those more controversial topics (Carter & Wiles, 2014). Others are making use of and modifying methods and insights gained from psychologists to help better understand the ways in which teaching about climate science is rejected and to improve upon failing approaches (Armstrong et al., 2018). Cognitive scientists have also joined this cause, finding ways to apply the insights from their own disciplines to help expand and improve climate science education (Aron, 2019). For example, we find attempts to improve receptivity to climate science through better visual representation, based on our understanding of the processing of such information (Jordan et al., 2016). In other areas, we find research on the role of cognitive style in climate skepticism (Trémolière and Djeriouat, 2021).

Another approach that has been gathering attention is drawn from social psychology's Terror Management Theory (TMT), which identifies the influence and sources of death anxiety in the conscious and unconscious mind. Some educators have found TMT to be a useful toolkit for understanding and anticipating student concerns and resistance to learning about climate science (Dickinson, 2009; Wolfe & Tubi, 2019; Van Kessel 2020). By building on the research demonstrating that TMT enables educators to see the impact of classroom content intersecting with student identities, we suggest that educators also pay special attention to the importance of student religious identities. Our goal is to highlight the need for religious literacy in educational spaces, since religion is a substantial force that can both encourage and hinder the learning objectives in a science classroom.

Terror Management Theory

TMT emerged in the 1980s from research into the evolutionary foundations of self-esteem and the corporate drive for ideological dominance. From the very first iterations of TMT, these researchers drew on the earlier work of Ernest Becker, specifically his 1973 book *The Denial of Death* (Greenberg et al., 1986). In it, Becker argues that the most powerful force driving human action is the anxiety brought about by the human knowledge of mortality and finitude. Culture is a construction that is organized as a way to allow us to redirect our attention; Instead of being anxious about our

own impending death, we can focus on meaningful world views which give us a sense of enduring purpose that mitigates our own sense of finitude.

Terror management theorists posit self-esteem as being generated when a person sees themself as defending and properly functioning within their inherited worldview. While the term worldview is both used and resisted in different ways in other social sciences, for TMT it is a broad bucket that encompasses a number of world-building possibilities including religion, politics, culture, and ideologies. For Terror Management theorists, becoming enmeshed in a meaningful worldview keeps death anxiety at bay by increasing one's self-esteem and sense of belonging, and self-esteem in turn creates a feeling that continued participation and devotion to the worldview is right and good (Solomon et al., 2015). We know that people can easily become defensive, combative, and unreceptive to new ideas when they feel that their core ideals and identity are being attacked. This is not the result of political polarization, media bubbles, or fake news; rather, it is a trait that has evolved in humans as a way for both individuals and societies to manage existential concerns. If a person is presented with opinions, views, or actions that threaten the ideals of their worldview, it becomes for them an existential moment in which they either allow themselves to experience greater death anxiety, or they bolster their self-esteem and keep that death anxiety at bay by defending their worldview and closing themselves off to the outside information. Ultimately, the goal of the individual is to suppress deathrelated thoughts to the extent that psychological equilibrium is possible, making day-to-day living possible without overwhelming anxiety about one's insignificance and impermanence.

If Terror Management theorists are correct, then we should be able to find demonstrable support for their position. Hundreds of studies over the last several decades strongly support three primary hypotheses (for a fuller description, see Alderman, 2020). First, the mortality salience (MS) hypothesis predicts that if an element of one's worldview increases self-esteem and thereby creates a buffer against death-related anxiety with the comforts of belonging and transcendent significance, then attempts to remind a person of their mortality through death-reminders will increase the need for the self-esteem bolstering worldview element. For example, when a group of Christians was split in half to evaluate a group of Jews, the half who answered questions about their own death (thereby increasing MS) were found to be harsher judges than the half without MS priming (Rosenblatt, et al., 1989). In other words, the Christians who reflected on what they thought would happen to their bodies upon death experienced the subtle psychological threat that death is a reality to contend with. The conscious and unconscious means to address this threat generally leads people to re-center their own cultures, communities, and identities as the most important. Therefore, the mortality salient Christians in the study judged Jews more harshly, which Terror Management theorists say is an attempt to re-center Christianity as the right way, separating it from other competing religious identities. The assumption behind such a study is that worldviews—especially religious ones—are a zero-sum game. One cannot persist unbothered in their views about morality, God, and afterlife when competing perspectives introduce the possibility that an individual may be wrong about what has been centrally located in their meaning-making anchors. A response is required, which sometimes leads to a determined ignoring or erasing of the other and sometimes leads to violence against the other. Because reflections on death are threatening to survival, whether in a literal sense or in the sense of one's ego, the defensive response is to double down on the cultural and religious systems that dictate truth and order for the subject so that a psychological equilibrium can be maintained.

Second, the anxiety buffer hypothesis predicts that if a self-esteem generating worldview creates protection from death anxiety, then strengthening the worldview will buffer against future death anxiety. The anxiety buffer hypothesis is the inverse of the MS hypothesis. For example, participants in one study filled out a survey about their personality and goals and were later given personalized feedback about themselves based on answers to the previous survey. Some participants received feedback insisting they had weaknesses in their personality and unrealistic goals, while others received positive feedback insisting they possessed strong personalities and realistic goals. Participants

were then shown a clip about death. What researchers found was that those who received the positive feedback reported lower anxiety after watching the clip than those who had received negative feedback (Solomon, et al., 2015). While the MS hypothesis shows the power of death reminders on an individual's psyche, the anxiety buffer hypothesis demonstrates the power of self-esteem as a psychological buffer.

Lastly, the death-thought accessibility (DTA) hypothesis predicts that if a worldview creates protection against death anxiety, then weakening that worldview will cause death-related thoughts to be increasingly accessible in an individual's unconscious. One way to measure the accessibility of these death-related thoughts is with word completion exercises, in which a person is given incomplete words such as COFF_ or SK _ L_ , which could be completed as either death-related (COFFIN and SKULL) or non-related (COFFEE and SKILL). The primes for this experiment can take the form of an essay that attacks the subject's religious, scientific, or political worldviews. For example, a study on Canadian subjects demonstrated that reading a website critical of Canada increased DTA (Schimel, et al., 2007).

The decades of evidence amassed in TMT studies demonstrate promising potential for science educators by offering insight into how these aforementioned values, beliefs, and emotions are deeply seated in the unconscious and not easily changed by the presentation of basic factual information from a disinterested party. TMT shows us that we more strongly defend elements of our worldview and identity when we are reminded of our death (MS), that we experience a decrease in anxiety when our views are reinforced, and that death comes closer to the surface (DTA) when our worldview is attacked.

For example, we can see how the examples in these studies are clearly applicable to teaching climate science (see van Kessel, 2020, for a much fuller explanation of the relationship). First, the discussion of climate change can prime MS. Discussions of extinctions, the erosion of coasts and underwater coastal cities, human displacement and hunger, all serve to increase the listener's awareness of mortality. Second, some in the United States have a worldview that is skeptical toward climate science. This has the effect that the discussion of climate change is perceived as a threat to their worldview, which needs to be defended in order to prevent increased anxiety.

For our task here, we are particularly interested in those researchers that have looked at climate change in the context of TMT (Wolfe & Tubi, 2019; additional work can be found in their extensive bibliography). While this is in some ways a recent use of TMT, in other ways the concerns of climate change have always been part of the understanding of TMT. For example, it has been known for more than a decade that the disasters brought about by climate change functions to prime MS, an insight that is now being utilized in the hopes of improving climate science education (Motyl et al., 2018). Moreover, very early in TMT research, it was recognized that mortality salience increased conspicuous and harmful consumption, which is counterproductive to many of the aims of climate change mitigation and climate science education (Solomon et al., 2015; see also, Mandel & Heine, 1999).

Though many are recognizing the implications for TMT and discourse on climate change, the work of Catherine van Kessel deserves particular notice as she is working specifically on how TMT can be utilized to improve climate science education (van Kessel, 2020; van Kessel, Heyer, & Schimel, 2020; van Kessel & Burke, 2018). One of van Kessel's useful insights is that teaching the climate crisis often activates two TMT triggers, working both as an MS prime and an attack on a worldview. These triggers can lead students to deploy defensive barriers and strategies to defend themselves against these perceived attacks, including decreased reading comprehension, increased in-group/out-group dynamics, and other strategies (defensive compensatory reactions) leading up even to actual violence (van Kessel, 2020). Van Kassel seeks to make science educators aware of these triggers and their implications, so that they can manage their classroom in such a way as to mitigate these defensive barriers and strategies. She elaborates on pedagogical strategies of "providing conceptual tools, narrating cascading emotions, carefully using humor to diffuse anxiety, employing language and

phrasing that does not overgeneralize divergent groups, and priming the idea of tolerance" (van Kessel, 2020, p. 129).

We find van Kessel's work extremely compelling and recommend it. We would like to build on work such as hers by noting a lack of emphasis on what we consider to be a very important aspect, namely the important role of religion in the construct of the worldview that so often contributes to climate skepticism (van Kessel, 2020). The goal of this short article is to assert that science educators can make even greater use of the insights of TMT in the classroom setting by also adding religious literacy to the mix, in an attempt to better mitigate the negative responses to climate science.

Looking Forward: Religious Literacy in the Classroom

Despite the progress science educators are making by applying theoretical models such as TMT to their pedagogies, religious literacy remains lacking from educational strategies on a large scale. TMT theorists have recognized for decades that religion plays a role in the dynamics of mortality salience and self-esteem striving, as the small example from above with the Christians and Jews demonstrates. Religious identities are often such a force of belonging and meaning-making that those who strongly identify as religious tend to have lower levels of death anxiety, which is consistent with the anxiety buffer hypothesis (Jong et al., 2018). Religions provide resources for people to belong to something greater than themselves, and sacred texts, rituals, and beliefs provide concrete structures for religious adherents to understand both the world around them and themselves. Additionally, and importantly, some religions provide a strong source of self-esteem and anxiety buffering because they promise a literal immortality in addition to, or in lieu of, various cultural and symbolic immortalities (Vail et al., 2010). A cultural system that offers the opportunity to live a life that will never die physically or symbolically is alluring because it protects against many forms of death or impermanence while also anchoring the person as both a member of a community as well as a significant part of the cosmic order (Vail et al., 2010). When those systems are challenged, whether religious or not, the sense that death and meaninglessness looms large strikes again, activating a defensiveness that often leads to tighter boundaries between in-group and out-group as well as increased engagement and adherence to one's own religious traditions.

Regardless of the high promise religion offers to become a cure-all for death anxiety, some religious people are more affected than others, and religious identity is not always the greatest source of security. For educators, understanding when religious identity might be threatened is more important than merely understanding that religious identity is a source of security. While this research still requires more robust cross-cultural data, there is some evidence demonstrating that the relationship between religiosity and death anxiety is curvilinear (Jong et al., 2018). In other words, those with the lowest levels of death anxiety tend to be both the most religious and the most non-religious, which leaves those caught between the certain and secure commitments of the religious and nonreligious with the highest levels of death anxiety. The implication of this finding reveals that religious people draw varying amounts of security, identity, and value from their religious traditions, and it warns educators who wish to gain knowledge of their religious students not to make unilateral assumptions about the value students draw from such traditions.

With the above caveat in place, another finding draws attention to one kind of religious person more likely to be affected by material in a classroom on science education: religious fundamentalists (RF). Even though we in the United States know that white Christian fundamentalists (often termed evangelicals) are the group most resistant to climate change, the term fundamentalist here is not exclusively about the historical tradition of Christian fundamentalism originating from the late 19th century (for a discussion about the relationship between climate change, theology, and political identity, see Jenkins et al., 2018). In psychological research, fundamentalism signals a more general position of cognitive inflexibility with regards to religious commitments (Altemeyer & Hunsberger,

1992; Hood et al., 2005). For example, much of the research on RF's examines the correlation between fundamentalism and prejudice. It is rather intuitive in light of TMT to see that many of these results show RF's have higher prejudice towards minority groups or those deemed deviant from the religious norm, such as LGBTQ people in conservative religious spaces. In other words, when there is a challenge to the norm of a fundamentalist perspective, the individual is more prone to defensive behaviors, which in many instances manifests as prejudice (Johnson et al., 2011).

What is the connection then between RF, TMT, and science education? Students who possess more RF perspectives may be more resistant to education that challenges the theology informing their own understandings about climate science, as well as other topics such as evolution, women's health, and sex education. Educators have seen this happening for a long time already (Roberts, 1988; Lindberg & Numbers, 2008). As for the example of climate science education outlined above, moving beyond any obstacles religious perspectives may pose first requires that educators understand how religion is connected to the issue. For climate science, adding to one's pedagogical strategy might mean understanding how some conservative strains of Christian theology argue that climate action is not warranted because God promised he would never destroy the Earth after the biblical flood (Vox, 2017). In contrast to this, there is the stewardship model based on the Genesis account of God granting humans dominion over creation, and concerned students who ask questions or come to office hours might be more receptive knowing there are ways to integrate science education into their theological perspective (Prothero, 2008).

Arguing for religious literacy in the public school system, Stephen Prothero makes note of how Americans lack the most basic knowledge about world religions, including their own traditions. He started to notice this trend in the classroom over years of teaching, realizing that students over time could not follow lectures that were contingent upon knowing basic information such as what the New Testament is, or that Buddhism is a world religion. Prothero does not advocate for religious literacy for its own sake, but rather believes religious illiteracy has costs worth avoiding (Prothero, 2008). For example, George W. Bush was unaware of the differences between Sunni and Shiite Muslims, which contributed to the mismanagement of U.S. foreign policy in the Middle East in the early 2000s. For Prothero, religious literacy is actually a civic duty, and one which ideally would reduce life-threatening conflicts. Borrowing from this line of reasoning, we can say there are risks in science education when religious literacy is not built in to the broader education system, risks that lead to science skepticism and exacerbate issues of public communication about the significance of science. For some educators, the thought of being overly concerned with student religious identities may feel burdensome and unnecessary, especially when those identities are not shared by teachers in the room. Regardless of how educators feel about the relevance, silliness, severity, or veracity of religious beliefs and practices, the fact remains that educators will be contending with these aspects of their students whether or not educators are aware of a student's commitments.

In the end, what does the religious layer of identity mean for science educators, and what are we asking of them? The goal of this essay is not to articulate particular strategies for incorporating religious literacy, nor is it to ask science educators to fulfill a chaplain-like role to comfort students in light of what science has to say about the world and its hazards to human life and meaning. The goal here is to raise awareness of the important puzzle piece of religious identity for science educators, especially for those who already understand the working mechanisms of TMT in their classrooms. While understanding mortality salience and its influence on unconscious fears is insightful for any particular classroom, the burden of implementing religious literacy and other insights from TMT should not fall solely to individual educators, but rather it must be a systemic change in which the current education system places more value on understanding the role of culture on student learning. Learning never happens in a vacuum.

For science educators perhaps already taking into account the terror management dynamics within their classrooms, taking the additional step to integrate religious literacy into their terror

management literacy will build upon the steady foundation of insight TMT already offers. What this looks like across classrooms will differ, but being honest and open about conflicts between religion and science without foreclosing options for students who want both scientific literacy and committed religiosity is a crucial step. At its best, a religion-informed TMT toolkit can enable teachers to anticipate the needs and fears of students while granting teachers a deeper effectiveness in their own pedagogies. TMT researchers have demonstrated that when people feel they have solutions to address death anxiety after a death reminder, they are less likely to fall into the patterns of defensiveness that TMT research generally shows (Solomon et al., 2015). The key is making clear to students that accepting scientific findings is not diametrically opposed to religion itself. Teachers, and especially college instructors, may ask students and even themselves to bracket out various moral, religious, and ethical commitments while in the classroom trying to engage a new idea for the sake of learning. This kind of bracketing out of one's personal commitments can lead to rich, empathic learning, but personal bracketing has its limitations. Not every student or every teacher will at all times be able to set aside core elements of their cultures to become objective observers when considering topics in the classroom that directly challenge those commitments and ways of being in the world. In fact, evidence from studies on cognition and implicit bias suggest that total and conscious personal bracketing is nearly impossible because input from the environment is constant and much of it happens unconsciously (Northcote, 2004; Banaji & Greenwald, 2016). In the end, the practical outcome of taking religion seriously during science education is that educators will understand more deeply the source of religious students' anxieties, confusion, and even anger. As it turns out, the source of resistance in these cases - the deep roots of religion and culture - will not be changed with a basic presentation of more facts and figures.

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