The Meaning Maintenance Model:
On the Coherence of Social Motivations

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The meaning maintenance model (MMM) proposes that people have a need for meaning; that is, a need to perceive events through a prism of mental representations of expected relations that organizes their perceptions of the world. When people's sense of meaning is threatened, they reaffirm alternative representations as a way to regain meaning—a process termed fluid compensation. According to the model, people can reaffirm meaning in domains that are different from the domain in which the threat occurred. Evidence for fluid compensation can be observed following a variety of psychological threats, including most especially threats to the self, such as self-esteem threats, feelings of uncertainty, interpersonal rejection, and mortality salience. People respond to these diverse threats in highly similar ways, which suggests that a range of psychological motivations are expressions of a singular impulse to generate and maintain a sense of meaning.

Nostalgia for unity, that appetite for the absolute illustrates the essential impulse of the human drama.

> Albert Camus, *An Absurd Reasoning*

In 1949, Jerome Bruner and Leo Postman published a study in the *Journal of Personality* entitled, "On the perception of incongruity: A paradigm." According to Bruner and Postman, people maintain mental representations of expected relations, paradigms, that in turn regulate their perceptions of the world. Consider the paradigm for playing cards: 52 cards, 4 suits, 2 colors, and a wide array of associated features that are demarcated into distinct categories. What would happen to this paradigm if people encountered a card that did not fit into any of their recognized categories? For exam-ple, what would happen if they were confronted with a black queen of hearts? How would they perceive this card, and how would this card affect their existing playing card paradigm?

Bruner and Postman (1949) designed an experiment to test this very question. In their experiment, most participants began by ignoring the novel relationships among features, or more precisely, they failed to see them. Instead, they automatically revised their perceptions of the anomalous cards such that the suits and colors matched their mental representations of expected relations (black hearts were seen as red). After repeated presentations, however, most participants gradually became aware of the anomalous features, and unprompted, began to revise their playing card paradigms to account for these newly related features. Curiously, about 10% of participants found themselves trapped in a kind of paradigm purgatory, whereby they recognized that the cards with which they were presented had unexpected features, but they could not articulate the odd relationships. Consequently, they could not revise their existing paradigm to accommodate the changes. Even more curious, these same participants often experienced acute personal distress, with one participant exclaiming "I can't make the suit out whatever it is. It didn't even look like a card that time. I don't know what color it is now or whether it's a spade

or a heart. I'm not even sure what a spade looks like. My God!" (p. 213).

If we were to grant that some of Bruner and Postman's (1949) study participants experienced actual distress in this situation, one wonders why anyone should be troubled when presented with a black queen of hearts. Why care about playing cards? We propose that the unease experienced by participants in Bruner and Postman's study reveals a much broader concern that underlies a diverse array of human motivations. This unease reflects a need for meaning.

Western Existentialism

We begin our investigation of a need for meaning by considering the literature that has most directly explored this concept. A number of philosophers, whom we term the *Western existentialists*, have argued that a key element of the human condition is a never-ending pursuit of meaning. The meaning that is the goal of this search is a fundamentally relational mode of being. Kierkegaard (1843/1997, 1848/1997), for example, wrote extensively on the manner in which the self is experienced in relation to that which lies outside the self. He suggested that the self is experienced as "a relation that relates itself to itself, and in relating itself to itself, relates itself to another" (p. 351). Heidegger (1953/1996) expanded on these notions to such an extent that he would no longer use the word *self* in any manner, preferring the expression *Da-sein* (being there) to express a being so connected to its environment that any perceived discrimination was mere illusion. Camus (1955) would later survey the relational themes of the existential literature and extract as its central obsession a universal inclination toward what he termed "the nostalgia for unity:" a belief that all reality comprises a single, interconnected whole.

Regardless of whether the world is a relational whole, Camus (1955) suggested that the desire to perceive reality in such a manner, to both discover and construct relations represented "the essential impulse of the human drama" (p. 13). Camus reiterated a line of existential thought by claiming that all cultural endeavors—philosophy, science, art, and religion—are manifestations of the universal human need to relate all elements of perceived reality into a single, unified, cohesive framework of expected relationships.

It was Camus' (1955) contention that, for the Western existentialists[1], meaning is relation. Human beings are meaning-makers, driven to make connections, find signals in noise, identify patterns, and establish associations in places where they may not inherently exist. People are meaning-makers insofar as they seem compelled to establish mental representations of expected relations that tie together elements of their external world, elements of the self, and most importantly, bind the self to the external world. When elements of perceived reality are encountered that do not seem to be part of people's existing relational structures, or that resist relational integration, these inconsistent elements provoke a "feeling of the absurd," a disconcerting sense of fundamental incongruity that motivates people to re-establish a sense of normalcy and coherence in their lives.

The Meaning Maintenance Model

At first glance, matters of meaning may seem sufficiently esoteric and tenuous as to lie outside the purview of experimental psychology. However, such concerns are being put to rest by the chorus of voices across multiple subdisciplines who have taken to studying meaning-related phenomena. Echoes of Camus's nostalgia can be heard in research on schemata (e.g., Markus, 1977), worldviews (Thompson & Janigan, 1988), assumptive worlds (Janoff-Bulman, 1992), domains of the known (Peterson, 1999), a sense of coherence (Antonovsky, 1979), unity principles (Epstein, 1981), and above all, terror management theory (e.g., Pyszczynski, Greenberg, & Solomon, 2004; Solomon, Greenberg, & Pyszczynski, 1991) and the new science of experimental existential psychology (e.g., Greenberg, Koole, & Pyszczynski, 2004). The commonality among these diverse lines of research is an attempt to articulate how humans strive to create and maintain order, certainty, and value in light of challenges and abruptions in their endeavours to do so.

We propose an overarching model that parsimoniously integrates the diverse literatures on meaning-making, as well as the literatures on self-esteem maintenance, uncertainty reduction, affiliative motives, and terror management theory. We term this model the *meaning maintenance model* (MMM), and use it to make three central claims that are addressed and developed over the course of this article.

The first of these claims is an expansion of a claim that has been made by psychologists for decades and philosophers for centuries (Aristotle, 1987; Baumeister, 1991; Freud, 1930/1991; Heidegger, 1953/1996; James, 1911/1997; Kierkegaard 1848/1997): *meaning is relation*. This is to say, meaning is what links people, places, objects, and ideas to one another in expected and predictable ways. Because we take *meaning*, *relation*, and *association* to be synonymous in this context, we will use these words inter-

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[1]Although we have highlighted here the arguments of the Western existentialists, we are not proposing that a desire to perceive reality as a relational whole is peculiar to Western thought. Rather, similar arguments are evident in the literatures on Buddhism, Taoism, and Hinduism, and we submit that a nostalgia for unity is characteristic of religious sentiments more generally.

changeably, such that meaning is the expected relationships or associations that human beings construct and impose on their worlds. We further propose that there exists a series of basic realms in which people seek to discover or apply meaning. People seek coherent relations within the external world, within themselves, and between themselves and the external world. Generally speaking, the most important relations people seek are those between the self and the external world, and perceived breakdowns in their mental representations of those relationships provoke the strongest efforts to reconstruct meaningful associations.

The second claim involves humans as meaning makers. We propose that humans possess an innate capacity to identify and construct mental representations of expected relationships between people, places, objects, and ideas. As self-conscious entities, humans also possess a unique capacity to reflect on these representations and can consequently detect structural breakdowns and inconsistencies. Humans find it problematic to be correspondingly robbed of meaning, or otherwise confronted with meaninglessness, and therefore seek to reconstruct a sense of meaning whenever their meaning frameworks are disrupted. The greater the disruption in their mental representations of expected relations, the more urgent is the need to regain meaning.

The third and final claim is the most central to the MMM, and it is the one on which we focus our review of the empirical literature: Disruptions to meaning frameworks lead people to reaffirm alternative frameworks. Notably, these efforts need not be directed at the specific domain of meaning that has been jeopardized. The MMM thus proposes a *fluid compensation model* (cf., McGregor, Zanna, Holmes, & Spencer, 2001; Steele, 1988) whereby people whose meaning frameworks have been disrupted react by bolstering or reaffirming other meaning frameworks that remain intact. Meaning is sought in domains that are most easily recruited, rather than solely in the domain under threat. We submit that the foundation of many motivational phenomena investigated by psychologists is the ability to construct and assert alternate relational matrices in the presence of threats to another source of meaning.

Meaning is Relation

More than any other branch of human understanding, the Western existentialist philosophers of the 19th and 20th centuries attempted to grasp the structure, origin, and importance of people's relational structures, focusing on how these structures govern expectations and shape perceptions of the world, the self, and people's place within the world. Although these theorists often used terms like *relation* or *association*, the term most often used was *meaning*.

In simple terms, meaning is what connects things to other things in expected ways—anything and any way that things can be connected. Meaning is what connects the people, places, and things around oneself: hammers to nails, cold to snow, mothers to daughters, or dawn to the rising sun. Meaning connects elements of the self: thoughts, behaviours, desires, attributes, abilities, roles, and autobiographical memories. Meaning is what connects people to that which lies beyond the self: the people, places, and things that surround them. Meaning can come in as many forms as there are ways to relate these elements of perception and understanding.

The MMM highlights the considerable array of domains in which people create meaning frameworks and engage in fluid compensation in response to threats to those frameworks. Building on ideas by prominent existential theorists (Heidegger, 1953/1996; Kierkegaard, 1843/1997; and Camus, 1955, in particular), as well as existing models in the psychological literature, (Janoff-Bulman, 1992; Park & Folkman, 1997; Thompson-Janigan, 1988) the MMM proposes three general domains wherein humans seek to achieve stable, unified relations. These realms are broadly construed of as the external world, the self, and the self in relation to the external world. We next explore these domains in turn.

Elements in the external world consist of the expected relationships between the people, places, objects, and events that constitute one's external environment, where "expected" is meant to signal an imagined or assumed reality, as opposed to how the world exists in actuality. This realm consists of the sum total of beliefs about the world. For example, people expect clocks to go forward, dogs to not speak, snow to be cold, and the queen of hearts to be red. People strive to make these propositional frameworks unified and internally consistent, which results in efforts to avoid and reduce contradictions (Heidegger, 1953/1996; Heider, 1958).

The self comprises all beliefs related to oneself, which is to say the expected relations that unite oneself both across time (diachronically) and across roles and contexts (synchronically). People seek to establish that the person they were 10 years ago is related to the person they are now, that they are somehow the same person despite enacting different roles in life, that their attitudes are not in conflict with their freely chosen behaviours, and that their actions, beliefs, and perceptions about themselves make sense (Chandler, Lalonde, Sokol, & Hallett, 2003; Festinger, 1957; Goffman, 1973; Harmon-Jones & Mills, 1999; Ross, 1989). As with elements of the outside world, people want their self-governing mental representations of expected relations to be internally consistent, free of contradiction, and devoid of dissonance.

The self in relation to the outside world is the construct most commonly addressed in existential philoso-

phy and literature. Put simply, this realm involves a feeling of personal relation with the people, places, objects, and events that constitute elements of the external world. Put even more simply, this construct represents a desire to avoid feeling alienated from the outside world. People seek close and lasting relations with others, to belong to a community, for others to view them in ways similar to how they view themselves, and for their actions to have expected and valued consequences. This realm captures people's desires to feel a part of a coherent cultural worldview (Baumeister & Leary, 1995; Leary, Tambor, Terdal, & Downs, 1995; Solomon et al., 1991; Swann, Stein-Seroussi, & Giesler, 1992).

We do not anticipate that the urgency to repair threats to meaning would be the same for all realms of meaning. We propose instead that the intensity of the motivation to compensate for a loss of meaning would vary as a function of the realm of meaning under attack. Specifically, we predict that meaning maintenance efforts are of greater necessity for realms that are more personally salient. For example, the nonrelation implied by the eventual ending of one's own existence would provoke a more urgent meaning rebuilding response (e.g., Pyszczynski et al., 2004) than the nonrelation implied by the unexpected features of a deck of altered playing cards, although the response to the latter may not be trivial (e.g., Bruner & Postman, 1949). There are many elaborate and important relations between facets of the self, or between the self and valued elements of the external world. When these connections are no longer reliable, the individual is in desperate need of asserting a viable network of expected relations.

Humans are Meaning Makers

At the core of the MMM is the proposition that humans are inexhaustible meaning makers. From birth onwards, people innately and automatically seek out, construct, and apply mental representations of expected relations to incoming information. Once these relational structures are in place, events in the world may be evaluated, either to see what gave rise to them, or to identify how the events may be relevant to the self (Asch, 1946; Cantnor & Mischel, 1979; Markus, 1977). The establishment of relational frameworks allows for many human desires to be met, especially the drive to predict and control events.

Although determining relational regularities may serve these and other functions, our innate relational impulse cannot be reduced to any one of these functions, anymore than our capacity for vision can be reduced to the need to see potential threats. As it is with our capacity for vision, our meaning-making capacity is always "on," and researchers are just beginning to discover the extent to which even the youngest infants implicitly determine, and subsequently come to expect relational regularities of astonishing complexity. Auditory (Creel, Newport, & Aslin, 2004), and visual relations (Fiser & Aslin, 2001) are implicitly determined and applied, allowing for eventual linguistic associations (Saffran, 2001) and causal attributions (Nazzi & Gopnik, 2002).

Humans are surely not unique in possessing a capacity to create and apply mental representations of expected relationships. Nonetheless, humans' status as the only truly cultural species is accompanied by a reliance on relational structures that vastly surpasses that of other species (Tomasello, 1999). Being a cultural animal means seeing the world and its people as part of a system that extends far beyond each individual. The potential arrays of relations that humans have are orders of magnitude beyond those of their closest evolutionary relatives (Dunbar, 1993; Tomasello, Kruger, & Ratner, 1993). Succeeding as a cultural species requires that people not only attend to and internalize direct relations among objects in the environment and of themselves to those objects, but also to relations among others, relations between others and external events, and relations between the perceptions that others have about those relations, and so on. Humans, thus, do not just live in physical environments; they also live in socially constructed environments. In such environments actions can take on significance at varying levels far beyond the immediate physical consequences of the actions. For example, the decision by an individual to attempt to hunt some large game can potentially come to reflect (a) the reciprocation of an earlier received favor; (b) a calculated political move in which one attempts to show bravery and enhance one's relative status; (c) an opportunity to forge and deepen alliances with one's fellow tribe members; (d) a chance to beat out a rival competitor and make them look weak in the eyes of others; (e) an attempt to demonstrate one's prowess to impress a sought after mate; (f) a chance to obtain a valued good that would afford the beginning of a trading relation with members of a nearby tribe; (g) an occasion to obtain a new fashion accessory or winter coat; (h) an opportunity to boost the toughness of one's reputation, and thereby protect one's family from future threats; (i) an occasion to make a gesture of one's generosity and good will; (j) a chance to have an exciting story to tell around the campfire; (k) an opportunity to test whether one's new spear is effective; or (l) a way to get a tasty meal; or all of these. In sum, as a member of a cultural species, people's actions come to be draped in many layers of potential sources of meaning (Bruner, 1990). Actions are understood in terms of the relational structures within which they occur.

Fitness as a cultural species is crucially tied to the capacity to attend to relations among individuals in one's groups, particularly when social interactions are

governed by nepotism and reciprocity, as was likely the case throughout humans' ancestral history (Boyd & Richerson, 1995). The acquisition of cultural skills, which were clearly crucial to humans' survival, hinged on the ability to be aware of the intentions of compatriots (Dunbar, 1993; Tomasello, 1999). Understanding the increasing orders of intentionality implicated in primate's complex social worlds appears to have been a strong selective mechanism for primate, and especially human, intelligence (Dunbar, 1992; Humphrey, 1976). Hence, it was adaptive for humans to recognize and comprehend complex orders of relations within their worlds.

We propose that this associative impulse is an evolutionarily adaptive trait that occupies a primary position in humans' motivational ontology. Support for this notion has emerged from the discipline of cultural psychology. Cultural psychology maintains that humans are meaning makers whose experiences are fundamentally grounded in, and consequently supported by, cultural meaning frameworks (for discussions on this matter see Bruner, 1990; Shweder, 1990). The impulse to seek out relations we assume to be a psychological universal (an accessibility universal; Norenzayan & Heine, 2005), however, the specific kinds of mental representations that people will construct may vary considerably across cultures.

Fluid Compensation as Meaning Maintenance

Although people depend heavily on relational matrices, reality bombards them with events, behaviours, ideas, and experiences that cannot easily be integrated into existing paradigms. Moreover, an awareness of conflicting events implies that existing relational structures are inaccurate, inadequate, or nonexistent (Kuhn, 1962/1996; Piaget, 1960). That people rely so heavily on relational structures to understand events in their lives indicates that breakdowns of these structures are highly problematic. Humans' needs for stable relational frameworks requires that they respond to actual or potential tears in a meaning framework with attempts to rebuild other frameworks or to assert new frameworks altogether.

In his influential book, *The Structure of Scientific Revolutions*, Thomas Kuhn (1962/1996) proposed two general responses to the awareness of an anomaly, defined as something unrelated or unrelatable to an existing paradigm. The first of these responses is to revise one's system of relations such that it can accommodate the anomaly. The second, and generally assumed to be more common response, is to reinterpret the anomaly in such a way that it ceases to be an anomaly, and instead now relates to one's existing relational structures. Other models of meaning maintenance have described how people respond to ruptures in their mental representations of expected relations. For the most part, these models propose strategies that are variants of the revise and reinterpret strategies proposed by Kuhn (1962/1996). For example, Piaget (1960) proposed that children learn their schemata through interactions with the world, which requires either assimilating new information into an existing schema, or accommodating their schemata to incorporate new information. Janoff-Bulman (1992) construed meaning as "assumptive worlds," which are "stable, unified conceptual system(s)," "a network of diverse theories and representations," and "strongly held set of assumptions about the world and the self" (p. 5). When these assumptive worlds are presented with an anomaly, the person is forced to either revise the assumptive world or, more commonly, reinterpret the anomalous event such that it conforms to the existing assumptive world. In another model, Park and Folkman (1997) describe "global meaning" as "people's basic and fundamental assumptions, beliefs and expectations about the world…, beliefs about the world, beliefs about the self, beliefs about the self in the world" (p. 116). In addition, Park and Folkman proposed the existence of "situational meaning," which is the determination of how similar one's existing meaning frameworks are to those relations they perceive in reality. If there is a perceived discrepancy between global and situational meaning, the person is forced to either revise global meaning to account for the situational meaning, or reinterpret situational meaning to eliminate the discrepancy. In yet another model, Thompson and Janigan (1988) described a process of assimilating anomalies whereby "found meaning," which represents one's existing meaning frameworks, can be revised to account for discrepancies between it and "implicit meaning," which represents one's appraisal of the real world.

We do not question that some variant of the two Kuhnian processes of revising or reinterpreting often take place in reaction to challenges to people's meaning frameworks. However, the foundational premise of the MMM is that there exists a third, complementary route by which people can restore meaning following disruption. This has not been articulated by other theories. That is, following threats to meaning people will reaffirm an alternative network of relations. If people perceive an element of self or of their worlds that does not find a place in their existing frameworks, they may react by adhering more strongly to other relational structures, even if these structures are unrelated to the expected relationships that are under attack. In other words, instead of responding to a relational anomaly by reinterpreting it or revising their existing relations, people may respond by reaffirming other relational structures so as to compensate for damage done to the framework undermined by the anomaly. This reaffirmation we term *fluid compensation* (cf., McGregor et al., 2001; Steele, 1988). The process is fluid insofar as

it does not require that a particular relational framework be asserted, but rather that any alternative framework of associations that is intact, coherent, compelling, and readily available can be affirmed to compensate for a loss of meaning.

We further hypothesize that compensatory responses can occur both within and across the three realms of meaning; if the system of expected relations that govern perceptions of the outside world is compromised, one may respond by bolstering other relational systems governing the outside world, or by bolstering the relations that pertain to the self, or the relations of the external world to the self. For example, encountering information that signifies one's own mortality provides a threat to the relations between the self and the external world. In response to such a threat, people may see patterns within noise (and thereby identify new relations among events in the external world; Dechesne & Wigboldus, 2001), enhance the value of their ingroup (thereby creating relations between oneself and a desirable group; Greenberg, Porteus, Simon, Pyszczynski, & Solomon, 1995), or desire high status products (thereby creating desirable associations between oneself and the external world; Mandel & Heine, 1999). We argue that any of these responses serve to compensate for the meaning disruptions by asserting an alternative meaning framework. Note, that in reality none of these compensatory efforts actually diminish the threat posed by the initial disruption (in our example, the threat of one's own morality). Rather they allow the individual to focus attention on another framework that does not suffer from a perceived anomaly.

Satiability, Substitutability and Evidence for Similar Function

One hallmark of motivations is that they are obviated or attenuated when sated (e.g., Baumeister & Leary, 1995). For example, the need for meaning would no longer drive behaviour when a person temporarily perceives that his or her actions are supported by an expected pattern of relations. In this way, the motivation is primarily evident when its goal (a viable meaning framework, in this case) is potentially out of reach, in the same way that people are mainly aware of hunger motivations when their stomachs are empty. The less reliable the present meaning framework, the stronger and more urgent is the motivation to assert another more reliable matrix. In this way, people's reliance on relational frameworks can be considered to be a need.

A related proposition from the satiation feature of motivations is substitutability (Baumeister & Leary, 1995). The same underlying drive can be satisfied by a variety of alternatives to the extent that the alternatives share a common function. Lewin (1935) and his stu-

dent Ovsiankina (1928) proposed that if one action can be substituted for another we can conclude that these actions serve a common purpose, or have equifinality (also see Shah, Kruglanski, & Friedman, 2003; Tesser, Crepaz, Beach, Cornell, & Collins, 2000). For example, an individual's hunger can be sated either by consuming bread or fish. This substitutability suggests that humans do not have specific motivations to consume bread or fish per se; rather they have motivations to consume food more generally. That bread can be substituted for fish highlights the need to turn from a more specific category (i.e., bread) to a more inclusive category (i.e., food) to understand the goal of hunger motivations. Substitutability between domains suggests a common function. We submit that the satiability and substitutability of various psychological motivations indicates a common function: a need to maintain a coherent framework of meaning.

Evidence for Fluid Compensation of Meaning Maintenance

At the heart of the MMM is the proposition that when people experience a disruption to meaning frameworks they attempt to reconstruct meaning through other relational structures that are available and intact. Because this compensation is proposed to be fluid, evidence for meaning construction efforts is anticipated not only in the same domain as the original threat, but also in domains far removed from the source of the threat (although we submit that the first line of defense to a meaning threat would be to try to respond to the threat directly, and only affirm alternative meaning frameworks if the present one is damaged beyond repair; e.g., Stone, Wiegand, Cooper, & Aronson, 1997). We first discuss the evidence for fluid compensation within domains and then review evidence for fluid compensation between domains.

Evidence for Fluid Compensation Within Domains

We now consider research programs that have investigated compensatory responses within domains. We summarize evidence from four domains that are most relevant to people's drive to maintain meaning; needs for self-esteem, certainty, belongingness, and symbolic immortality. The MMM proposes new ways of understanding the findings within these four domains.

Self-esteem needs. Self-esteem is the construct perhaps most closely tied to people's perceptions of meaning in their lives. Self-esteem has been viewed as an indicator of people's success at relating to their external worlds (Crocker & Park, 2004; Leary et al., 1995; Mischel & Morf, 2003), and, accordingly, how

much meaning they can derive from their lives. The MMM proposes that people pursue self-esteem because it facilitates the maintenance of a viable framework of meaning, particularly within individualistic societies where the relative independence of people renders other relational frameworks less potent (Heine, 2005; Heine, Lehman, Markus, & Kitayama, 1999).

Much empirical research in this area has investigated people's responses to threats to their self-esteem and their attendant efforts to restore it (e.g., Baumeister & Jones, 1978; Cialdini et al., 1976; Leary et al., 1995). Efforts to build self-esteem appear to be most evident when an individual's self-esteem is vulnerable or has been threatened. At some point, however, people stop trying to increase or restore their self-esteem, a pattern akin to that seen for other basic motivations, and a pattern that suggests that a need for self-esteem can be sated. People's pursuits of self-esteem are largely halted when they encounter an opportunity to reflect on positive aspects of their lives (Cialdini et al., 1976; Steele, Spencer, & Lynch, 1993). In contrast, the pursuit of self-esteem is stimulated when people encounter a threat to a positive view of self. In general, then, we can conclude that people do not endeavour to maximize their self-esteem. Instead they strive to ensure that their self-esteem reaches or exceeds some threshold, and consequently self-esteem maintenance efforts are engaged when people perceive that their personal evaluations fall short of that threshold. The satiability of self-esteem motivations supports the claim that they represent a valid need (Baumeister & Leary, 1995).

Efforts to maintain self-esteem are not limited to a specific process such as favorable social comparisons or self-serving attributional biases; rather, there is much evidence for fluid compensation to counter self-esteem threats across multiple strategies. For example, Baumeister and Jones (1978) found that after participants received negative feedback about certain aspects of their personality they came to view other unrelated aspects of their personality more positively relative to participants who had not received negative feedback. Cialdini and colleagues (1976) illustrated that after college students failed a trivia test they were more motivated to affiliate themselves with their school's football team after team victories but distanced themselves after team losses. Hence, these lines of research demonstrate that compensatory boosts to self-esteem can be achieved when people take advantage of circumstances unrelated to the initial threat. Thus, different self-esteem maintenance strategies appear to be interchangeable.

The most explicit formulation of fluid compensation in the self-esteem domain has been developed by Tesser and colleagues in their self-evaluation maintenance model (Tesser, 2000, 2001; Tesser & Cornell, 1991; Tesser, Crepas, Beach, Cornell, & Collins, 2000). Building on the domain-general mechanism

identified by Steele and colleagues in their work on self-affirmation (Steele, 1988; Steele & Liu, 1983; Steele et al., 1993), Tesser and colleagues have provided evidence for at least three substitutable processes serving self-esteem maintenance efforts. Specifically, Tesser and colleagues showed that a threat to the self by way of negative social comparisons or cognitive dissonance could be offset by self-affirmations of one's values, dissonance reduction, or positive social comparisons. That is, the dissonance experienced when one has made a "close-call" decision can be eliminated by affirming one's values (such as by wearing a coveted lab coat; Steele & Liu, 1983), receiving favorable personality feedback (e.g., Heine & Lehman, 1997), or focusing on a positive social comparison situation (Tesser & Cornell, 1991). Tesser and colleagues also showed that social comparison processes can be reversed when people affirm their values (Tesser & Cornell, 1991) or are exacerbated when they write a counter-attitudinal essay that elicits dissonance (Tesser et al., 2000). Likewise, it has been shown that people affirm their values more after they have been induced to make negative social comparisons or have written a counter-attitudinal essay (Tesser et al., 2000).

These highly divergent phenomena are substitutable because the engagement in one decreases the engagement in the other (Tesser, 2000). The hydraulic nature of these phenomena suggests that the different processes are in service of the same underlying goal. The processes previously reviewed are not enacted as ends in themselves (i.e., the goal is not to make a downward social comparison per se), but are means to a higher end. Tesser (2000) proposed that this higher end is the maintenance of self-esteem. The goal of maintaining high self-esteem transcends the more proximal goals of engaging in downward social comparison or in affirming one's values because the myriad strategies for maintaining self-esteem are substitutable themselves.

Of course, describing people's behaviors in the previously discussed experiments as servicing a need for self-esteem invites the question of why such a need exists. This question has led to some rather diverse accounts of the functionality of the self-esteem motive. For example, Barkow (1989) proposed that self-esteem was selected to serve as a gauge of subtle changes of the individual's status within dominance hierarchies. Leary and colleagues (Leary & Baumeister, 2000; Leary et al., 1995) argued that self-esteem is an adaptation that functions as an indicator to detect when people's social relationships and stability within valued groups were vulnerable. Terror management theory (e.g., Pyszczynski et al., 2004) has maintained that self-esteem emerged as an adaptation to stave off the debilitating existential anxieties that come from people's fears of their own mortality. Heine and colleagues (Heine, 2003; Heine et al., 1999) have argued that

self-esteem is derived from desires to actualize individualistic cultural goals of being unique, self-sufficient, in control of one's personal fate, and distinct from others. These are diverse explanations and taking each on its own, it is difficult to adequately account for data collected in the competing paradigms.

The MMM provides another perspective by which to understand the debate regarding the self-esteem motive. The MMM does not dispute that people are often motivated to secure self-esteem, but rather proposes that self-esteem maintenance is itself in service of the overarching goal of meaning maintenance. That is, self-esteem is a means to the end of maintaining a viable relational framework, rather than being an end in itself. Looking across the different depictions of the function of self-esteem, it emerges that threats to self-esteem signal that people are failing to functionally relate to their external worlds. The MMM can also address why the self-esteem motive appears stronger in individualistic than in collectivistic cultures (Heine et al., 1999). Within individualistic cultures, much meaning may be derived by viewing oneself as competent and in control, given that these cultures encourage people to view themselves as the primary source of agency (in contrast with some other cultures, in which agency and control are often achieved more by adjusting oneself to the desires of the collective; Markus & Kitayama, 1991; Morling, Kitayama, & Miyamoto, 2002; Triandis, 1989). In sum, at least within individualistic cultures, high self-esteem is an important means to maintain a coherent relational structure.

Certainty needs. Many research paradigms in social psychology have explored people's motivations to feel certain about their understanding of the world. That is, it has been proposed that people have a fundamental motivation to believe that their perceptions, attitudes, and behaviors are correct (e.g., Festinger, 1957; Fromm, 1947). Related motivations have been described as a need to know (Rokeach, 1960), a need for cognition (Cacioppo & Petty, 1982), a need for structure (Neuberg & Newsom, 1993), and a need for cognitive closure (Kruglanski & Webster, 1996). The commonality among these programs is the proposition that people have a fundamental need to feel accurate in their understanding of how the world operates.

Similar to other human needs, the desire for certainty can be sated. People are most likely to pursue certainty when they are made to feel uncertain (Festinger, 1957). In contrast, when people are led to feel reasonably certain, they are less likely to engage in efforts to increase cognitive certainty (e.g., I. McGregor et al., 2001). In this way, people do not usually aspire to maximize certainty, except in specific situations with highly important outcomes (Petty, Cacioppo, & Goldman, 1981).

Moreover, research indicates that people's needs for certainty are substitutable. That is, a lack of certainty in one domain can be compensated by increased certainty in another. Research by I. McGregor and colleagues on compensatory conviction underscores the hydraulic nature of certainty motivations. I. McGregor and colleagues (2001) found that when participants were made aware of an inconsistency in their lives they responded by becoming more rigid in their beliefs about unrelated topics. Thus, people compensated for a lack of certainty in one domain by creating a sense of certainty in another (also see I. McGregor & Marigold, 2003).

Empirical evidence surrounding a cognitive need for closure also underscores the domain-general nature of a motivation for certainty. People who are chronically high in the need for nonspecific closure, or people for whom a high need for closure has been induced, engage in a variety of tactics to re-establish a sense of certainty (for reviews see Kruglanski & Webster, 1996; Webster & Kruglanski, 1998). For example, Kruglanski and Webster (1991) found that experimentally elevating a need for nonspecific closure (by creating a sense of time-pressure and introducing ambient noise) resulted in participants rejecting someone who possessed an opinion different from the participants' group (also see Kruglanski & Freund, 1983). Likewise, research by Doherty (1998) found that people reacted to a woman who deviated from cultural norms more negatively if they had been encouraged to reach cognitive closure.

Motivations for certainty also underlie a tendency to rely on stereotypes. Because stereotypes allow people to perceive the world in a more orderly manner, it follows that they should be relied upon more heavily by those who feel a more urgent need to achieve closure. In support of this notion, Dijksterhuis, van Knippenberg, Kruglanski, and Schaper (1996) found that people who were chronically high in need for closure as well as people for whom a need for closure was induced exhibited more stereotypically-biased memories of social events.

Similar to the substitutability that has been identified among the self-esteem maintenance strategies, people are able to bolster a sense of certainty through a broad array of tactics, some of which are far removed from the initial source of uncertainty. It is thus inaccurate to claim that people only have needs to feel certain about particular beliefs, such as a belief that one's solution to Task A is correct; rather, they appear to have more general needs to feel certain about something. In parallel to the fluidity of self-esteem maintenance strategies, we can also conclude that feelings of certainty in one domain can diminish efforts to achieve certainty in another domain. Thus, certainty strategies are interchangeable.

Certainty is one's sense that the mental representations of expected relationships that one has generated

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are internally consistent, fit with their perceptions, and meet many of the other needs that allow one to satisfy, most notably, the desire for predictability and control in their lives. The social world can be enormously complex, and people wish to impose a sense of order to this world: They seek to predict and control their environments based on mental representations of expected associations that account for cause and effect relations, as well as teleological relations that are formed when they perceive their actions as directed towards a higher-level purpose (Vallacher & Wegner, 1987). Feelings of subjective certainty with regards to these meaning frameworks provides people with confidence regarding how they should behave, and an understanding of what they should expect from their environments when they do (or do not) behave accordingly. In accordance with the MMM, certainty is the sense that one has generated a reliable framework of relations between themselves and their worlds (Bartlett, 1932; Hogg, 2001). Through meaning, people believe that they understand the operations of their world and their place with in it, and are subsequently able to derive a sense of certainty from these relations.

Affiliative needs.   Humans are fundamentally a social species, and our sociality has surely played a role in the kinds of traits and attributes that were selected for in the ancestral environment (Dunbar, 1992; Tomasello et al., 1993). As a social species, human fitness is enhanced with the maintenance of successful relationships with others. When deprived of smoothly functioning relationships, people suffer from a variety of negative consequences, including an increased risk for mental illness (e.g., Bloom, White, & Asher, 1979), more deleterious responses to stressful life events (e.g., Delongis, Folkman, & Lazarus, 1988), and, overall, an abbreviated lifespan (e.g., Goodwin, Hunt, Key, & Sarnet, 1987; House, Landis, & Umberson, 1988). Maintaining successful relations with others is a core human need (Baumeister & Leary, 1995).

The need to belong is evident not only in people's desires to form relationships with others. This need also manifests itself in people's desires to belong to a cohesive social unit that can be contrasted against groups to which they do not belong. In a series of elegant studies Tajfel (Tajfel, 1970; Tajfel, Billig, Bundy, & Flament, 1971) discovered a remarkable finding. People appeared motivated to carve up an array of strangers into "us" and "them," even when the basis of this categorization was unapparent, or when the individuals stood to gain nothing personally. Tajfel's intriguing studies suggest that people possess a tribal impulse, which drives them into imagined enclaves of similar others. People are not content to think about themselves and others merely as individuals; in contrast, people actively wish to assign themselves and others to social clusters.

Similar to needs for self-esteem and certainty, there appears to be both a satiability and a substitutability inherent in our need for belongingness (Baumeister & Leary, 1995). People do not strive to maximize their sense of belongingness with others. Rather, people's motivation to pursue new relationships drops when they have a number of close relationships relative to times in which they are less connected (e.g., Reis, 1990). The drive for affiliation is spurred by deprivation and is weakened by achieving connection with others. Moreover, there appears to be a limit regarding the number of social relationships that an individual can maintain, and once the limit is reached, the need to develop further relationships is rendered weaker (Audy, 1980; Dunbar, 1997). In general, people are more motivated to establish and deepen their relationships when their affiliative needs are not sated.

Although each relationship is in some ways unique, relationships also appear to serve a shared function. People can achieve some of their belongingness needs by replacing one relationship with another. For example, Milardo, Johnson, and Huston (1983) demonstrated that as people develop new intimate relationships they concomitantly spend less time with existing relationships. Apparently, the needs that are satisfied from the new intimate relationships reduces the utility derived from interacting with pre-established relationships. Similarly, Vaughan (1986) noted that as bad marriages begin to dissolve, people preemptively seek out new relationship partners. Furthermore, this same research found that people who are unhappy in their marriages often choose to have children, presumably in an attempt to compensate for their weakened feelings of belongingness. When one's belongingness needs are no longer adequately satisfied in one relationship, the urgency to find new relationships increases. Likewise, Bowlby (1969) observed that children's distress about being separated from their mothers was reduced significantly if a familiar person was nearby. Stated otherwise, children do not have a need only to stay close to their mother, they also have a need to stay close to someone whom they already know. In sum, human needs to affiliate with others and to achieve belongingness are not directed solely at specific relationships. To a certain extent, belongingness needs to belong are substitutable, such that people can satisfy their broader belongingness needs by maintaining successful relationships with someone.

The MMM agrees that people have pronounced belongingness needs that serve a variety of important functions. The current model goes beyond existing explanations of belongingness functions by proposing that one crucial purpose of having interpersonal relationships is that they provide people with a general sense of interrelation—a sense of meaning. Meaning frameworks derived through close relationships provide people with the sense that their opinions are

shared and are thus more likely to be correct (Hogg, 2003), suggest that people's experiences are normal (Pinel, Long, Landau, & Pyszczynski, 2004), provide people with feelings of self-worth (e.g., Cialdini et al., 1976), help to make sense of and cope with traumatic experiences (Lehman, Ellard, & Wortman, 1986), and provide relevant standards by which people can assess their performance (Festinger, 1954). Meaning as interpersonal relationships allow people to gauge how well they are functioning and provide them with a sense that they can predict and control their worlds. Disruption of interpersonal relationships and social categories is disruption of human's sense of meaning. We propose that such disruptions motivate people to reaffirm alternative relational structures.

Symbolic immortality needs. Borrowing from a number of existential theorists including Becker (1973), Freud (1930/1991), Lifton (1976), and Rank (1941), terror management theory (TMT; Pyszczynski, Greenberg, & Solomon, 1997; Pyszczynski et al., 2004; Solomon et al., 1991) proposes that many human motivations hinge on the existential anxiety associated with people's thoughts about their inevitable demise. The theory stems from the observation that a primary goal for all species is self-preservation, yet humans, having the cognitive capabilities to comprehend that their death is imminent, are inescapably aware that they will fail at this central goal. A consideration of the ultimate futility of one's efforts to preserve his or her existence is proposed to engender a great sense of existential anxiety or "terror." TMT proposes that people aspire for symbolic immortality to protect them from this anxiety that arises from the awareness that they do not have literal immortality. Symbolic immortality is posited to be achieved via a dual anxiety buffer, which consists of a structure (i.e., the individual's cultural worldview), and the individual's association with that structure (i.e., his or her ability to live up to the standards determined by his or her cultural worldview; Pyszczynski, Greenberg, & Solomon, 1999). The cultural worldview is a constructed conception of reality that provides the individual with a sense of order, stability, and predictability. Within this worldview is a consensually shared set of standards that mandate what kinds of actions or thoughts are of value. By living up to the standards that are inherent in the cultural worldview, people are able to derive a sense of value from their cultures.

TMT maintains that when people are confronted with thoughts of their mortality, they combat the anxiety by bolstering either of the dual components of the cultural anxiety buffer. One strategy is to reaffirm the connections of one's cultural worldview, thereby increasing faith in its validity and potential endurance. For example, one can become critical towards people who act in ways that are inconsistent with their cultural

worldview (e.g., Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989). Following from this strategy, another strategy is to reaffirm one's connection to their cultural worldview by reflecting or embodying cultural values. In so doing, people may achieve symbolic immortality insofar as they are connected to that which will endure after they are dead. For example, one can desire possessions that convey that one has the trappings of success in their culture (e.g., Mandel & Heine, 1999).

Although TMT has its detractors (e.g., Leary, 2004; Muraven & Baumeister, 1997; Paulhus & Trapnell, 1997), over the past decade and a half a number of researchers have conducted at least 175 experiments that have provided striking support for a number of diverse predictions from the model (for a review see Pyszczynski et al., 2004). Studies that have been conducted to test TMT typically share the same straightforward methodology: Participants in a control condition are contrasted with those who have been reminded of their mortality, which is operationalised through a variety of different mortality salience primes. Subsequently, various measures of worldview defense or self-enhancement are contrasted across conditions following a brief delay. For example, threats to one's meaning frameworks via mortality salience have been shown to lead to such compensatory responses as prejudice against outgroups (e.g., I. McGregor et al., 2001), maintenance of cultural norms (Rosenblatt et al., 1989), protection of cultural icons (Greenberg et al., 1995), supernatural beliefs (Norenzayan & Hansen, 2005), and a preference for George W. Bush over John Kerry (Landau, Miller, et al., 2004), to name a few. TMT currently stands as one of the most fecund theories in psychology, and there are few motivational phenomena that have not yet been linked with it in some way. Furthermore, at least some of the findings have been found to generalize well across divergent cultural groups (e.g., Halloran & Kashima, 2004; Heine, Harihara, & Niiya, 2002). Importantly for this article, TMT findings lucidly demonstrate how broadly fluid compensation processes can operate. Threats to one's meaning framework via mortality salience can be compensated by aspiring for symbolic immortality via a highly diverse array of responses, all of which involve reaffirming the connections within our cultural worldviews, and reaffirming our connection to these worldviews.

The desire for symbolic immortality also displays the hallmarks of a satiable and substitutable motivation. People do not strive to maximize their feelings of immortality, that is, they do not continually reinforce their dual anxiety buffer once their thoughts of their mortality are no longer available (Pyszczynski et al., 1999). Likewise, concerns with literal mortality can be compensated by beliefs in symbolic immortality, via the activation of either component of the dual anxiety

buffer, a finding that underscores the substitutability of these motivations.

The MMM predicts similar findings that TMT studies have reported but for different reasons. Rather than viewing these effects as being reducible to the desire to avoid the terror associated with the awareness of our own mortality, the MMM proposes that humans seek to preserve a viable framework of expected relations, which may in turn be applied to the task of providing symbolic immortality. Any disruption to one's framework, particularly with respect to one's relations with the external world, creates a sense of urgency to repair that fissure or to construct another relational framework. The MMM views an awareness of one's imminent death as one of many such disruptions of people's associative webs. The MMM hypothesizes that this attempt to affirm an alternative meaning framework follows the same course (including the same critical temporal delays; Pyszczynski et al., 1999) as that identified in manipulations of mortality salience in TMT studies.

How might death be disruptive to one's sense of meaning? In his book entitled *Meanings of Life* (1991), Baumeister devotes one chapter to the integral role of meaning loss in death. In it, he maintains that death threatens meaning (which he also defines as relation) in four particular ways: (a) death undermines the predictability and controllability of one's existence, (b) death eliminates all potential that one has for earning meaning in the future, (c) death reminds people that their existence and the meaning framework that they have constructed will likely be forgotten, and (d) death nullifies the value of one's life's achievements. The Western existentialists, Kierkegaard (1848/1997), Camus (1955), Heidegger (1953/1996), and Sartre (1957), stressed the relative psychological primacy of humans' fear of death. Yet, similar to the MMM, these theorists were also careful to point out that the desire to avoid an awareness of one's own mortality partially, if not completely, reduces to the desire to avoid mortality's assault on meaning frameworks. Following from this line of thought, the MMM asserts that people do not construct meaning frameworks mainly to assuage their anxieties about death. Rather, people primarily have anxieties about death because death renders life meaningless by severing individuals from their external environment, and in a sense, from themselves. Insofar as people are impelled to construct meaning in the face of death, it is only to cover up the "gaps and fissures" (Heidegger, 1953/1996) that the awareness of death tears into the connective fabric of their meaning, where death is not the only event that can produce such tears. Nonetheless, in the current model, we submit that death and meaning loss are inextricably interwoven (also see Dechesne & Kruglanski, 2004; Lifton, 1976).

In sum, according to the MMM, death is but one of many events that stands to threaten people's meaning frameworks. It is perhaps the strongest or most potent of the meaning threats that humans encounter, but responses to it can be predicted using the same MMM framework as can be used to predict fluid compensation efforts following self-esteem threats, feelings of uncertainty, and interpersonal rejection. We will return to explore how the MMM and TMT can be contrasted in a later section.

Evidence for Fluid Compensation Across Domains

The research reviewed underscores the substitutability of some motivations. Threats to self-esteem in one self-domain can be compensated by boosts in another; feelings of uncertainty in one area can lead to attempts to feel certain in another; a disrupted relationship with one individual can lead people to strive to deepen their relations with a different group; and reminders of one's mortality can be compensated by various attempts to achieve symbolic immortality. The MMM proposes that all of these instances represent special cases of responses to threats to meaning. Notably, however, most of this research has investigated the substitutability of these motivations within these specific domains. Although such findings are completely consistent with the MMM, there exists theories within each of these domains to predict each of the respective domain-specific findings (but not the findings within the other domains). In contrast, what is not consistent with existing theories (with the exception of TMT regarding studies of symbolic immortality) is the MMM's prediction that evidence of substitutability should be observed across the four domains. Such evidence would suggest that these separate domains serve a common function, which we submit is the impulse to maintain a coherent relational framework.

Fluid compensation among self-esteem, certainty, and affiliative needs. One line of research that cuts across the different research domains discussed previously has been conducted under the conceptual aegis of social identity theory. Originally developed by Tajfel and Turner (e.g., Tajfel, 1972; Tajfel & Turner, 1979; Turner, 1975), and further elaborated by Hogg and others (Abrams & Hogg, 1988; Ellemers, Spears, & Doosje, 1999; Hogg, 2003; Hogg & Sunderland, 1991), social identity theory has focused on how people are motivated to have a sense of belongingness with others and how they derive a sense of identity from the various groups to which they belong. One foundational premise of social identity theory is that the mere act of being categorized as a group member, regardless of the basis of that categorization, increases ingroup favoritism and intergroup discrimination (e.g., Tajfel, 1970; Tajfel et al., 1971). The ques-

tion of interest in social identity theory is why people will demonstrate intergroup discrimination in a minimal groups design when they stand to gain nothing for themselves, either from belonging to these groups or by acting in ways that favor their minimally assigned group.

Intergroup discrimination has been said to stem largely from two underlying motivations. The first, sometimes referred to as the self-esteem hypothesis (e.g., Abrams & Hogg, 1988), maintains that people are motivated to discriminate among groups as a means to secure a positive self-view. Building upon Festinger's (1954) social comparison theory, Tajfel (1972) proposed that people are not only motivated to secure favorable contrasts between themselves and others, but also between their group and other groups. Discriminating between groups, then, is a way for people to feel good about themselves by casting their group in a more favorable light (also see Turner, 1978, 1982). Over the past few decades a great deal of research has explored the relation between self-esteem and intergroup discrimination. Two corollaries of the self-esteem hypothesis have been derived and tested from this model. The first is that people should feel better about themselves following an intergroup discrimination task. A number of studies report evidence consistent with this proposition (Hogg, Turner, Nascimento-Schulze, & Spriggs, 1986, Exp. 1; Lemyre & Smith, 1985; Oakes & Turner, 1980), although some others have not (e.g., Hogg & Sunderland, 1991; Hogg & Turner, 1987). The second corollary of the self-esteem hypothesis is that people should demonstrate stronger intergroup discrimination following a threat to their self-esteem. In support of this proposition, Hogg and Sunderland (1991) found that participants who received failure feedback on a word association task demonstrated greater intergroup discrimination than those who had received success feedback (also see Brown, Collins, & Schmidt, 1988). In general, then, there is considerable evidence that self-esteem and social categorization are substitutable, although the relation between self-esteem and intergroup discrimination appears to be moderated by additional variables, such as the extremity of self-esteem, the degree to which people identify with the group, and the extent to which groups and their members may feel under threat (Abrams & Hogg, 1988; Hogg, 2003; Long & Spears, 1997; Rubin & Hewstone, 1998).

The second motivation that has been proposed to underlie social identity theory is uncertainty reduction (Hogg, 2001). As described earlier, uncertainty is a problem when people are motivated to achieve control over their lives. However, the quest for certainty is difficult because there is scant evidence that objectively confirms that people are indeed correct in their knowledge or opinions. In the absence of objective information, people must resort to seeking out cues that sug-

gest that their beliefs are correct. For example, one such cue relevant to social identity theory is perceived agreement with others. To the extent that people feel that there is a widely-shared consensus about a belief, their confidence in that belief should increase. Hogg and colleagues (e.g., Hogg & Abrams, 1993; Hogg & Mullin, 1999) proposed that people can reduce their sense of uncertainty on a particular topic if they feel that they belong to a relatively homogeneous group. To the extent that people are surrounded by those who appear to be similar to themselves, they may infer that their own beliefs on certain domains are also shared by those similar others, and hence suggest that their personal opinion is correct. Hogg and colleagues proposed that this relative homogeneity can be achieved by intergroup discrimination. In addition to highlighting the distinction between groups, intergroup discrimination calls attention to the homogeneity within groups, and "imposes order and ascribes meaning to a potentially bewilderingly complex social field" (Hogg, 2003, p. 473).

In one test of the uncertainty hypothesis, Grieve and Hogg (1999) demonstrated that participants showed a more pronounced intergroup bias in a minimal groups paradigm when they had earlier engaged in a task that had no obvious solution and thus left them feeling uncertain, relative to when they had not experienced induced uncertainty (see Hogg & Mullin, 1999, for a review of other relevant studies). Similarly, Shah, Kruglanski, and Thompson (1998) found that a heightened need for closure leads to more pronounced ingroup biases. Moreover, in their classic study, Festinger, Riecken, and Schachter (1956) found that when cult members' doomsday beliefs were proved wrong they started to proselytize, apparently in an attempt to get consensual validation for their beliefs that no longer appeared to be correct. Relatedly, McKimmie, Terry, and Hogg (2003) found that perceptions of group support reduced participants' feelings of dissonance. Pinel and colleagues (2004) found that the negative experience of existential isolation can be mended by connecting with others who share the same subjective experiences, thereby contributing to feelings of certainty. A desire for certainty can be relieved through compensation in another domain such as belongingness. Thus, motives for uncertainty reduction and belongingness are capable of being substituted for each other.

There are a number of other instances in which we see interdependence among the domains of self-esteem, certainty, and belongingness. For example, Navarette, Kurzban, Fessler, and Kirkpatrick (2004) found that a manipulation of social isolation led people to be more critical of someone who wrote an anti-U.S. essay. That is, when individual's feelings of belongingness were threatened they came to desire the certainty that their country's ways of operating were

above the criticisms that the essay writer had proposed. Zadro, Williams, and Richardson (2004) found that even rejection by a computer program was sufficiently threatening as to lower people's feeling of belongingness, control, self-esteem, and perceptions of a meaningful existence. The blurring of the boundaries between motivations for certainty and self-esteem can be seen in the debate regarding whether the unease experienced in cognitive dissonance is fundamentally about inconsistency or about self-esteem threat (Aronson, 1968; Festinger, 1957; Steele, 1988). Furthermore, sociometer theory proposes that self-esteem and affiliative needs are deeply intertwined (Leary & Baumeister, 2000; Leary et al., 1995). Specifically, the model maintains that self-esteem serves to indicate when individual's relationships are at risk for disruption. The sensitivity of the sociometer is such that whenever relationships appear vulnerable, self-esteem is likely to suffer. This is proposed to be true even when the relationships at risk are of little importance to the individual, or if the relationships are only indirectly vulnerable due to an inadequacy of an individual's performance in other domains (Baumeister, Wotman, & Stillwell, 1993; Leary et al., 1995). The interdependence between motivations for belongingness and self-esteem suggests that these two motivations may serve a common function.

In sum, there is considerable evidence for instances of interdependence among the three domains reviewed. In some circumstances, threats to self-esteem, certainty, and belongingness can be compensated by boosts in the other domains. We suggest that all of these threats amount to assaults on the relational frameworks that account for one's selves, one's outside world, and one's relation to the outside world. As such, it follows that to a certain extent these domains should appear to be largely substitutable with each other, insofar as one may draw on one domain to reaffirm meaning when relations in another domain have been compromised.

Fluid compensation of symbolic immortality needs. Substitutability across domains is particularly evident in research on TMT. Mortality salience has been linked to a variety of motivational tendencies, including the three domains reviewed earlier. First, mortality salience has been shown to lead people to pursue various strategies to enhance or maintain self-esteem (Greenberg et al., 1992; Harmon-Jones et al., 1997; Mandel & Heine, 1999). For example, Mikulincer and Florian (2002) found that the self-serving attributional bias becomes more pronounced after mortality salience. The logic of TMT is that people can experience symbolic immortality by perceiving themselves as living up to the standards of a culture, and consequently becoming associated with enduring features of the culture (e.g., Solomon et al.,

1991). A desire for symbolic immortality leads to similar consequences as threats to self-esteem and thus can also be viewed as substitutable with self-esteem threats.

Second, encounters with uncertainty also appear to be substitutable with desires for symbolic immortality. Numerous studies have demonstrated that mortality salience leads to a heightened desire for certainty (Deschene, 2002; Landau, Johns, et al., 2004; Van den Bos, 2001; Van den Bos & Miedema, 2000). For example, Dechesne and Wigboldus (2001) found that participants who were reminded of their own mortality were quicker to discern a pattern amongst a set of letters relative to those who were not so reminded. According to TMT, the heightened desire for certainty that follows mortality salience is an attempt to reinforce one's cultural worldview.

Third, belongingness needs are also affected by mortality salience manipulations. A number of studies have found that mortality salience prompts affiliative tendencies (e.g., Mikulincer, Florian, & Hirschberger, 2004; Pyszczynski et al., 1996). One such response to mortality salience is a heightened desire to discriminate one's group from others. For example, Harmon-Jones, Greenberg, and Solomon (1996) found that people who had been assigned to groups based on their preference for one of two paintings showed more of an intergroup bias if they were previously primed with mortality salience than if they had not been primed with death, thereby paralleling other work that has employed uncertainty and self-esteem manipulations (e.g., Grieve & Hogg, 1999; Hogg & Sunderland, 1991). A second way that people strive to fulfill belongingness needs in the face of mortality salience is that they strive to form more social relations. For example, Taubman Ben-Ari, Findler, and Mikulincer (2002) found that mortality salience manipulations led to a greater willingness to initiate social interactions, particularly among those who were securely attached. Wisman and Koole (2003) found that mortality salience manipulations led people to prefer to sit in a group than to sit alone, even when members of the group endorsed beliefs that were antithetical to participants' own beliefs. Threats to one's sense of belongingness and desires for symbolic immortality can be said to be, at least in some circumstances, interchangeable.

TMT is by all accounts a hydraulic model. Not only do threats to one's meaning framework via mortality salience lead to the compensatory responses identified previously, but boosts to an individual's sense of meaning reduce the impact of mortality salience. For example, boosts to self-esteem have been shown to eliminate the effects of mortality salience on both worldview defense and death thought accessibility (Harmon-Jones et al., 1997; Mikulincer & Florian, 2002). Likewise, engaging in self-affirmation mollifies the impact of

mortality salience on worldview defense (Schmeichel & Martens, 2005). Manipulations of variables related to perceived certainty (or examinations of people who vary in dispositional levels of these variables) find a reduced impact of mortality salience manipulations (e.g., Dechesne, 2002; Dechesne, Janssen, & van Knippenberg, 2000; cf., Jost, Fitzsimons, & Kay, 2004; Van den Bos & Miedema, 2000). Furthermore, people whose belongingness needs are sated insofar as they report having secure attachments (Mikulincer & Florian, 2000) or are seated with others (Wisman & Koole, 2003) do not show worldview buffering responses to mortality salience, although those whose belongingness needs are deprived do. In sum, the threats to one's relational framework elicited by mortality salience can be compensated by boosts to one's relations in the domains of self-esteem, certainty, and belongingness.

Divergent threats lead to convergent responses. Further evidence for the substitutability across domains can be seen by examining the diverse array of psychological threats that lead to the same kinds of specific responses. For example, hostile reactions to someone who criticizes one's country has been observed following manipulations such as mortality salience (H. A. McGregor et al., 1998), inducing a feeling that one's life is meaningless (Heine, MacKay, Proulx, & Charles, 2005), temporal discontinuity (I. McGregor et al., 2001), or by imagining that one has been burglarized or socially isolated (Navarette et al., 2004). Intergroup biases have been identified following mortality salience manipulations (Greenberg et al., 1990), a heightened need for closure (Shah et al., 1998), feelings of uncertainty (Grieve & Hogg, 1999), threats to self-esteem (Hogg & Sunderland, 1991), and when people are unable to affirm their values (Fein & Spencer, 1997). Affiliative motives have been fostered by encounters with uncertainty (e.g., Festinger, Riecken, & Schachter, 1956), mortality salience manipulations (Mikulincer et al., 2004), worldview threats (e.g., Hart, Shaver, & Goldenberg, 2004), and self-esteem threats (Cialdini et al., 1976). A tendency to rely on stereotypes has been identified by people who have been reminded of their own mortality (Schimel, Simon, & Greenberg, 1999), those whose spatial-symbolic self was threatened (Burris & Rempel, 2004), and by those high in need for closure (Dijksterhuis et al., 1996). A tendency to punish people who break cultural norms is evident among people who are high in need for closure (Doherty, 1998), people who were led to feel meaningless (Heine et al., 2005), or people who were reminded of their mortality (Rosenblatt et al., 1989). Observing that such diverse phenomena lead to the same kinds of responses suggests the extent to which they substitutable for each other. In each case mental representations of expected relationships have been shattered, and in each case expected relations have been reaffirmed elsewhere.

In sum, there is much evidence that self-esteem motivations, preferences for certainty, affiliative needs, and motivations for symbolic immortality are substitutable drives. Divergent threats across these domains lead to convergent responses. Moreover, boosts in one domain (e.g., self-esteem) diminish the effects of threats in others (e.g., desire for symbolic immortality; e.g., Harmon-Jones et al., 1997). The substitutability, or equifinality, of different phenomena suggests that they are in service of the same underlying goal (Baumeister & Leary, 1995; Lewin, 1935; Ovsiankina, 1928; Shah et al., 2003; Tesser, 2000). The fluid compensation processes that have observed between these different domains suggests that motivations to maintain self-esteem, achieve certainty, establish and maintain interpersonal relationships, and avoid thoughts of one's mortality are not ends in and of themselves, but are means to a higher end. This end, we propose, is a motivation to maintain meaning. It is far more parsimonious to view these various motivations as stemming from a single overarching concern (viz., a desire for meaning) than to view these as separate, independent, processes.

One alternative account to our claim that the motivations in the domains are substitutable is that a transfer of affect or arousal could perhaps explain the findings that an experience (e.g., an uncertainty or mortality salience manipulation) can affect the engagement in another behavior (e.g., increased intergroup discrimination or dislike of an anti-U.S. essay writer). For example, Zillman, Katcher, and Milavsky (1972) found that after people exercised they would engage in more aggressive activity. It does not seem reasonable to propose that this is because exercise and aggression are expressions of a similar underlying need; rather, it appears that the arousal experienced from the exercise carried over to affect people's aggressive behaviors in another context (also see Berkowitz, 1990; Schacter & Singer, 1962). However, this transfer of arousal account would seem to be hard-pressed to explain many of the findings that we reviewed previously. First, many of the reviewed studies included additional dependent measures to serve as controls (e.g., evaluating essay writers on nonmeaning-threatening topics; Harmon-Jones et al., 1997; Heine et al., 2005) and these did not reveal any effects of the meaning threat. Rather, the meaning threat only led to specific meaning-boosting responses, rather than more critical responses in general. Second, many of these studies (again, particularly the TMT studies) included conditions that were designed to instill negative affect but not meaning threats (e.g., by asking people to imagine taking an exam or imagining worrisome thoughts; Greenberg et al., 1995; H. McGregor et al., 1998), and none of these revealed any evidence for worldview de-

fense. Hence, differences between the studies reviewed in support of the MMM and previous studies supporting transfer of arousal or affect effects ameliorate concerns that the latter could account for the patterns observed and predicted by the MMM.

Is meaning the primary motive? One potential challenge to our model is that because we are proposing that there is such similarity among needs for certainty, self-esteem, belongingness, symbolic immortality, and meaning, it is possible that we have identified the wrong motivation that unites them all. For example, if these motivations are all so similar could it instead be that a need for certainty, rather than a need for meaning, underlies them? Or, perhaps the fundamental human motivation guiding all of these different responses is the need to belong. Given the substantial degree of overlap that we are proposing, how can we identify which motivation lies at the origin of our motivational ontology?

This is a difficult question to answer empirically because the overlap between these different motivations requires that they are all closely connected and are thus likely activated simultaneously. However, it is important to make a distinction between saying that a motivation for meaning underlies motivations for self-esteem, certainty, belongingness, and symbolic immortality and saying that these four motivations are nothing but expressions of the desire for meaning. There would certainly seem to be facets of these four psychological processes that are distinct from each other. That is, although a desire to maintain meaning cuts across all of these psychological processes there is more to each of these processes than just a motivation for meaning. The imperfect overlap of these four processes is evident when considering some of the specific experimental findings. For example, studies that found that a heightened need for closure led to more pronounced ingroup biases (e.g., Shah et al., 1998) would be difficult to explain by arguing that the process originated with a threat to self-esteem. We do agree that there is room to debate which motivation is more primary in each of the individual experiments that have been reviewed, however, we think that the one account that is parsimonious across each and every instance is that people are striving to affirm coherent structures of expected relationships.

More important to this point is that people need mental representations of expected relationships to have these other things. If one wants to predict events in the outside world, or the thoughts, feelings and behaviors associated with themselves and others, one needs stable mental representations that bear some relation to these phenomena. If one wants to intentionally intervene in their environment and control events to bring about desired outcomes, such intervention isn't possible unless these same relational structures are

in place. If one wants to feel connected to something outside themselves—places, belongings, family, friends, lovers, a society, a culture—the impulse and ability to form such complex relationships both fuels this desire and makes it possible. This is true regardless of the other needs met by such relationships, be it the need for self-esteem, the need for certainty, the need to belong, or the need to symbolically endure.

Testable Predictions for the MMM

A model as broad and encompassing as the MMM should afford many testable and falsifiable predictions. Specifically, the model predicts that threats to an individual's meaning will lead to efforts to affirm an alternative viable relational framework when given the opportunity. Although a great deal of research has been conducted that is consistent with the MMM, there are many directions that future research could be pursued to directly test the model. First, as we have argued, the four domains of empirical findings that we have reviewed (viz., motivations for self-esteem, certainty, affiliation, and symbolic immortality) are hypothesized to be substitutable. That is, threats in any of these domains should be compensated for by a boost in any of the others. Although there is much research that we reviewed that is in support of our thesis, there are a number of combinations of these four domains that have yet to be investigated. The MMM would predict, for example, that people should be more motivated to discern a pattern in some noise following a significant self-esteem threat delivered via negative personality feedback. Alternatively, one would expect that people should strive to affiliate with others following a manipulation that heightens their need for cognitive closure. The MMM predicts that these compensatory responses should be evident provided that the meaning threats are significant and effectively delivered, and that there are sound measures of attempts to redirect attention to alternative meaning systems. In sum, these four domains of meaning threats and four domains of meaning-boosting responses provide at least 16 cells within which predictions from the MMM can be tested and potentially falsified.

The MMM does not only propose meaning-affirming responses to meaning threats. The MMM is a hydraulic model and, as such, predicts that people should experience less of a meaning threat when they have experienced a boost to an alternative relational framework. For example, people who have affirmed their values or have received a self-esteem boost have been found to experience less cognitive dissonance upon making a difficult choice (e.g., Heine & Lehman, 1997; Steele & Liu, 1983). Thus far, the majority of research on hydraulic relations between meaning boosts and threats has been conducted within

a TMT framework, which has identified a variety of meaning boosts that diminish the impact of mortality salience (e.g., Dechesne, Janssen, & van Knippenberg, 2000; Harmon-Jones et al., 1997; Mikulincer & Florian, 2002; Schmeichel & Martens, in press; Van den Bos & Miedema, 2000; Wisman & Koole, 2003). We propose that further evidence of the hydraulic nature of meaning maintenance could be obtained by findings that boosts to people's self-esteem, perceived certainty, and belongingness would lessen the impact of various threats, including mortality salience, but also self-esteem threats, feelings of uncertainty, or interpersonal rejection. In sum, meaning boosts in any of the four domains are predicted to reduce the impact of threat in any of the other four domains.

Please note that we are not proposing that the four domains of self-esteem, certainty, belongingness, and symbolic immortality are an exhaustive list of the ways that people can gain meaning in their lives. In addition to these 4 domains, there are likely other sources of threats to meaning and successful meaning boosting strategies. For example, some manipulations that have led to compensatory meaning-gaining responses include thinking of the presence of dust mites (Burris & Rempel, 2004), a temporal discontinuity task (I. McGregor et al., 2001), imagining that one has been burglarized (Navarette et al., 2004), or questioning how meaningful one's life is (Heine et al., 2005). It is not clear that these manipulations fit into motivations for self-esteem, certainty, affiliation, or symbolic immortality. We suspect that there are likely many other threats to meaning that could be experimentally manipulated and that would show comparable meaning-boosting responses. For example, we anticipate that if participants could be led to believe that their perceptions of the world were out of touch with reality, such as when people participate in an Asch-like line judgment task in which they discover that they failed to accurately perform a simple visual task, they would consequently seek to assert alternative frameworks. Likewise, meaning-seeking responses would be predicted to occur if participants were led to encounter large anomalies in time perception by having them attend to a malfunctioning clock; if they were led to believe that their self-concept was inconsistent and contradictory; if they encountered Bruner-Postman kinds of irregular stimuli (i.e., playing cards of a certain suit being the wrong color); or even if they watched a surreal mind-blowing movie such as *Mulholland Drive*. Moreover, we propose that these events would be less threatening to people's relational frameworks if they were preceded by a boost to the person's meaning, such as through a value affirmation task or a manipulation to make the person feel more certain. We hypothesize further that perceived anomalous relations in the realm of the self or the realm of the relations between the self and external world will lead to more significant efforts to regain meaning compared with experiencing anomalous relations in the realm of the external world. Put another way, the more central the perceived relations to one's life, the more connections that will be open and thus vulnerable to an anomalous experience. Hence, a disruption to a framework such as this would bring about an urgent need to assert a coherent relational framework.

Last, because people's meaning-making exercises will be greatly influenced by what relations are consensually constructed within their culture, we expect there to be significant cultural differences in the kinds of events that serve to threaten or boost meaning. For example, self-esteem does not appear to be a primary source of meaning in hierarchical collectivistic societies such as in East Asia, and thus we predict that there should be little evidence of compensatory responses to self-esteem threat there (e.g., Heine et al., 1999). Conversely, we reason that "face" is a more focal source of meaning in East Asia, and that threats to face should lead to pronounced meaning-boosting efforts in that culture (Heine, 2005). We anticipate that measuring the extent to which people engage in compensatory responses after different kinds of threats may serve as a methodology to help identify the core sources of meaning within a culture. In sum, there are many testable and falsifiable predictions that can be uniquely derived from the MMM.

Contrasting TMT and the MMM

Our initial reasoning for the MMM was an extension of our reading of the compelling TMT literature, and, indeed, there are many parallels between these two theories. Both theories are existential in nature, both predict the same kinds of worldview bolstering responses to mortality salience, and both emphasize the fluid domain-general nature of our attempts to restore meaning. Given this similarity we feel it is crucial to underscore the important ways in which these two theories diverge.

TMT and MMM differ in terms of the foundation of the respective theories. TMT proposes that people are motivated to achieve symbolic immortality, which is attained by activation of the dual component anxiety buffer. In TMT, thoughts of death provoke anxiety by reminding people of their own mortality. In an effort to avoid this anxiety, people strive for a sense of symbolic immortality, which they achieve by bolstering the structure within which they exist, or their associations to that structure. Symbolic immortality is said to be derived from the activation of the dual component anxiety buffer because the structure is perceived to have a sense of permanence, and one can become symbolically associated with this permanence by perceiving

oneself as a valued part of this structure (e.g., Pyszczynski et al., 2004; Solomon et al., 1991).

In contrast, the MMM proposes that people have a fundamental need to maintain viable mental representations of expected relationships. Anything that challenges these relational structures will lead to efforts to construct or affirm alternative structures. Mortality salience is one experience that disrupts an individual's meaning framework; however, the proposed model predicts that other threats to meaning would yield comparable efforts to regain meaning.

Given the substantial conceptual overlap between TMT and MMM, we consider the kind of evidence that would disentangle the two theories. Because both theories view mortality salience as a threat which leads to compensatory responses, the findings of TMT studies are also consistent with the predictions of the MMM, albeit for a different theoretical rationale. In contrast, however, threats to meaning that do not invoke thoughts of death would only be predicted to lead to attempts to construct or reassert meaning frameworks by the MMM. Hence, the two theories can be distinguished by contrasting their predictions for the responses in which people engage when they encounter a nondeath related meaning threat.

Recently, a number of research programs have contrasted how people respond when they encounter meaning threats that do not involve reference to death with a mortality salience condition. In one direct series of tests of the MMM, Heine and colleagues (2005) provided participants with feedback, via a rigged questionnaire, that their life was low in meaning or with a mortality salience manipulation. Participants in both conditions responded in the same way across a number of studies. Specifically, participants were more negative towards someone who criticized their country (thereby preserving a desirable set of relations between oneself and one's country), more punitive towards a prostitute (maintaining an orderly set of relations within the external world), and more desirous of high-status products compared with those in a control condition (which allow for positive associations between oneself and the world). It is not clear what model other than the MMM could account for these findings.

Other research programs have yielded findings easily integrated into the MMM but counter to the predictions of TMT. For example, I. McGregor and colleagues (2001) found that having people experience a temporal discontinuity manipulation led people to have the same response as a mortality salience manipulation. Specifically, they showed a heightened intergroup bias (which provides people with an orderly and desirable set of associations between themselves and their group). There was no difference in participants' responses between this condition and another condition in which mortality salience was manipulated. Navarette and colleagues (2004) provided people with

a manipulation of "theft salience" (they were to imagine their homes had been burglarized), or a manipulation of "social isolation" (they were to imagine themselves isolated from family and friends), or a mortality salience manipulation. Subsequently, participants evaluated an anti-U.S. essay. Participants in all three conditions responded with more hostility towards the anti-U.S. essay writer compared to those in a control group. Van den Bos and colleagues (Van den Bos & Miedema, 2000; Van den Bos, Poortvliet, Maas, Miedema, & Van den Ham, 2005) asked people to consider how they feel when they are uncertain or when their mortality is made salient. People in both conditions responded with increased anger towards unfair treatment compared with those in a control condition (perceived unfairness violates one's expected relationships with the world). Miedema, Van den Bos, and Vermunt (2004) found that participants reacted more strongly towards variations in fairness when their self-image had been threatened (by having them recall situations in which central aspects of their selves were questioned by people who were very important for them) relative to a control condition, in ways identical to those previously identified by mortality salience manipulations (e.g., Van den Bos & Miedema, 2000). Burris and Rempel (2006) found that reminding people of the existence of dust mites led to a preference for stereotypical targets over counter-stereotypical targets compared with those in a control condition. They also found this identical pattern of results when contrasting mortality salience and control conditions (cf., Schimel et al., 1999). Although thoughts of dust mites are not associated with thoughts of mortality, they do challenge one's spatial-symbolic self in that they represent an invasion of one's space. We propose that they also threaten one's meaning frameworks in that they produce an invasive, unexpected, and undesired association with the self.

In sum, research has shown that a diverse array of threats to established relations (i.e., temporal discontinuity, reminders of the relative meaninglessness of one's life, thoughts of burglary or social isolation, feelings of uncertainty, self-image threats, and thoughts of dust mites) lead to the same responses as manipulations of mortality salience to a diverse array of dependent measures (i.e., intergroup biases, preferences for high-status products, punitive responses towards a prostitute, dislike of someone who criticizes one's country, anger towards unfair treatment, and preference for stereotypical targets). In all of these studies the effects from the nondeath meaning threats were as strong as the effects of mortality salience manipulations, although we note that some efforts to manipulate meaning have not replicated TMT findings (e.g., Baldwin & Wesley, 1996; Landau, Johns, et al., 2004). Taken together, the diversity of operationalizations and predicted responses in the studies reviewed previously

lends support to the robustness of the meaning-making compensatory process while weakening alternative accounts of any individual study. Apparently, meaning threats elicited through numerous means influence people in the same ways as does mortality salience.

These findings would seem to be a challenge to the logic of TMT. One possibility consistent with TMT is that the threats to meaning described previously lead to TMT-like responses because meaning threats weaken the anxiety buffer and allow death thoughts to reach consciousness, thereby leading to efforts to regain symbolic immortality. However, we would challenge this alternative account in two respects. First, there is little evidence that death thoughts are activated by these other meaning threats. Word completion tasks reveal that none of these manipulations led to increased death thought accessibility (Burris & Rempel, 2004; I. McGregor, Zanna, & Holmes, 1998; Navarette et al., 2004; Van den Bos et al., 2005), however, we note some other manipulations, such as relationship problems (Florian, Mikulincer, & Hirschberger, 2002), and thoughts of physical sex among neurotics (Goldenberg, Pyszczynski, McCoy, & Greenberg, 1999), have been shown to heighten death thought accessibility, findings that are not easily explained by the MMM. It is difficult to maintain that the meaning reconstruction efforts are due to the activation of death thoughts when these studies have failed to find it. Second, the MMM is a far more parsimonious account of findings from studies in which mortality salience is not manipulated. The MMM explains nondeath related studies as well as TMT findings by maintaining any number of significant threats to one's meaning framework will lead to a response to affirm an alternative framework.

We do suggest, however, that not all meaning threats are created equal. We submit that the most significant threat to one's relational frameworks is thoughts of one's pending death. Heidegger (1953/1996) regarded humans' desire to avoid death as a placeholder for the more fundamental desire to establish stable webs that tie together elements of external reality, and that finally entangle our human selves within them. Death rips apart these connections, and in so doing, renders humans' existence ultimately and unavoidably fragmentary, and therefore meaningless. Disruption of meaning frameworks that are less central to the self would be expected to cause a less urgent response to assert an alternative framework.

In addition to the conceptual reasons for why reminders of death provide such strong threats to meaning, we submit that there might be a methodological reason as well. Mortality salience has the unique virtue of being a manipulation that is extremely difficult to rationalize away. Threats to self-esteem, manipulations of uncertainty, or staged interpersonal rejections can be effectively disarmed by reinterpreting the threat such

that one's self-esteem really hasn't been threatened, that one really doesn't feel uncertain, or that the rejectors are not seen as competent or valued relationship partners. As anyone who has tried to deliver failure feedback to research participants can testify, quite often the manipulated threat is not received with the intent that it was delivered. In an attempt to reinterpret the threat, participants can conjure up external attributions (e.g., "I didn't get enough sleep last night."), discount the importance of the task (e.g., "Who really cares about anagram-solving skills anyways?"), or become suspicious about the whole experiment (e.g., "There is no way that I could have done that poorly!"). In sharp contrast, there is no reinterpreting away the fact that some day one will die. Hence, we imagine that mortality salience may indeed prove to be the most powerful and reliable manipulation to threaten people's meaning frameworks in the laboratory.

The Problem of Suicide

The differences in the theoretical foundations of TMT and MMM are perhaps most evident when we consider the problem of suicide. Camus (1955) claimed "There is but one truly serious philosophical problem, and that is suicide" (p. 3). Why might it be that someone would wish to take their own life? Camus suggested that

> Dying voluntarily implies that you have recognized, even instinctively, the ridiculous character of habit, the absence for any profound reason for living, the insane character of daily agitation, and the uselessness of suffering…there is a direct connection between this feeling and the longing for death. (Camus, 1955, p. 10)

If it is, as TMT suggests, that the need for meaning reduces to the need to avoid the latent anxiety that results from an awareness of one's own mortality, how then could it be that in the absence of meaning, people long for death? If people sometimes choose death over meaninglessness, it scarcely seems possible that death can be considered their greatest fear, or that the need for meaning can reduce to the desire to be buffered from an awareness of one's own imminent death. The MMM presents an alternative motivational ontology, wherein the need for meaning exists independently of the will to exist, and is sufficiently powerful that, if unmet, the resulting distress may goad one into ending one's own life. We agree with Heidegger (1953/1996, p. 245) that "angst about death must not be confused with fear of one's demise." We suggest that if there is any reductive relationship between death and meaninglessness, it is the fear of death that primarily reduces to the need for meaning, insofar as humans fear death because death may render life meaningless. When indi-

viduals are unable to construct the coherent mental representations of expected relationships that allow them to maintain a perception of control over their existences, or derive a sense of purposeful connection in their daily activities, they occasionally, and tragically, choose death.

Conclusions

The MMM proposes that a diverse array of human motivations, including motivations for self-esteem, certainty, affiliation, and symbolic immortality, can be understood as stemming from a common underlying drive: People possess an associative impulse by which they seek to relate objects and events to each other and to the self. This desire to perceive relations results in people viewing their worlds and the events within them through the prism of their mental representations. These representations are constructions, and often do not accurately reflect objective relations within the world. When people become aware of events that cannot be accommodated in their relational structures, they experience a threat to their sense of meaning. These threats to meaning are dealt with in a few ways: people may reinterpret the events so that they are no longer inconsistent with their mental representations or they may revise their representations so that they are capable of incorporating the new troublesome event (Kuhn, 1962/1996). In addition to these more researched strategies, the MMM offers the novel proposition that people might respond to meaning threats by reaffirming an alternative framework. The goal is to be attending to a viable and coherent framework of relations, and people will be motivated to assert one even if it does not appear related to the source of threat that motivated their search in the first place.

There are various sources of threat to people's meaning frameworks. People might encounter a threat to their self-esteem that reduces their sense that they are relating to their worlds in a functional way. People encounter occasions in which they feel uncertain about relations between elements of the world around them, making them feel unable to predict future events. People may be rejected by others, thereby ostracizing them from any consensual indicators that they are functioning well. Or there are times when people consider their future mortality and this realization shatters all relations between the self and its external world. These threats, we submit, lead people to respond by asserting alternative frameworks that do not appear to contain any anomalous relations. Affirmations of a coherent relational structure will serve to nullify the threat caused by the hitherto identified irregularities. Because the proposed goal of our meaning maintenance efforts is to be attending to a viable meaning framework, it is

not necessary to deal directly with the threatening anomaly. Any compelling and available network of relations can suffice, thereby underscoring the fluid compensatory nature of the MMM. For example, threats to uncertainty can be compensated by feelings of belongingness (Hogg, 2003), or threats to mortality salience can be compensated by boosts in self-esteem (Harmon-Jones et al., 1997). Indeed, threats within the domains of self-esteem, certainty, belongingness, or symbolic immortality should all be ameliorated by asserting meaning frameworks within any of the other domains. Because each of these four psychological processes can be substituted by the others suggests that they are serving a common purpose. That purpose is to maintain meaning.

The MMM integrates a number of diverse literatures on human motivation. Although the MMM is surely not all that is behind the specific motivations for self-esteem, certainty, belongingness, and symbolic immortality, we propose that elucidating a common motivation that cuts across these human drives will facilitate future conceptual and empirical inquiries into identifying why people behave in the ways they do.

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