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More Than Meets the Eye: There's More to Meaning Maintenance Than Violated Expectations

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In the target article, “The Five ‘A’s of Meaning Maintenance: Finding Meaning in the Theories of Sense-Making,” Travis Proulx and Michael Inzlicht (this issue) took on an ambitious and laudable task. They sought to provide an all-encompassing framework for organizing disparate lines of interdisciplinary theory and research on people’s compensatory responses to what they call “meaning violations.” They connected the dots between these disparate lines of thought by proposing that (a) all of the “meaning” threats emphasized in various “threat-compensation” theories share a common psychophysiological signature, (b) all of the compensatory behaviors emphasized in these disparate theories (what they call the five “A’s”) are fueled by the same overarching motivation, and (c) all of these compensatory responses are interchangeable because they serve the same underlying palliative function. In many ways, Proulx and Inzlicht’s attempt to make sense of the sense-making literature does, in fact, make a lot of sense. Indeed, both authors of this reply appreciate the meaning maintenance model (MMM) and believe that the research derived from it has played a critical role in advancing social psychological inquiries into existentially oriented domains. That being said, we also believe that the broad assertions made by Proulx and Inzlicht are a little overambitious, sometimes conceptually problematic, and not always consistent with the data.

In developing a commentary on this target article, we must admit that it was a bit challenging to offer views that haven’t at least been touched on elsewhere. For example, there has been considerable discourse between terror management theory (TMT) and MMM researchers over the years, and we did not find this presentation of the MMM to be that different from previous descriptions (e.g., Proulx & Heine, 2006). In addition, there has been seemingly little empirical extensions of the MMM to address what we consider to be very important critiques of this model (e.g., ambiguity about how the MMM accounts for people’s preference for one “meaning” over another; Pyszczynski, Greenberg, Solomon, & Maxfield, 2006; or whether the MMM presents a truly novel account of existing theories). We believe that these existing critiques of

the MMM remain relevant and, in some places, echo those sentiments. However, our primary goal with this commentary was to offer some fresh ideas about the ambiguities within the MMM and to provide an updated account of the TMT literature that raises questions about the merits of the MMM.

Our reply entertains the following three propositions. First, we propose that not all of the “meaning threats” emphasized in the target article are threatening because they violate expectations or lead to a feeling of not knowing what to expect. For this proposition, we specifically focus on what Proulx and Inzlicht call the ultimate meaning violation, the awareness of mortality. Second, we propose that just because multiple laboratory threats (being exposed to absurd art, thinking about one’s mortality) lead to comparable outcomes on a specified dependent measure, it does not mean that they elicit identical processes or that they should be subsumed by a single theoretical framework. We argue that doing so unnecessarily compresses and obscures the dynamic richness of existing “threat-compensation” frameworks. Finally, we propose that the distinctions that Proulx and Inzlicht argue will be possible once we reboot the field using the MMM can be and are being pursued right now using existing theoretical frameworks. To this end, we briefly describe existing research that has elucidated diverse responses to distinct existential threats and discuss possible future research.

Do All Compensatory Behaviors Result From Undermined Expectations? The Case of Death Awareness

The core tenant of the MMM (as presented in the target article) is that the feeling of our “understanding” being undermined lies at the heart of all “threat-compensation” behaviors. It is suggested that this feeling is fundamentally triggered by the violation of expected relationships or the experience of not knowing what to expect. From this view, compensatory responses to any “meaning threat,” from exposure to schema-inconsistent information to pondering our

own mortality, are ultimately fueled by the need to reduce the aversive state of *meaninglessness*. Such an analysis is intuitively appealing on the surface, but we think it's reasonable to question whether all of the threats that the authors wish to couch within the MMM have their effects solely because of issues pertaining to expectations. Do all of these threats actually violate expectations or foster the feeling of not knowing what to expect? We believe that the answer to this question is no. As has been argued previously (Landau, Greenberg, & Kosloff, 2010), we suggest that the awareness of mortality is ultimately problematic because we possess the requisite intellectual sophistication to understand that death is certain. Of course, death has a number of potential consequences for the self and close others and thus may trigger a variety of behaviors aimed at mitigating distinct concerns (e.g., buying life insurance so our families have financial security; see Florian & Mikulincer, 2004). However, we would argue (and will provide evidence) that death cannot be boiled down to an expectancy threat. We realize from a fairly early age that death is an inevitable part of the cycle of life. We expect death and have a pretty good sense of what death means (annihilation of the self). From our perspective, then, reminders of mortality could arguably be described as expectancy confirmations, rather than violations.

Of course, if death awareness is not ultimately about threatened expectations, then a conceptual framework distinct from the MMM is needed to understand what lies at the heart of people's compensatory responses to mortality concerns? According to TMT (Solomon, Greenberg, & Pyszczynski, 1991), the awareness of death triggers compensatory responses not because mortality awareness conflicts with our expectations but because mortality awareness conflicts with our desire to not die. As it turns out, most of us kind of like being around and we are not particularly excited about the fact we will one day no longer be around. We, like other organisms, are around because our bodies possess a number of distinct systems that have proven advantageous for survival. From the antibodies that help ward off dangerous pathogens to the cognitive processes and psychological motives that promote goal-directed behavior, we are wired for life in the service of genetic replication. Yet, the neurological and cognitive sophistication that has helped us survive and dominate the planet has also rendered us uniquely aware of what it means to be a living organism. We know that death is a certainty of life; yet, despite this certainty, we are not particularly excited about facing it. Thus, TMT suggests that at least one threat—the awareness of death—triggers compensatory efforts to resolve something other than violated expectations or a sense of uncertainty. It triggers compensatory responses to resolve an outcome that we completely expect but want very much to avoid (i.e., death).

There is now an abundance of data suggesting that responses to mortality salience are specifically geared toward symbolically avoiding death and not simply the restoration of some general sense of “sense.” For example, Routledge and Arndt (2009) examined the extent to which people would report willingness to self-sacrifice (die for one's nation) after mortality salience. They proposed that because death is an unavoidable outcome, people may be willing to sacrifice themselves to protect an enduring (immortal) group identity when reminded of the limits of the physical self (e.g., mortality). To test this, after mortality salience was manipulated, Routledge and Arndt introduced an experimental condition in which an alternative immortality-providing group identity was rendered salient. Specifically, British participants were asked to imagine joining an organization that they will be a part of for the rest of their lives. In one condition, the organization was described as a group that would continue to exist and thrive long after its current members are gone (a symbolic immortality-providing group). In the other condition, the organization was described as a group that will not continue to exist after its current members are gone (a transient group). Subsequently, participants were asked to indicate the extent to which they would be willing to sacrifice themselves for their nation (e.g., “I would die for England” and “My personal safety is not as important as the continuation of the British way of life”). Mortality salience increased self-sacrifice, but only among participants in the transient group condition. Participants who imagined joining an organization that would continue to exist long after they were gone did not evidence an increased willingness to self-sacrifice for England after mortality salience. That is, when given an alternative means of symbolically escaping death, participants were not so motivated to die for country. We believe that this is but one of many studies that evidence that mortality salience is more than a generalized existential threat that motivates a generalized compensatory response of clinging to the familiar. In fact, if death awareness is threatening because people do not know what to expect as the MMM suggests, then it seems odd that a reminder of mortality would increase self-sacrifice (i.e., approaching the unexpected).

A number of studies have similarly evidenced other compensatory responses to mortality salience that are specifically focused on either literal or symbolic death-transcendence (e.g., increased belief in the divine, Norenzayan & Hansen, 2006; desire for offspring, Fritsche et al., 2007; symbolic immortality, Shepherd, Kay, Landau, & Keefer, 2011) or relate to aspirations that implicate a desire to escape the mortal shackles imposed by the laws of nature (e.g., flight fantasy, Cohen, Sullivan, Solomon, Greenberg, & Ogilvie, 2011; denial of similarity to other biological beings, Goldenberg et al., 2001; belief that ingroups are real entities,

Castano, Yzerbyt, Paladino, & Carnaghi, 2006). In all, such studies suggest that people do not want death to be the end of the self and go to great lengths to ensure that it is not.

Other studies further cast doubt on the MMM position that death is ultimately about expectations by demonstrating that people are attracted to opportunities for immortality even if such opportunities are at odds with personal beliefs and schemas (i.e., even when immortality is an expectation violation). In other words, from a MMM standpoint, if mortality salience is about expectancies, then it should always lead people to cling to the familiar or seek to confirm their established schemas or ideologies. However, studies have evidenced that people sometimes gain existential benefits from beliefs that run counter to their personal viewpoints. For example, Dechesne and colleagues (2003) found that literal immortality (found only in religious worldviews) successfully mitigates death concerns amongst relatively nonreligious Dutch participants. Specifically, Dutch participants read either an essay that provided evidence that there is or is not an afterlife or a control essay. Mortality was then rendered salient and participants were provided an opportunity to engage in self-esteem defense as previous research has shown that reminders of mortality motivate efforts to bolster the self (a meaningful self is a more enduring self). Results demonstrated that mortality salience engendered self-esteem defense, unless participants were given evidence of life after death. In other words, individuals who tend to not believe in life after death (i.e., relatively secular Europeans) appeared to find solace in the potential for life after death (an expectation violation) as being given evidence for this possibility mitigated the need to engage in other compensatory behaviors in response to mortality salience. However, perhaps these participants, despite being European, did believe in an afterlife. If this were the case, then the essay providing evidence for life after death would have been an expectation confirmation, not a violation. More convincing evidence would be provided if this type of effect was observed with a sample of atheists. Heflick and Goldenberg (2012) recently found such evidence. In their research, Heflick and Goldenberg hypothesized that atheists would be better defended from the threat of death awareness if their atheist worldview was challenged, not supported. They conducted a study in which religious, agnostic, and atheist participants read an article providing evidence for or against the prospect of life after death, thought about their own death or a control topic, and then evaluated an essay criticizing the United States (a standard worldview defense measure). Mortality salience increased nationalistic worldview defense, but only when the prospect of life after death was not affirmed. Critically, this pattern was observed among all participants, even atheists. Mortality salience did not increase nationalistic worldview de-

fense among participants (religious or not) who read the article suggesting that there is life after death. In other words, even though the essay arguing for life after death ran counter to the established schemas of atheists, it mitigated their need to respond to mortality salience with worldview defense.

We believe that studies such as those just reviewed strongly cast doubt on the assertion that death awareness is merely an expectancy threat that leads us to turn to the familiar as part of a generalized sense-making motive. Instead, these studies suggest that death is an outcome we all expect but do not like and that any evidence that offers hope for death transcendence is soothing, even if such evidence itself violates expectations or runs counter to our own beliefs and schemas. In other words, according to TMT, though most of the time people do cling to the familiar because the familiar can offer some form of death transcendence, when the most viable way to escape the finality of death is unfamiliar, people may prefer the unfamiliar over the familiar.

In sum, though we certainly agree that the expectancy account offered by the MMM may provide an attractive account of many psychological threats, we propose that a more careful examination of research on existential strivings suggests that there are a number of observed effects that are not easily explained by this model. We have provided a few examples that suggest the knowledge of mortality (as well as people's response to it) may not fit so nicely in the model proposed in the target article. And though we do not have the space to consider them here, we would note that there are many other examples of meaning-relevant activities that do not unambiguously conform to the MMM. For example, personal meaning is tied to high self-regard and self-enhancement motives often trump self-verification motives (i.e., positive feedback is more desirable than expected negative feedback; Sedikides, 1993). In addition, meaning-relevant strivings sometimes involve an orientation to self-discovery, exploration, and personal growth, which suggests that when making-meaning people sometimes prefer something new over something familiar.

If Similar Outcomes Equal Similar Processes, Do Dissimilar Outcomes Equal Dissimilar Processes?

If the awareness of mortality is conceptually distinct from other expectancy violating threats, then one might ask why other expectancy violating experiences (e.g., transmogrifying experimenters) trigger similar responses. Indeed, this is in many ways the guiding logic of the MMM. Because other threats (e.g., uncertainty, implicitly experienced inconsistencies) yield means on a dependent measure that do not differ significantly

(at least in some studies) from mortality salience inductions (e.g., Proulx & Heine, 2008), there must be a common process underlying compensatory responses to all of these various threats. We would like to raise two points of concern with this analysis. First, we ask what we believe to be fair and equally compelling questions about the parallel consequences of seemingly unrelated threats. Why do similar effects on a single dependent measure necessarily imply that those effects are fueled by the same processes or motivations? Is it not reasonable to suggest that distinct motivations and compensatory processes sometimes lead to identical behaviors? We believe such questions are difficult to answer on the basis of experimental data showing null comparisons between two conditions. Second, we also suggest that the MMM's emphasis on the similarity in consequences of various threats ignores an already vast literature demonstrating divergent consequences of different "meaning" threats. Thus, we question how well the MMM really accounts for a large number of existing findings in the literature.

Let us first consider the issue of whether similar outcomes on a dependent variable should be taken as evidence for a unified and common underlying process/motivation. In equating expectancy violations with mortality salience, MMM studies have largely relied on the traditional worldview defense paradigm developed by TMT researchers and have shown that a variety of threats unrelated to death lead to increased worldview defense. Perhaps everyone familiar with the threat compensation literature now knows this. However, the original rationale for the worldview defense paradigm was to test a basic TMT derived hypothesis: If one of the functions of cultural worldviews is to provide protection from the threat of death awareness, then heightening death awareness (mortality salience) should consequently heighten defense of one's cultural worldview (i.e., the mortality salience hypothesis). The paradigm was never meant to provide evidence that death is the only threat that will trigger worldview defense or that attenuating death concerns is the only function of cultural worldview defense. Therefore, demonstrating that threats other than death awareness inspire worldview defense does not provide any conceptual clarity as to whether the awareness of death triggers processes that are similar to an expectancy violation. It merely indicates that both of these threats lead to worldview defense. Suggesting otherwise would require one to interpret a null comparison (similar results between mortality salience and expectancy violation conditions; Proulx & Heine, 2008) as conclusive support for a theoretically derived hypothesis. Just as it would be unwise to conclude that two people attend church for identical reasons simply because they are both in attendance, concluding that the defense of a cultural value serves the same function regardless of its evoking threat may be problematic. It fails to

recognize that the very same outcome may result from fundamentally different motivations and processes.

In raising this issue, we are of course not denying that mortality salience, expectancy violations, threats to personal control, or feelings of uncertainty can at times foster similar outcomes in the laboratory. We are simply saying that this does not, in and of itself, provide any conceptual clarity about whether compensatory responses to these threats are fueled by the same motivation or process. Moreover, focusing exclusively on the studies that have detected similar outcomes on a single dependent measure ignores the fact that myriad studies have found certain threats to elicit distinct outcomes relative to others. Over the last 25 years, many studies have shown that mortality salience fosters predicted responses distinct from the effects of other generally aversive and "meaning-relevant" comparison conditions (e.g., uncertainty, meaninglessness, failure, dental pain, extreme physical pain, paralysis, violated expectations). For example, mortality salience has increased interest in tanning (relative to uncertainty) when the attractiveness of tanned skin was made salient (Routledge, Arndt, & Goldenberg, 2004), has decreased meaning in life (relative to thoughts of unexpected outcomes) for those low in the need for structure (Vess, Routledge, Landau, & Arndt, 2009), and has increased the appeal of fame (relative to temporal discontinuity, feelings of uncertainty, and feelings of meaninglessness; Greenberg, Kosloff, Solomon, Cohen, & Landau, 2010). The many studies that report findings such as these obviously tell us little about whether threats like expectancy violations are in fact threatening or whether they lead to compensatory responses. From our perspective, though, they do suggest that the processes underlying the effects of death awareness cannot simply be reduced to more generalized feelings of anxiety, uncertainty, meaninglessness, or a threatened sense of self. If they could, wouldn't we expect to see parallel effects resulting from these other threats? And if we wouldn't expect to see parallel effects, then what does that say about the "common process" that underlies all of the threats emphasized in the MMM?

We suspect that the eagerness to conclude that mortality salience effects result from the same processes that fuel other compensatory responses largely results from an overly simplistic view of the TMT literature. When reading the target article, we found it to be a little disconcerting that the lion's share of empirical support for "similar outcomes" consists of main effects on traditional worldview defense. The main effect of mortality salience on worldview defense was the first effect used to support TMT's broad analysis, so we can understand the temptation to view mortality salience effects through this singular lens. However, the TMT literature is now full of nuanced effects on diverse outcomes, ranging from self-esteem striving

(e.g., Vess & Arndt, 2008), to indices of well-being (e.g., Routledge et al., 2010; Vess et al., 2009), to discomfort with the physical body (e.g., Goldenberg et al., 2001), to reactions to modern art (Landau, Greenberg, Solomon, Pyszczynski, & Martens, 2006). In addition, TMT has been extended in ways that allow for nuanced predictions about who will respond to mortality salience in one way, whereas other individuals will respond to mortality salience in another way. For example, individuals high in need for structure appear to respond to mortality salience by clinging to the “familiar,” whereas those low in need for structure respond with an increased interest in novelty and the “unfamiliar” (Juhl & Routledge, 2010; Routledge, Juhl, & Vess, 2010; Vess et al., 2009). Nothing about the framework emphasized in the target article reflects or accounts for these complexities, and in places the target article even minimizes them. For example, the effect of mortality salience on creativity mentioned by Proulx and Inzlicht (this issue, p. 329) was actually only observed among those low in need for structure, and other studies have observed that mortality salience decreases or has no effect on creativity depending on other moderating variables (Arndt, Greenberg, Solomon, Pyszczynski, & Schimel, 1999; Routledge, Arndt, Vess, & Sheldon, 2008). It is currently unclear how the MMM might explain these nuances. The fact that mortality salience effects depart from other meaning-relevant threats (e.g., Vess et al., 2009) and that some psychophysiological consequences of expectancy violations do not mediate mortality salience induced worldview defense (Arndt, Allen, & Greenberg, 2001) only compound the issue. Thus, before we abandon TMT’s specific analysis and replace it with the MMM, we think empirical evidence that the MMM can account for the full scope of the TMT literature is needed. At the very least, it might be informative to consider empirical pursuits that move beyond a single main effect on a single type of outcome.

Why Can’t We Start Making These Distinctions Now?

Proulx and Inzlicht (this issue) propose that once we acknowledge the underlying similarities between different theories and set the MMM at its proper place at the head of the theoretical table, we can begin to explore distinctions in the ways that people do meaning maintenance as a function of the specific type of meaning threat. As we have already discussed, we are not confident that all of the findings in the literature related to psychological defenses cleanly square with the ideas advanced by the MMM. That being said, it also seems to us a little odd to suggest that we must reconceptualize other theories using the MMM framework to be able to start making distinctions in how people re-

spond to different threats. The distinction between self-perception theory and cognitive dissonance theory was not elucidated by first creating a broader conceptual model of their similar effects and only then attempting to disentangle their differences. Thus, can we not engage in efforts to differentiate the threat compensation literature by using the theoretical frameworks already in place?

We believe the answer to this question is yes. Using existing theories, we can design experiments that will unearth distinct underlying processes in people’s responses to different threats. For example, we have argued that people’s problem with mortality is that they don’t want to die, not that it represents an expectancy threat. And we have considered studies that support this position by showing that schema inconsistent information (presenting atheists with evidence for an afterlife) mitigates the effects of mortality salience. If we understand the MMM correctly, then we would hypothesize that schema inconsistent information should not mitigate the effects of an expectancy violation. Experiments guided by this general logic would be rather easy to fashion and would allow us to pit predictions from various threat-compensation frameworks against one another. And this is already happening. For example, in a direct effort to consider how different threats may trigger distinct outcomes, Shepherd, Kay, Landau, and Keefer (2011) demonstrated that compensatory defense of cultural values occur only when that defense specifically addresses the salient threat. Threats to personal control elicited worldview defense responses geared toward the restoration of order, mortality salience triggered worldview defense geared toward bolstering symbolic immortality, and uncertainly fostered worldview defense geared toward bolstering cultural identity. Each of these distinct effects are consistent with the respective theories that emphasize their triggering threats and do not require a broader model (i.e., the MMM) to parsimoniously explain them. If anything, the MMM’s emphasis on the broad substitutability of compensatory responses could make an interpretation from its point of view particularly cumbersome.

Of course, our ability to tease apart distinctions between various types of threats and the processes underlying threat compensation ultimately rests on the validity of our experiments. We completely concur with the statement made by Proulx and Inzlicht (this issue) that “our experimental manipulations are more akin to shotgun blasts than sniper shots” (p. 35). Thus, one challenge when seeking to make distinctions between different threats is to isolate the specific variable of interest. In the case of mortality salience, the difficulty in doing so lies in the fact the death is an actual phenomenon that has a number of consequences. As Proulx and Inzlicht and others (see Florian & Mikulincher, 2004) have suggested, thoughts of death may

trigger a wide range of concerns. We would argue that this issue also extends to other threats and, for that reason, believe that researchers should endeavor to fashion experimental manipulations that act more like sniper shots by isolating the specific dimension of interest. It is also important to fashion targets (i.e., dependent variables) that offer opportunities to distinguish one shot from another (e.g., Sheperd et al., 2011). The point we wish to make here is that our ability to make distinctions between different types of “meaning-relevant” threats most likely depends on our ability to devise methods that test competing hypotheses, not on our adoption of the MMM as the explanatory framework for all compensatory threat responses.

In short, the general finding that mortality salience and other threats lead to some form of compensatory defense is well established in the literature. The point we wish to convey is that we can and scholars already are making distinctions in how people navigate existential concerns. And we are frankly not sure how relabeling all of these findings as variants of the MMM would provide any advantage over how they are currently conceptualized. In fact, many of these findings would, perhaps ironically, make a lot less sense if we were to describe them using the MMM. Instead of a wholesale reboot in which we couch all of our ideas in the language of MMM, perhaps a more reasonable endeavor would be to start comparing and contrasting ideas from different theories related to meaning to determine for whom and under what conditions do different existential threats provoke distinct responses. In this endeavor we may truly begin to understand how different threats are both similar and unique.

Closing Thoughts

We would like to reiterate our appreciation of the MMM. We particularly welcome the efforts made both in the current target article and in previous presentations of the MMM to bring ideas from existential philosophers such as Kierkegaard and Camus into mainstream experimental social psychology. The MMM tells us a lot about how subtle disruptions to our expectations can promote broad efforts to restore meaning, and we think that some of the experimental methods for testing these ideas over the years have been incredibly clever. Nevertheless, as voiced in our commentary, we believe the model, by trying to explain so much and supplant other theories on the basis of a few studies, is just a little overambitious. It seems to us that the richness of the threat compensation literature would be diluted if we only focused on what the MMM can currently account for. That being said, the MMM is a welcome addition to the growing field of experimental existential social psychology and will

no doubt inspire a significant amount of research and debate. This is, and has already been, a good thing.

Acknowledgments

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Note

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