

## Chapter 3

# What's Death Got to Do With It? Controversies and Alternative Theories

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*First, you know, a new theory is attacked as absurd; then it is admitted to be true, but obvious and insignificant; finally it is seen to be so important that its adversaries claim that they themselves discovered it.*

James (1907)

If the natural reaction to a new scientific theory is skepticism, which can only be seen as right and proper, a theory's worth is measured not only by the known observations it can accommodate but also by its ability to generate new observations and withstand repeated attempts to invalidate it over time. Among psychological theories, terror management theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986) certainly aroused great skepticism at its inception, and three decades later it has generated an impressive body of data. The theory endures, but it continues to attract controversy.

At least, the terrain on which disagreements with TMT play out is now clearly demarcated. Namely, critics still regularly challenge TMT's provocative central claim, that people's adherence to specific belief systems (i.e., *cultural worldviews*) and desire to view themselves as personally valuable (i.e., *self-esteem*) reflect efforts to defend against death anxiety. Hardly anybody disagrees that people are drawn to worldviews that imbue reality with meaning and structure, or that they want to view themselves as good and worthy denizens of the world—or even that raising concerns about death *causes* people to “defend” their beliefs and self-esteem. Instead, the controversy has been and is still centered on whether death concerns, per se, are at the root of worldview and self-esteem dynamics, or are simply an example of the kind of psychological threats that elicit behaviors seemingly oriented toward preventing or managing anxiety.

In this chapter, I present an overview and evaluation of theoretical alternatives to TMT and some of the methodological and conceptual challenges and controversies raised by research inspired by both TMT and the alternative theories.

### **OBSERVATIONS TO BE EXPLAINED: WHO NEEDS TERROR MANAGEMENT?**

TMT was originally proffered as a relatively parsimonious explanation for two human tendencies that social psychologists had highlighted for decades: the need for self-esteem and the persistent difficulty that people have dealing with people different from themselves (e.g., out-group members; [Tajfel, 1982](#)). Psychologists had found these two tendencies to be related—for example, people derive self-esteem from their group affiliations, so they are motivated to create positive distinctions between the in-group and the out-group, leading to unfriendly behavior designed to enhance the in-group’s (and by extension, one’s own) perceived value at the expense of the out-group ([Tajfel & Turner, 1979](#)). However, no contemporary theory adequately addressed the question of why we need self-esteem to begin with.

Drawing largely from Ernest Becker’s (e.g., 1973) work, TMT posits that, among animals, humans’ psychological proclivities are uniquely shaped by the awareness of and aversion to death.<sup>1</sup> Self-esteem helps people transcend the limitations of mortality by reflecting potency, purpose, or personal value that will endure beyond their literal death. Other people—that is, one’s cultural cohorts—serve as the basis of this *symbolic immortality*, in that one “lives on” in the memories of others, through one’s contributions to society, through one’s offspring, and so on. And yet, this abstract version of immortality depends on a culturally shared interpretation of reality that confers value on being a certain kind of person who does certain kinds of things. Hence, other people in one’s group and the values they share are integral to self-esteem’s effectiveness as a means of coping with mortality.

This helps to explain people’s difficulty getting along with out-groups: by definition, the out-group represents a different cultural conception of reality that threatens to undermine the perceived validity of one’s own; disparaging out-group members is a way of affirming one’s own cultural values. Moreover, cultural conceptions of reality generally appeal to people’s desire to transcend death by depicting the world as a benevolent, orderly, predictable place. This kind of conceptual structure gives order to chaos and generally contributes to the sense of “rightness” in the world.

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1. Other animals are averse to physical threats; and some are likely self-aware, but humans are the only ones we are certain are necessarily aware of their own inevitable mortality and about the various implications pertaining to that awareness.

In sum, each person knows that he or she will die one day, which is an emotionally catastrophic realization for an animal because knowledge of inevitable death disrupts and undermines the many motivational processes that support self-preservation. Individuals cope with death awareness—thereby defusing a potentially debilitating psychological threat—by striving to be valuable members of a meaningful reality. The apotheosis of these dynamics can be seen in the great religions of the modern world, which offer not only symbolic but also literal immortality—an afterlife—to those who live up to the standards prescribed by religious traditions.

It follows that TMT has the ability to explain a great diversity of human behavior and psychology. Practically everything that people strive for can be construed as either directly supporting continued life (e.g., eating, avoiding injury, etc.) or indirectly supporting symbolic immortality: the pursuit of self-esteem and/or meaning. Why do people pursue meaningful work, to excel at what they do relative to others, to drive nice cars, wear attractive clothing or maintain nice homes, read self-help books, go to church, or push their children to be high achievers? Self-esteem and meaning can—in principle—explain all of this, so to the extent that TMT explains the pursuit of self-esteem and meaning, it is a powerful theory, indeed.

## FROM THEORY TO DATA

In short, TMT is conceptually appealing because it potentially explains a wide range of psychological phenomena in a rather parsimonious way. Critically, TMT also provides a scientific paradigm for testing its propositions via its *mortality salience* (MS) and *anxiety-buffer* hypotheses. The MS hypothesis states that if self-esteem and worldviews compensate for existential insecurity, then reminding people of the source of that insecurity—death—should increase efforts to protect or augment self-esteem and worldviews. In a complementary fashion, the anxiety-buffer hypothesis states that if self-esteem and worldviews protect against death anxiety, then bolstering them should make people more psychologically resilient, whereas threatening them should make people vulnerable. (A later-derived prediction, the death-thought-accessibility (DTA) hypothesis, states that if death concerns are the underlying process mediating self-esteem and worldview dynamics, then threats to either should increase the ease with which death thoughts are brought to mind.)

As covered in [Chapter 1](#) of this volume, all three hypotheses have received impressive empirical support. Terror management research has focused predominantly on the MS hypothesis, with experiments in which participants are randomly assigned to respond to two open-ended questions about their own mortality or another topic, before a delay-and-distraction task (typically, a mood report) and then an outcome measure. Sometimes, a moderator variable (e.g., gender or personality traits) is included and found

to interact with MS in affecting the outcome. A review of 277 such experiments found robust support for TMT, and suggested that death is "... a qualitatively unique threat" (Burke, Martens, & Faucher, 2010, p. 186).

Meanwhile, a review of research testing the DTA hypothesis found that threats to worldviews or self-esteem increase DTA (Hayes, Schimel, Arndt, & Faucher, 2010). These and other DTA findings lend impressive support to TMT's central hypotheses.

However, most empirical findings can be interpreted in more than one way, and that is true of many findings generated by TMT research. In general, research testing TMT's three main formal hypotheses is prone to two points of criticism. The first is that MS effects might be attributed to something that MS represents or instills (e.g., negative emotion), rather than death per se. The second is that measures of DTA are unreliable or invalid. Theoretical approaches that have sought to reinterpret TMT research findings in alternative ways have generally focused on the first (although in some ways the second is closer to the heart of the matter—more on that later).

Early in the theory's history, TMT researchers strove to rule out the possibility that MS effects could be due to (1) something like negative affect (e.g., anxiety, fear, or sadness) or (2) some other characteristic about death, such as the fact that it is universal, inevitable, and involves a "future concern." One way they did this was to simply measure self-reported affect and to show that, ironically, MS itself did not cause changes in affective state, seemingly eliminating the likelihood that just any aversive topic would produce parallel effects.<sup>2</sup> Another way was to devise control conditions that would pit MS against other aversive, universal, and (sometimes) inevitable or future-oriented topics, for example, dental pain or academic exams (e.g., Greenberg et al., 1995).

The results of TMT studies in this vein seemed to suggest not only that MS effects were not due to simple "mood repair"—that is, responding to a negative topic with efforts to improve one's mood—but also that the effects were exclusive to the topic of death; other aversive topics consistently failed to generate the same self-esteem striving and worldview defense. However, this conclusion is problematic for a number of reasons. For one thing, it implies that death awareness is the only (negative) stimulus that elicits self-

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2. Although many studies have replicated the null effect of MS on subsequent self-reports of mood, Lambert et al. (2014) challenged TMT's claim that MS-related affect is immediately or preemptively suppressed, on both conceptual and methodological grounds. In particular, they noted that the richly emotional subjective experience that potentially accompanies MS and is likely expressed in participants' written narratives about MS has yet to be adequately plumbed. Furthermore, they provided evidence that self-reports of mood can, at least, detect an increase in *fear* (specifically) after MS, as compared to a neutral control condition. Clearly, more work is needed on this topic, although given that other negative topics beside mortality have now been found to elicit defensiveness, the more trenchant implications of disconfirming TMT's "affect-free" claim have already been realized.

esteem striving and worldview defense, but TMT itself acknowledges that mortality concerns are only part of the explanation for humans' need for self-esteem and meaning. Second, and more importantly, the finding that other motivationally relevant negative topics do not produce "terror management effects" violates TMT's own internal logic.

Here's why, according to TMT's anxiety-buffer and DTA hypotheses, any threats to either self-esteem or worldviews should raise DTA, and according to TMT's MS hypothesis, increased DTA should elicit terror management defenses. Because pondering the possibility of failing an academic exam would seem to threaten self-esteem, then it should also produce terror management effects.

Validating this view, studies show, for example, that threats to self-esteem resulting from a failure experience increase derogation of an out-group member (e.g., [Fein & Spencer, 1997](#)); conversely, worldview threats (i.e., via a cognitive dissonance induction) increase self-affirmation tendencies (e.g., [Tesser, Crepaz, Collins, Cornell, & Beach, 2000](#)). Such findings certainly muddy the waters, but they also raise the possibility of reinterpreting the findings of TMT studies that by the late 1990s numbered in the several dozens ([Pyszczynski, Greenberg, & Solomon, 1999](#)).

## ALTERNATIVE PERSPECTIVES: OVERVIEW

*Whenever a theory appears to you as the only possible one, take this as a sign that you have neither understood the theory nor the problem which it was intended to solve.*

[Popper \(1972, p. 266\)](#)

As TMT developed and began to amass empirical support, it took position alongside other influential mainstream theories, evidenced most clearly in 1997 with the publication of both a chapter in *Advances in Experimental Social Psychology* ([Greenberg, Solomon, & Pyszczynski, 1997](#)) and a target article in *Psychological Inquiry* ([Pyszczynski, Greenberg, & Solomon, 1997](#)). The latter stimulated challenging commentaries, some of which foreshadowed more fully developed critiques that would follow in the next decade. For example, [Snyder's \(1997\)](#) commentary argued that TMT would be more parsimonious if it were reconceptualized such that instead of death anxiety, the desire for *control* over desired outcomes was posited to be behind the effects seen in TMT studies. In other words, MS undermines people's sense of control, and therefore subsequent efforts to affirm worldviews or self-esteem could be seen as attempts to regain control. Similarly, [Pelham \(1997\)](#) suggested the possibility of a generalized anxiety-maintenance system whose operation happened to be most strongly stimulated by death as opposed to comparatively benign control topics.

Several years later, Van den Bos and Miedema (2000), Van den Bos (2001), and McGregor, Zanna, Holmes, and Spencer (2001) reported that *uncertainty* salience caused similar worldview defenses as did MS. This led McGregor et al. to suggest that the experience of personal uncertainty might be an active ingredient in MS effects.

These were among the first empirical findings to imply that at least some MS effects were not unique to MS. Around the same time, another important development occurred when Mikulincer and colleagues began to integrate TMT and attachment theory, arguing that close relationships should be considered to be a third, partially independent terror management mechanism in addition to self-esteem and worldviews (see Mikulincer, Florian, & Hirschberger, 2003, for a review). According to their reasoning, close (attachment) relationships function as individuals' first defense against the terror of mortality; self-esteem and worldviews follow. Close relationships, they argued, buffer existential concerns in symbolic ways: they provide people with a sense of continuity and lastingness (i.e., symbolic immortality), in that they will "live on" in the minds of those to whom they are connected; and they symbolically expand people's sense of self through a mechanism of identification with another person.

One important source of support for adding attachment to TMT was a series of studies by Florian, Mikulincer, and Hirschberger (2002), who found that MS (but not thoughts of physical pain) led participants to increase their level of commitment to their close relationships' partners, consistent with the MS hypothesis. Consistent with the anxiety-buffer hypothesis, they also found that contemplating relationship commitment eliminated people's engagement in worldview defense after MS. And, aligning with TMT's DTA hypothesis, thoughts of relationship problems and separation increased people's DTA.

Mikulincer et al. (2003) argued that the symbolic self-transcendence mechanisms underlying close relationships' effectiveness as death anxiety buffers are largely culturally invariant, suggesting they are, to a degree, distinct from TMT's cultural worldview mechanism. They also appear to be partially independent from self-esteem, because people have been found to increase their desire for relationship commitment after MS even when their relationship partner is imagined to pose a self-esteem threat by being critical (Hirschberger, Florian, & Mikulincer, 2003).

Together, the suggested addition of close relationships to TMT and the finding that threats other than MS could elicit worldview defense fueled the view that the defensive processes revealed by TMT research were more fluid than originally thought, perhaps pointing to a more general anxiety-maintenance process. In 2005 and 2006, three alternative perspectives were formally proposed espousing different versions of this view. One, the security system model (Hart, Shaver, & Goldenberg, 2005) built on Mikulincer and colleagues' integration of TMT and attachment theory, arguing on the

basis of TMT's own tenets and hypotheses that threats to any one terror management mechanism should cause defensiveness on the part of the other (unthreatened) mechanisms. Another, the meaning maintenance model (MMM; Heine, Proulx, & Vohs, 2006) asserted that instead of death, it is disruptions to *meaning* that cause people to defend themselves—in this view, self-esteem and worldview defense are seen as attempts to restore meaning. Finally, McGregor (2006) argued that MS is an example of a “poignant self-threat” that people construe as a goal disruption, which, in turn, instigates “offensive” defensive responses—efforts to re-engage behavioral approach systems in times of threat in order to alleviate discomfort or anxiety.

The three alternative perspectives represented different kinds of stance toward TMT. The security system model, essentially agnostic as to whether death should be considered the “worm at the core” of defensive processes, was the most conservative. Based on the TMT's own conjecture about the development of terror management, we (Hart et al., 2005) thought that the psychological defenses observed in TMT studies on young–adult participants represented a developmental elaboration of a structurally and functionally similar, albeit more simplistic, process of emotion regulation controlled by the attachment system in early childhood, well before the development of death awareness. The point of the model was to highlight the insights of an attachment theory analysis, to reorient the study of psychological defense around the concept of psychological security and insecurity (i.e., not just death concerns), and to emphasize the interconnectedness and interchangeability of different kinds of threat and defense.

By contrast, the MMM sought to radically reinterpret TMT's body of evidence, if not to supplant TMT entirely. According to the MMM, people strive to satisfy a master motive to maintain mental models of the expected relations (i.e., associations) between concepts—here, meaning is defined as such associations. Hence, meaning comprises all knowledge, both major and minor, that a person has about the world, but also provisional beliefs, personal memories, expectations about future events, and so on. Information inconsistent with one's knowledge networks disrupts meaning, is appraised as threatening, and prompts a person to attempt to restore meaning either in the relevant semantic domain or in another, unrelated one. This compensatory meaning restoration is referred to as *fluid compensation* (Allport, 1943), in the sense that the compensatory dynamics are not compartmentalized but can flow among many different domains.

McGregor's (2006) view (see also McGregor, Nash, Mann, & Phillips, 2010; Nash, McGregor, & Prentice, 2011) also offered a parsimonious reinterpretation of TMT data, and subjugated the role of death concerns in its analysis of psychological defense. Now dubbed the reactive approach motivation (RAM) model, it points not to meaning but to uncertainty stemming from goal conflict as the psychological threat that people respond to with compensatory defensive efforts. Like the security system model and the

MMM, it, too, emphasizes fluid compensation processes. The RAM perspective also offers a potentially generative account of the biological (i.e., neurological) underpinnings of defense; similar to the security system model, it posits that newer, symbolic defenses are built upon ancient architecture, including behavioral approach and avoidance systems (Gray & McNaughton, 2000), that mediate physical self-protection.

### ALTERNATIVE PERSPECTIVES: FINDINGS AND CONTROVERSIES

In sum, by TMT's 20th birthday, at least three alternative formulations had been formally advanced, with empirical evidence to support them. More have sprung up since then, and a truly comprehensive description of them all would be beyond this chapter's scope. In order to describe and evaluate them, then, I will group them based on central commonalities (see also Hart, 2014). In general, the theories can be considered to be *relational*, *self-focused*, *epistemic*, or *domain-general*. In the following sections I describe each approach in additional detail, while addressing pertinent empirical results and conceptual strengths and weaknesses.

### RELATIONAL PERSPECTIVES

Although no single theory focusing on the psychological dynamics involved in close relationships has been offered as a full alternative to TMT, one could certainly be derived. To wit, several prominent theories can be used to generate many of the same predictions as does TMT. For one, sociometer theory (e.g., Leary & Baumeister, 2000), which views self-esteem as an internal gauge of social standing that alerts people to the need to improve their standing, is consistent with TMT findings that MS increases worldview defense and self-esteem striving. From a sociometer perspective, MS likely represents a threat to belongingness (because death is the end of social relationships), which should increase not only people's desire for self-esteem, but also their desire to affirm the shared beliefs that connect them to others in their social group(s). Sociometer theory could also predict, in principle, the finding that threats to self-esteem, worldviews, or relationships increase DTA (Florian et al., 2002), because from an evolutionary perspective, social exclusion is literally an existential threat, or at least it would have been in environments of evolutionary adaptedness. According to sociometer theory, a threat to self-esteem is an indicator of potential social exclusion (as, obviously, would be a relationship threat); and a threat to worldviews might subtly undermine a person's sense of being part of a cohesive social unit.

Along similar lines, Navarrete, Kurzban, Fessler, and Kirkpatrick (2004) argued that self-esteem striving and worldview defense in response to MS represent adaptive efforts to establish or maintain social connectedness

during times of existential threat. That is, when people feel threatened, it is to their advantage to seek social support, which could be accomplished directly or indirectly through ingratiation, coalition building, or increasing one's social status. Again, from an evolutionary perspective this makes quite a bit of sense and does not require one to invoke elaborate defense mechanisms.

It is difficult to rebut the central thrust of a relationally centered analysis, but one way in which it falls short is its inability to explain many empirical facts consistent with TMT's hypotheses, including the cross-cultural ubiquity of worldviews with particular, palliative content—belief in a just world (Lerner, 1980; why not belief in an *un*just world?), belief in an afterlife, and so on. A purely relational perspective would also have trouble explaining why exposure to uncanny stimuli—for example, incongruous word pairs like “turn-frog” and “careful-sweater”—seem to cause people to engage in worldview defense by advocating greater punishment for a worldview transgressor (i.e., a prostitute; Randles, Proulx, & Heine, 2011).

By contrast, TMT can handle such findings so long as such epistemically ironic stimuli raise unconscious death concerns (i.e., because they undermine the well-ordered meaning structures that provide a bulwark against death anxiety), which has indeed been documented, albeit in a limited way (Webber, Zhang, Schimel, & Blatter, 2016). In sum, relational perspectives provide plausible alternative explanations for some TMT findings, but not to an extent that would render TMT obsolete.

## SELF-FOCUSED PERSPECTIVES

Several theories depict people as fundamentally motivated to protect some core aspects of the psychological self, and these theories are largely compatible with TMT, save for the fact that they do not link psychological self-preservation to physical self-preservation. Among the most prominent, self-affirmation theory (Steele, 1988) posits a motive to maintain self-integrity, a construct similar to global self-esteem. Because self-affirmation theory considers a sense of moral self-worth, living up to societal expectations, and self-efficacy to be among the various supportive elements of self-integrity, the theory dovetails with TMT's conception of self-esteem and worldviews as being structurally and functionally related (e.g., self-esteem comes from living up to worldviews; worldviews serve as a basis for self-esteem). In fact, one of the chief experimental manipulations of self-affirmation is an exercise in which participants write about cherished values, so the theory's concept of self-integrity aligns neatly with TMT's dual-component anxiety-buffer conceptualization. (Self-affirmation theory considers social relationships to be an important part of the self-concept, also fitting nicely within an expanded TMT that includes close relationships as a third anxiety-buffer.) Again, the theories diverge at the point at which TMT identifies death as the

distal threat that gives self-integrity (and its various components) special gravity.

But what if we were to conceptualize mortality as simply a threat to self-integrity? If self-integrity theory is correct, then perhaps one does not need TMT to explain findings that MS increases defense of self-esteem and worldviews; one needs only to entertain the assumption that death threatens a person's continuing efforts to maintain a sense of moral self-worth (among other things).

Indeed, self-affirmation theory, and Tesser's (2000) related perspective on the interchangeability of self-evaluation maintenance mechanisms, can also accommodate the apparent fluidity of self-relevant defenses: the fact that a self-evaluation threat causes spontaneous affirmation of personal values, for example, or the fact that cognitive dissonance induction causes self-esteem defenses (Tesser et al., 2000).

However, as in the sphere of relational theories, TMT proponents would point to data suggesting that self-esteem and value threats increase DTA (Hayes, Schimel, Faucher, & Williams, 2008), which suggests that DTA may be relevant to the defensive process explaining the substitutability of diverse self-esteem defenses. And, as with relational perspectives, a strict self-focused perspective cannot deftly handle some pertinent data, including the disproportionate appeal of worldviews with existentially palliative—but not necessarily self-affirming—content. For example, many devout Christians believe in an afterlife even as their religious worldview also tells them that they are fundamentally flawed “sinners.” (If one were predicting the nature of popular worldviews from a self-affirmation perspective, original sin would probably not be at the top of the list.) As with relational perspectives, self-focused perspectives surely have merit in their own right, but seem incapable of matching TMT's explanatory scope.

## EPISTEMIC PERSPECTIVES

Epistemic interpretations of TMT's body of research include the MMM, the uncertainty management model (e.g., Van den Bos, 2009) as well, perhaps, as similar approaches such as the McGregor et al.'s (2010; Nash et al., 2011) RAM perspective, which emphasize the experience of uncertainty or anxious arousal following a “discrepancy” (Jonas et al., 2014) as the primary cause of defensive behavior. To some extent, these perspectives have merged into a general integrative framework according to which psychological defensiveness (or “threat-compensation”) reflects a common mechanism of palliative response to any episode in which one's goals or expectations are violated (i.e., “disanxiousuncertilibrium”; e.g., Jonas et al., 2014; Proulx, Inzlicht, & Harmon-Jones, 2012; Tritt, Inzlicht, & Harmon-Jones, 2012). Such violations are thought to result in aversive physiological arousal, which in turn prompts people to restore equanimity. They can do

this through direct attention and engagement with the threat, by assimilating it into existing schemata or adjusting schemata to accommodate the new information (i.e., cognitive dissonance reduction). Alternatively, people can seek compensatory palliation through affirming or otherwise maintaining meaning in another domain; for example, by defending salient worldviews or by affirming the self-concept.

The epistemic view is compelling in that it is difficult to find empirical examples where defensiveness is not preceded by some kind of “meaning violation,” as defined by the MMM. However, to the extent that epistemic perspectives define meaning violations as the discrepancy between new information and existing mental representations, two potential problems arise. One is that, given that people hold innumerable mental representations—many of which are likely internally inconsistent—it is difficult to predict precisely when a piece of information will be construed as a violation versus a confirmation.

Another problem arises from the notion that the motivational relevance of new information is trivial relative to whether it is perceived as a meaning violation. And yet the recent epistemic perspectives make precisely this claim (e.g., Proulx et al., 2012).

As with relational and self-focused theories, this neutrality regarding worldview (i.e., meaning) content makes epistemic perspectives struggle to account for what is presumably psychologically important content that characterizes most major religions and other ubiquitous worldviews. Moreover, as I have argued elsewhere (Hart, 2014, 2015), despite occasional evidence that people would rather be right than happy (as in self-verification theory; e.g., Swann, Wenzlaff, Krull, & Pelham, 1992), in other cases it seems that people are anything but “anxiously aroused” when their expectations are disconfirmed, as epistemic perspectives predict.

For example, if I expect that a tasty dish of spicy chicken tikka masala will give me heartburn, but in fact it does not, then according to epistemic perspectives, my expectations have been violated and should prompt me to experience aversive arousal and to engage in subsequent defensiveness. Anecdotally, I can report that the empirical evidence on this front does not comport with the epistemic perspectives’ prediction!

To take another, less frivolous example, would we expect people with chronically negative expectations about relationships to become anxiously aroused and defensive if suddenly they find things are going their way? Evidence suggests not: for example, people who are insecurely attached (i.e., anxious or avoidant), who by definition harbor negative views of and expectations about their relationships, imagine being loved and supported, they become less defensive, not more (e.g., Saleem et al., 2015).

Epistemic perspectives also predict that having negative expectancies confirmed should *not* elicit anxious arousal and defensiveness. Again, at least in the realm of attachment, this seems not to be true: compared to secure

individuals, insecure individuals are *more* prone to defensiveness in reaction to ostensibly expectation-confirming thoughts of separation, such as a break-up or divorce (e.g., [Hart et al., 2005](#)). These findings appear to contradict the notion that defensiveness is solely (or even primarily) a function of expectations instead of, say, desires or hopes.

I do not want to give the impression that the empirical evidence is unequivocal on this topic, but in addition to the empirical evidence, personal experience and common sense do not comport with epistemic perspectives' postulate that meaning violations elicit defensiveness regardless of their implications for other motivational processes. In my view, the preference to have one's expectations—whether positive or negative—confirmed can be a powerful motive, but it exists alongside what may in many cases be a stronger preference to have them disconfirmed. In other words, people have motives and goals that extend well beyond the desire to maintain cognitive consistency; in many cases (including attachment), these motives are specially attuned to ecologically relevant stimuli and seem to operate with minimal concern for whether the stimuli are consistent or inconsistent with expectations. These motives and goals seem, to me, to be at the center of psychological defense. Cognitive consistency is among them, but is not the only one. (For an additional, excellent discussion of these issues, see [Routledge, Juhl, & Sullivan, 2009](#).)

### DOMAIN-GENERAL PERSPECTIVES AND THE SECURITY SYSTEM

One way to resolve the problems with epistemic perspectives' implication that epistemic threats (i.e., meaning or expectancy violations) should cause defensiveness regardless of the motivational relevance of the threat is to introduce (or reintroduce) a taxonomy of goals in addition to mere meaning maintenance. Putting goal disruption at the center of the analysis (leaving aside, for now, the content of the goals) has the advantage preserving many valuable insights from existing theories on defensive processes. One example is [McGregor et al.'s \(2010\)](#) RAM perspective, which seems to have begun as an epistemic perspective but has since become more domain-general because it posits that *goal disruptions* are the distal impetus for the anxious uncertainty that triggers (approach-oriented) defensive responses. This is consistent with theories that highlight the sense of personal *control* as a phenomenological state that people are strongly motivated to sustain ([Kay, Gaucher, Napier, Callan, & Laurin, 2008](#); [Snyder, 1997](#)).

As I have noted, though, even if a domain-general goal-disruption perspective is appropriately broad relative to the task of accommodating the diverse experimental results generated by TMT and alternative theories, and even if “discrepancy” is a valid description of the neural code or mental

process that mediates defensive behavior, surely there is more than incremental value to theories that provide a taxonomy of motives or goals whose violation is the prime activator of defensiveness. What are the goals that are important to people, and why? Here, TMT and an integrated perspective including attachment theory (Hart et al., 2005; Hart, 2015; Mikulincer et al., 2003) seem to have something to offer, by specifying both the ontogenetically primitive (e.g., attachment) and mature (e.g., existential) concerns that people assiduously tend to in the course of daily life and when prompted with psychology questionnaires.

The security system perspective (Hart et al., 2005) begins with the assumption that attachment is rightfully viewed as a primitive psychological defense system. Even though the attachment system functions to ensure that immature humans are physically protected and cared for, from children's perspective, the primary goal of the attachment system—proximity to a caregiver—is about regulating distress (Bowlby, 1982). Hence, it makes sense that the familiar “turning-to” of a comfort-providing attachment figure in times of distress would serve as the primary template upon which more elaborate defenses are scaffolded. From there, the security system perspective adopts TMT's emphasis on the psychological equation between attachment (being loved and cared for) and self-esteem, as caregivers conditionally (or at least, disproportionately) provide love and support when children are behaving well; naughty behavior (“bad me”) is met with a threatening withdrawal of affection. According to TMT, this is how self-esteem assumes its anxiety-reducing properties. Later, cultural value systems (worldviews) provide additional basis for self-esteem, as well as depicting the world in existentially comforting ways (e.g., a place that is orderly, benevolent, meaningful, and enduring). As the anxiety-buffer hypothesis implies, once developed, the resulting interlaced defensive structures form a unitary bulwark against psychological vulnerability. Whenever one component of the overarching system is threatened, the entire system tends to activate to deal with the threat, tempering its effects on psychological security.

This view implies that even if death looms largest as an unavoidable, uncontrollable, permanent, and overarching threat, it is nevertheless plausible that events that undermine relationships, self-esteem, meaning, or other sources of security might cause compensatory defensive responses in a psychologically sensitive animal even if death were not “a thing”—though I would not contest the notion that death contributes to these supportive structures' “specific nature and impetus” (Becker, 1973, p. 11). In other words, the extent of humans' proclivity for defensiveness and certain of its specific qualities (e.g., orientation toward symbolic immortality) are probably best explained by mortality concerns, though defensiveness can otherwise be understood as a general process that confers adaptive benefits by regulating humans' sensitive attunement to threats.

## WHERE DO WE GO NOW?

Theoretical alternatives to TMT have generated an important body of evidence and an ongoing series of vigorous and interesting scholarly dialogues. A recent outcome of these developments is the publication of an integrative chapter (Jonas et al., 2014) highlighting core commonalities among TMT and its various alternatives. Among these are (1) an emphasis on either goal conflict or uncertainty as the central theme underlying all threats, (2) a taxonomy of types of defensive responses (e.g., direct and indirect; individual and social), and (3) a sketch of the neurobiological underpinnings of threat and defense. Certainly, this integration owes much to TMT itself, including, for example, the distinction between immediate, threat-focused (i.e., *proximal*) and delayed, indirect/symbolic (i.e., *distal*) defensive modes. I believe the alternative theories deserve to be taken seriously in their own right, even if TMT seems to hold an advantage in the sheer scope of empirical data it can account for.

A definitive resolution will await further evidence and, likely, methodological innovation, because presently, the relevant science is full of discrepancies, inconsistencies, and shortcomings (Hart, 2014). One conundrum concerns the fact that many TMT studies that compare MS to ostensibly parallel alternative (nondeath) threats have found only an effect of MS on relevant outcome measures, whereas many other studies have found that alternative threats have similar or identical effects when compared to MS.

What is the cause of these inconsistencies? One possibility is that researchers have yet to design precise manipulations of psychological threat. Indeed, calibrating the potency of categorically different threats induced in laboratory conditions is one of the major unaddressed challenges in this field. Even if death were not the central threat to psychological equilibrium, it is likely one of the strongest, which makes it difficult to match precisely in experimental comparisons. This could explain some of the empirical inconsistencies.

Another outstanding problem is that of individual differences—TMT and its alternatives are theories about normative psychological processes, but they also bear implications for how people who differ by dint of cultural background, personality, gender, cognitive style, and other variables handle, or should be expected to handle, psychological threats. And yet there, too, the evidence is murky enough that it is premature to draw overarching theoretical conclusions from it. The literature on TMT and alternative theories both include instances of moderated effects where one might expect main effects, and vice versa. To my knowledge, nobody has proposed a satisfactory explanation for this state of affairs. The best one can say is that the field is a work in progress.

The biggest challenge to adjudicating between TMT and the alternative theories is a methodological issue: how to isolate death concerns (or

anything else) as the active ingredient in defensive processes. Because death threatens all things in life, it is impossible to create an experimental comparison condition that makes mortality salient but does not also threaten relationships, self-esteem, meaning, and so on. And because nobody knows enough about the brain to be able to tell precisely what various neural circuits represent, the current approach bearing most promise, perhaps, is the attempt to measure DTA. If a truly reliable, valid, and sensitive DTA measure was devised, then it would not be difficult to assess whether meaning threats and the like induce defensiveness because they increase DTA (but not other negative thoughts). Unfortunately, measures of DTA are not very good, partly because they usually fail to measure the accessibility of other constructs, including, critically, general negativity (Hart, 2014).

It is also possible that as-yet underexplored mechanisms could be at play. One tantalizing candidate may be *psychological pain*. Research over the last decade or so has suggested that parts of the brain's anterior cingulate cortex (ACC) may be involved in the experience of pain in response to social "injury" (e.g., Rotge et al., 2014). The ACC has also been implicated heavily in neuroscience models of psychological threat and defense (e.g., Jonas et al., 2014; Tritt et al., 2012), and some studies have even observed worldview defense responses as a consequence of subliminal exposures to the word "pain" (Holbrook, Sousa, & Hahn-Holbrook, 2011). Perhaps these connections are worth exploring further.

## CONCLUSION

*As in political revolutions, so in paradigm choice—there is no standard higher than the assent of the relevant community... this issue of paradigm choice can never be unequivocally settled by logic and experiment alone.*

Kuhn (1962, p. 93)

Tempting though it may be, causal reductionism is tricky business. Single-factor explanations for complex phenomena often are insufficient. It remains an open question whether the various processes involved in psychological threat and defense (including, but perhaps not limited to, self-preservation, attachment, self-esteem, and worldview-related goals and motives) are organized around a single, identifiable "core"—that is, death or some other concerns. To me, the reciprocal developmental and functional relations among defensive processes suggest that psychological defense is a multifaceted phenomenon consisting of multiple tools and tactics that people acquire throughout the lifespan to cope with a fusillade of diverse threats both large and small—separations, losses, humiliations, uncertainties, and other forms of psychological injury—which may have no true core. It is also possible that different instances of defense reflect different processes.

As of now, plausible alternative theoretical explanations for the results of TMT studies pose a challenge to researchers who wish to test the theory. But they do not, in themselves, indicate that the theory is wrong. The fact that death threatens virtually everything that people care about means that teasing apart the motivational components of “terror management” is daunting business that may well be outside the capacity of experimental social science methodology.

Laboratory studies have established TMT’s viability, but it seems fair to say they will not be the final adjudicator; nor is it my purpose here to offer even a provisional determination. Perhaps other modes of inquiry will shed additional light on this fascinating and widely relevant topic; in the meantime, the consensus—or lack thereof—among researchers in this field will hold sway.

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