

## Chapter 2

# A Terror Management Perspective on the Creation and Defense of Meaning

Daniel Sullivan, Spee Kosloff, and Jeff Greenberg

Terror management theory (*TMT*) is based on the existential psychoanalytic tradition developed by authors such as Otto Rank, Gregory Zillboorg, Robert Jay Lifton, Ernest Becker, and Irvin Yalom. From this perspective, people desire to view life as meaningful because the prospect that they are only animals, fated to no longer exist in any form upon death, is too terrifying to accept. Thus according to TMT, a human being who lacked any sense that their life is meaningful would experience intense anxiety, if not abject terror, in the face of the death sentence to which we are all condemned. The theory and associated research program explore the implications of this idea for how people derive and defend a meaningful view of life and the consequences of doing so for a wide range of human experiences.

In this chapter, we intend to show that TMT provides a unique motivational account of the creation and defense of meaning that is both consistent with and goes beyond a variety of related psychological perspectives on meaning. To do so, we will first define what we mean by “meaning,” arguing that the variety of types of meaning people experience and pursue in their lives can be broadly categorized (and indeed have been categorized in much of the psychological theory and research on meaning) as falling into one of two types: “everyday” and “ultimate.”

---

D. Sullivan (✉)

Department of Psychology, University of Kansas, Lawrence, KS, USA  
e-mail: dsully@ku.edu

S. Kosloff

Department of Psychology, California State University, Fresno, CA, USA

J. Greenberg

Department of Psychology, University of Arizona, Tucson, AZ, USA

## Everyday and Ultimate Meaning

In the history of psychology, theorists and researchers have adopted a variety of approaches to understanding *meaning*. Summarizing the vast research on meaning, Wong (1998) noted that most definitions of personal meaning fall into one of two broad, interrelated categories:

Generally, two types of meaning have been recognized...The ultimate meaning of human existence can be discovered through religious beliefs, philosophical reflections, and psychological integration, whereas specific meanings in everyday living can be created through engagement, commitment, and the pursuit of life goals. (p. 405)

Thus there are perspectives that place more emphasis on the need for *ultimate* meaning – a feeling of self-transcendent purpose (e.g., Frankl 1986; Maslow 1954) – and perspectives that focus on *everyday* meaning: the maintenance of a “paramount reality” (Berger and Luckmann 1967), constructed out of stable, known cause-and-effect relationships, within which the individual can pursue personal goals (e.g., Cantril 1941; Emmons 1986; Klinger 1977; Proulx and Heine 2010). Other theoretical frameworks incorporate both everyday and ultimate meaning in various ways (e.g., Antonovsky 1979; Baumeister 1991; Park 2010).

Speaking broadly, everyday meaning arises from the cognitive micromanaging of the social and natural environment, while ultimate meaning arises from the more emotion-laden process of macromanaging our lives and their relationship to a broader community, history, and cosmos. Everyday meaning involves the attempt to structure our social and natural environments into a series of dependable, recursive patterns and expected relationships, so that we may effectively engage in short-term goal-directed action within those environments. Ultimate meaning, on the other hand, is achieved by seeing the self as pursuing and achieving broad goals across an extended temporal span while embedded in a universe where human actions are highly significant. It is important to note at the beginning of our discussion that, in theory at least, it would seem possible to exist in a world of everyday meaning without ever creating or experiencing ultimate meaning. Many organisms do in fact seem to do just this. In principle even human beings could survive in and navigate a world that “made sense,” where people and things behaved in predictable ways, without perceiving that world as cosmically significant and themselves as infinitely valuable. And yet almost all of us feel like we live in a world of ultimate meaning, and Wong argues that, for humans, “coping with suffering, illness, and death require(s) *both* types of meaning” (1998, p. 405, italics added).

Despite the consensus that meanings may be everyday or ultimate in nature, questions remain as to the function that both types of meaning serve for people. One might speculate that making meaning informs objective, rational apprehension of experience in the social and natural worlds. Yet cross-cultural variation in the content of constructed meanings, as well as the extreme lengths to which people go in structuring their lives and defending beliefs, suggests that meanings serve motivational functions irreducible to rationality. Wars in the service of broad political and/or theological ideals are often carried out despite their negative socioeconomic impact,

and motivational states can influence construal of even the most basic perceptual events (e.g., Balcetis and Dunning 2006; Bruner and Minturn 1955). If the construction and maintenance of ultimate and everyday meanings is motivated, what is the operative motivational impetus?

## Motivational Accounts of Meaning Construction and Maintenance

Several thinkers have provided evolutionary accounts of the motivation behind meaning by proposing that perceptions of meaning are either directly adaptive insofar as they enhance survival and procreation, or they are by-products of other such adaptations. It is fairly straightforward to see how everyday meaning could serve an adaptive purpose. If we didn't have innate tendencies to classify objects in the social and natural world and to establish schemas based on recurring cause-and-effect relationships, it would be overwhelmingly difficult to navigate our environments and survive to reproduce (see, e.g., Kaschak and Maner 2009). But how do evolutionary accounts explain the need for ultimate meaning?

Multiple authors have proposed that many common sources of ultimate meaning – such as religious ideologies or the pursuit of peak experiences and self-actualization – are actually only by-products of more basic adaptive cognitive mechanisms. Sosis (2009) reviews some of the “by-product” accounts of religion, such as the popular idea that religious beliefs came about because trait ability to perceive agency in the natural environment was selected for. In a similar fashion, Kenrick et al. (2010) and Ridley (1993) contend that the felt need to pursue a unique calling and the growth motive Maslow (1954) referred to as “self-actualization” are actually superficial cognitive manifestations reducible to fitness-enhancing behavior such as the pursuit of mates.

It is ideal for any theory attempting to explain a basic aspect of human psychology to be compatible with evolutionary perspectives. However, labeling the need for ultimate meaning a “by-product” of other adaptations fails to explain the persistence of this need across time and why it has presumably been continuously selected for throughout human history by either biological or cultural evolutionary processes (see Reeve and Sherman 1993). This problem is especially pronounced because the pursuit of ultimate meaning often results in behaviors that thwart the successful passing on of genes. People in the grip of a religious or tribalistic meaning system will sometimes engage in ascetic or even suicidal behavior that seriously curtails genetic transmission (e.g., Bloom 1997). Perhaps the drive to find complex, ultimate meaning arose as a by-product of other adaptations, but why has such a seemingly volatile and energy-consuming phenotype not only persisted but flourished over the centuries? What adaptive psychological function of meaning-making could compensate for the cognitive and emotional resources that it demands?

Some social psychological accounts operating outside the explicit bounds of evolutionary theory attempt to explain the function of meaning by arguing that it

preserves a basic level of psychological security. One such perspective – the Meaning Maintenance Model (MMM; Proulx and Heine 2010; Chap. 4) – argues that people need to maintain the perception of expected, meaningful relationships in the world because the absence of clear meaning induces an aversive state of general arousal.

We find this model problematic for a number of reasons. First, it seems like an oversimplified version of cognitive dissonance theory. Second, its definition of meaning does not distinguish different types or levels of meaning. Surely the meaning of a word and the meaning of one’s life are different in important ways. Third, the model overapplies the notion of the intersubstitutability of meaning frameworks. When a valued source of ultimate meaning is threatened, people are not content to simply reaffirm any other source of meaning – for an American, stacking a deck of cards enough times or waving the Iranian flag would not have compensated for the psychological impact of the 9/11 terrorist attacks. In general, people clearly prefer some meanings over others. It is just as meaningful to declare some person and group evil as it is to declare them good. Yet people seem to prefer to view themselves and their groups as good and to reserve the ascription of evil for out-group targets. In short, people do not want just any meanings; they want meanings that support their need to believe they are significant beings in a meaningful world.

A useful theory of meaning should explain the different levels and values of particular meanings. The MMM falls short in this regard by relying on the central circular assertion that people need meaning because meaninglessness is aversive – reminiscent of Argan’s claim in Moliere’s *The Imaginary Invalid* that opium induces sleep “because it contains a sleepy faculty whose nature it is to put the senses to sleep” (as cited in F. Nietzsche 1886/1989, p. 19). We share Nietzsche’s assessment that “such replies belong in comedy.” Furthermore, the MMM provides no explanation for why people created meaning structures in the first place, making it very difficult for the MMM (which defines “meaning” exclusively in terms of everyday meaning, the maintenance of expected relationships) to explain the need for ultimate meaning in particular. As the creators of the MMM themselves acknowledge (Proulx and Heine 2010), many of the “absurdist” expectancy violations we experience in our lives stem directly from our systems for maintaining ultimate meaning. For example, if a given person did not believe that the experience of art was what made her life meaningful, then she would not continually expose herself to bizarre and novel artworks that question her everyday understanding of reality.

What is required of a complete account of the need for meaning – and what evolutionary by-product accounts and the MMM fail to provide – is an explanation for why people create irrational meaning systems that often make reality seem far more complex and unpredictable than it need be and why they then invest in these particular symbolic constructions with such fervor. TMT is a security-based account of why people seek meaning, grounded in evolutionary theory. In contrast to the accounts reviewed above, TMT explains why people are motivated to maintain a sense of both everyday *and* ultimate meaning in their lives and why the need for ultimate meaning often trumps the need for everyday meaning.

## Terror Management Theory: A Motivational Account of the Creation and Defense of Meaning

TMT is based on the writings of Ernest Becker, who sought to combine insights from sociology, anthropology, existential philosophy, and psychoanalysis into a coherent framework for understanding the motivations behind humans' pursuits of meaning and self-worth. Although aspects of everyday and ultimate meaning are present throughout his work, Becker began with an early focus on everyday meaning, rooting his analyses in the social interactionism of George Herbert Mead and pragmatist philosophy. In *The Revolution in Psychiatry* (1964) he wrote:

Meaning is the elaboration of an increasingly intricate ground plan of broad relationships and ramifications. It is the establishment of dependable cause-and-effect sequences which permit ego-mastery and action. Meaning is at the heart of life because it is inseparable from dependable, satisfying action. (p. 113)

However, by 1971, when he wrote the revised version of *The Birth and Death of Meaning*, Becker had elaborated his understanding of the meaning provided by culture. At this time he identifies cultural meaning as having two primary components: a "safety" component, which is analogous to the everyday meaning emphasized in his early work ("Action has to be dependable and predictable"; 1971, p. 83), and a "self-esteem" component, which is more comparable to a sense of ultimate meaning provided by the culture ("[Culture's] task is to provide the individual with the conviction that he is *an object of primary value in a world of meaningful action*"; p. 79, italics in original).

With the publication of *The Denial of Death* (1973), Becker's exploration of the construct of meaning reaches its pinnacle. By shifting from a symbolic interactionist to an existential perspective, Becker settles on the fundamental importance of ultimate meaning. To satisfactorily cope with the human problems of suffering, felt inadequacy, and ultimately death (all products of our unique cognitive capacity for self-awareness and temporal thinking), people need more than a feeling of efficacy within a framework of expected relationships. They need immortality, literal or symbolic: they need ultimate meaning that transcends the self and especially the self's physical, mortal limits. Thus, at the end of his career, Becker concludes that culture is ultimately "a mythical hero-system in which people serve in order to earn a feeling of primary value, of cosmic specialness, of ultimate usefulness to creation, of unshakable meaning" (p. 5).

Because TMT draws on Becker's multidisciplinary understanding of the nature of meaning, it is suited to provide a motivational account of the construction of both everyday and universal meaning. Consistent with other evolutionary perspectives (e.g., Deacon 1997; Gould 1982), TMT argues that the awareness of personal mortality emerged uniquely for humans as a consequence of the development of symbolic representation and the ability to psychologically project the self across time. Although humans, like other living organisms, are biologically predisposed to seek continued survival, they are also aware of death's inevitability. Accordingly, the abstract knowledge that death looms is for humans a source of potentially

overwhelming anxiety. To manage this potential anxiety, people utilize their symbolic abilities to construct a *cultural worldview*: a shared set of beliefs about the nature of reality and meaning of the universe. The worldview espouses standards of value that individuals can live up to to acquire *self-esteem*: a sense of personal worth in the context of a broader cosmology. Being a person of worth within a meaningful cultural framework qualifies the individual for entrance to an afterlife (in more religious worldviews) or for being remembered for prized accomplishments after death (in more secular worldviews).

Importantly, TMT draws on Becker's insight that both everyday and ultimate meaning are necessary for the individual to successfully defend against death anxiety. Because self-esteem serves as an anxiety buffer, the individual requires a sense of predictable everyday meaning within which she can reliably engage in those actions valued by her culture and thereby shore up positive self-regard. Beyond this, a sense of ultimate meaning must underlie the long-term goals and strivings of the individual, providing a guarantee of literal or symbolic immortality.

To date, over 400 empirical studies in dozens of countries have supported TMT's assertion that defense of meaning frameworks is at least partly motivated by awareness of death. Research examining TMT has often utilized the *mortality salience paradigm*, in which individuals are subtly induced to think about their own death – what is called “mortality salience” or MS. Responses from individuals under MS are typically compared to responses from control participants who have thought about negative topics other than death – like pain, uncertainty, being socially excluded, unexpected events, meaninglessness, and being paralyzed – in order to ensure that outcomes are consequences of thinking about death and not just generalized reactions to any negative thought. When people experience MS, they initially engage in *proximal* defenses to minimize the threat of death and remove thoughts of death from consciousness (for instance, by reassuring themselves that their death is still a long way off; Pyszczynski et al. 1999). After conscious suppression, however, the potential for death-related anxiety is triggered outside of conscious awareness (Greenberg et al. 2003). In order to minimize this potential, individuals then engage in *distal* defenses: bolstering the structures of meaning and self-esteem that defuse the threat of death. We now turn to a selective review of TMT research testing the idea that MS motivates the procurement and defense of everyday and ultimate meaning, but only once thoughts of death have receded from consciousness.

## **Everyday Death Denial: Structuring a World of Meaningful Action**

If everyday meaning – the structuring of the social and natural world in terms of logical patterns and expected relationships – facilitates the distal defense process of terror management, then inducing MS should cause individuals to more ardently enforce everyday meaning. TMT research has shown that MS intensifies the tendency to rely on everyday meaning in various forms, influencing the ways

individuals order and construe themselves and other people, as well as basic processes that regulate the perception of fundamental features of experience, such as space and time.

Existential philosophers have long recognized connections between understandings of death and of time (Heidegger 1927/1982). Time may be understood as a relentless sequence of increments ticking along, bringing one closer to the inevitable end. Yet time also undergirds our everyday sense of meaningful order – when time is extended and orderly, we may feel a sense of poise and security; but if time proceeds too fast or is disordered, the world can seem dizzying and difficult to navigate. Research shows that the perception of time is influenced by death-related concerns. Martens and Schmeichel (2011) asked participants to estimate a time interval and found that MS increased the perceived duration of the interval relative to thoughts of social exclusion (in this and in all of the following studies, a delay task was interposed between the MS induction and the dependent measure to ensure that thoughts of death had receded from conscious awareness). Extending perceived time may afford opportunities to plan effectively, which could lend securing everyday meaning in the face of death. Indeed, research by Landau et al. (2009a) showed that MS intensified efforts to structure time. Participants led to think about death planned a hypothetical vacation in a more structured and detailed manner compared to those who contemplated uncertainty – an effect that was particularly pronounced among individuals who were predisposed to seek structure in their lives.

MS also influences the ways people physically orient to and construe objects and actions in space. Just as disordered time can generate a sense of meaninglessness, so can disordered space. Individuals often obtain a satisfying sense of focus and order from mapping out their day, cleaning their desk, or even finding Waldo. This sense of everyday meaning arises from the perception that one's environment is structured and easily navigable. We might expect death thoughts to increase people's preference for such environments. Accordingly, Koole and van den Berg (2005) found that, after a death reminder, people were less attracted to landscapes described as wild, overgrown, and uncultivated, but were more attracted to landscapes described as cultivated and ordered by human intervention.

Within perceived temporal-spatial landscapes, meaning can be lost or found in the smallest of places each day. Mundane objects and events may be construed simply as material things and mechanical movements in space or as tools linked to the completion of broader goals. Indeed, Landau et al. (2011) showed that MS increased the tendency to identify everyday phenomena in terms of their higher-order significance – e.g., construing “toothbrushing” as “preventing tooth decay” rather than “moving a brush around in one's mouth.” Our tendency to construe our everyday actions as meaningful is related to a general process of human cognition that Becker referred to as “time-binding”: the perception of linkages between present, past, and future selves and actions. In a study investigating the role of death concerns in this process more directly, Landau et al. (2011) asked individuals to list some broad future goals, as well as some particular actions they anticipated taking within the coming days. Later, participants were asked to identify (by drawing lines) the number of upcoming actions that were meaningfully connected to their

long-term goals. Compared to control participants who had contemplated social exclusion, MS participants connected significantly more present actions to future goals. Similarly, after MS, people see more connections between past events and who they are now (Landau et al. 2009c) and subjectively experience positive past events involving close friends as being closer in time (Wakimoto 2011).

These findings suggest that one way individuals enforce structure on the physical world is by linking everyday actions and events to the meaningful goals of a coherent self, a core entity whose continuity extends across multiple domains of time and space. Of course, the self does not reside alone within the temporal-spatial environment. We inhabit rich social landscapes that we sometimes struggle to navigate and make sense of. Interpreting others' identities and actions is an essential part of maintaining a stable perception of everyday reality, and thus according to TMT helps to uphold the distal defense structures which let us deny death. One way in which individuals imbue the social world with a clear sense of everyday meaning – often inaccurately – is through reliance on *stereotypes*: generalized beliefs about members of a social category. Assigning stereotypes makes others appear predictable, pigeonholing them into reliable categories (Kunda and Spencer 2003). Indeed, Schimel et al. (1999) found that MS heightened preference for stereotype-consistent over stereotype-inconsistent targets (African Americans, Germans, gay men, and women). The preference for simple, structured interpretations of social events was also demonstrated in various ways by Landau et al. (2004). They found that, among individuals who greatly seek a structured reality, MS exaggerated the tendency to seize upon first impressions of others and ignore later information about them and to base an understanding of who another person is on stereotype-relevant information rather than statistical probabilities.

In sum, concerns with death motivate the imposition of clear structure on time, space, the self and its actions, and others, rendering them predictable and navigable, and generating opportunities for goal-directed action. Yet these everyday meanings provide only a basic but incomplete framework for our larger efforts to mitigate thoughts of annihilation. They routinely afford balance and security, but can never satisfy our most pressing terror management aim – the crown jewel called “immortality.”

## **Ultimate Meaning: Personal and Cultural Significance as Paths to Immortality**

As we have proposed throughout this chapter, people need to see meaning in the world beyond expected relationships and recursive patterns. People want ultimate meaning. They want to see themselves on trajectories that will realize some positive, powerful, and ultimate end – not just today, but for eternity. The symbolic systems which cultures develop to provide such trajectories will be supported by the individual even when they are contradicted by the harsh and disorderly reality of everyday events, and many individuals will even sacrifice their lives for them.



We construct and elaborate these complex and ethereal meaning systems in a futile attempt to deny life's one certainty: that it must end. As Ionesco put it, "As long as we are not assured of immortality, we shall never be fulfilled, we shall go on hating each other in spite of our need for mutual Love" (cited in Becker 1975, pp. 136–137). It is by believing in one's heaven-bound soul, or in a personal legacy that will seemingly last forever in the eyes of others – in short, by believing that the self is embedded in "unshakable" ultimate meaning – that we psychologically transcend the insulting limits of our insignificant wormliness. TMT-based research provides snapshots of death-related concerns motivating these ultimate quests.

According to TMT, the pursuit of self-esteem is the pursuit of immortality – of feeling that one is an agent of primary value in the universe with the prospect of ultimate continuance. Research has shown that MS promotes efforts to succeed in domains relevant to the individual's sense of self-worth. After MS, people will drive faster, exercise harder, show off their physical strength, and cheer louder for sports teams – but only if such behaviors are relevant to the participants' self-esteem (for a review, see Greenberg 2008). Studies also show that self-esteem in valued domains preserves the individual's sense of ultimate meaning in the face of death. Specifically, Routledge et al. (2010) demonstrated that among those individuals whose sense of self-esteem was undermined (when asked to contemplate a time they failed to live up to a personal value), MS decreased perceptions of meaning in life, an effect that was buffered when participants' self-esteem was affirmed.

As important as it is to recognize the role of positive self-regard in maintaining meaning, the opposite side of the coin is also crucial. TMT emphasizes that the individual is only motivated to pursue self-worth within a culturally established framework of ultimate meaning: a framework that in some way guarantees the immortality of the self and its accomplishments. Without immortality, personal success and fame are fleeting and meaningless for the individual (Nietzsche 1874/1997). In line with this idea, empirical evidence suggests that, under MS, individuals will not self-enhance when doing so threatens the validity of existing meaning structures and cultural authority figures, a possible explanation for phenomena such as system justification and stereotype threat (Landau et al. 2009b).

By highlighting the importance of culturally derived ultimate meaning, TMT sheds light on why people often sacrifice their personal esteem and interests to the enhancement of a group – such as a nation – to which they are fiercely devoted. By feeling like one is part of a collective that will span generations, the individual can sustain a sense of symbolic immortality and ultimate meaning, despite her awareness of her imminent personal demise. In support of this analysis, Sani et al. (2009) have shown that, after contemplating death, individuals display elevated perceptions of the temporal continuity of their national group (i.e., they see traditions and values as being transmitted across the group's generations in historical perpetuity), and this increased sense of collective continuity predicts heightened ingroup identification. Such defense of meaning through emergence in the collective can ironically extend even to the willing annihilation of the self: studies have shown that MS increases Iranian college students' favoritism towards the prospect of suicide bombing in the service of one's ethnic group (Pyszczynski et al. 2006).

Herein lies the potential for the “hate” of which Ionesco spoke. In the history of humanity, untold millions have died in ideologically driven clashes between incompatible collective immortality ideologies. Such ideologies are symbolic constructions, concretized to a certain extent in institutions (e.g., the Supreme Court) and “sacred” objects (e.g., the U.S. flag) representing the worldview (Berger and Luckmann 1967). Worldviews often stand in potential conflict with one another: Democrat ideals are threatened by Republican ideals, aspects of religious doctrine appear to contradict the findings of modern empirical science, and so on. How can one be sure that one’s worldview provides the “true” route to immortality, when so many alternatives exist, espousing contradicting tenets? In the context of the quest for meaning, the question becomes: how does one maintain a sense of “unshakable meaning” in the face of competing worldviews?

TMT holds that, when death thoughts are active on the fringes of consciousness, this question becomes particularly important for the individual. Thus, one of the most replicated effects in the TMT literature is *worldview defense*: after MS, people defend symbolic structures that provide them with ultimate meaning by showing a preference for people and things that represent their worldview and a dislike for people and things representing opposing worldviews. For example, Greenberg et al. (1990) showed that Christians responded to a death reminder by showing increased liking for a fellow Christian target and decreased liking for a Jewish target. Kosloff et al. (2011) recently showed that MS prompts advocates of evolutionary theory to assimilate creationists into an evolutionary outlook.

The derogation, assimilation, and even annihilation of those who oppose one’s path to ultimate meaning are thus motivated in part by death-related concerns. Immortality striving, our efforts to procure ultimate meaning – to make life on earth as if it were in heaven – has the potential to spark intergroup conflict and make our lives a living hell. As Becker (1975) noted, “In seeking to avoid evil, man is responsible for bringing more evil into the world” (p. 5). However, we must remember that the quest for ultimate meaning in the face of death has also led thousands of people to adhere to charitable religions, create beautiful art, and benefit humanity through the pursuit of truth in science. In this regard, we should note the obvious: people do not all find ultimate meaning in the same way.

For example, among those low in dispositional tendencies to seek structured and ordered environments (Thompson et al. 2001), thoughts of death induce meaning-making outside of strict adherence to their local worldview. In fact, those who are not particularly attracted to clear, structured knowledge see their lives as more meaningful when, after MS, they are given an opportunity to contemplate novel, unfamiliar information (such as artworks from foreign cultures) or to reflect on possible ways in which their lives might have turned out completely differently (Vess et al. 2010). In short, some individuals sustain ultimate meaning in the face of death awareness not by sacrificing themselves but rather by sacrificing everyday meaning in exploratory engagement with alternate realities.

Different people find ultimate meaning either through subservience of their personal interests to a transcendent collective or through defending the symbolic structures in which they are immersed or through creatively breaking out of the

confines of everyday meaning. What is important from the present perspective is the wealth of empirical evidence demonstrating that the quest for symbolic or literal immortality contributes to all these diverse attempts to pursue and maintain ultimate meaning.

## The Death and Future of Meaning

As the prior section suggests, research has supported Becker's insight that the human quest for immortality has historically bred extreme psychological rigidity and countless instances of cultural conflict. This raises a fundamental question for TMT research on meaning-making: how can individuals obtain a sense of ultimate meaning independent of the potential for conflict inherent in most meaning systems? This is an under-researched phenomenon, although some extant findings suggest why it might be such a difficult goal to obtain.

For one, the sometimes deadly consequences of worldview defense are in many ways an undesirable outcome of an otherwise very adaptive tendency for human groups. The substantial TMT-based empirical literature and the theoretical work on which it is based strongly suggest that most individuals need unshakable faith in clear meaning systems to maintain psychological equanimity despite death awareness. This point is illustrated by recent research showing that among individuals whose sense of meaning has been threatened by severe trauma, those who cope successfully with the event and restore their faith in the world's meaningfulness subsequently show *exaggerated* worldview defense effects, whereas those who develop post-traumatic stress disorder – who fail to rebuild their sense of meaning – no longer show these effects (Pyszczynski and Kesebir 2011). In other words, although a sense of ultimate meaning can breed hostility towards out-groups, if our society attempts to reduce such hostility through the simple detachment of individuals from their meaning systems, we run the risk of severely maladaptive outcomes.

The question seems to be how we can provide individuals with meaning systems that maintain psychological security but simultaneously promote tolerance and openness to other worldviews. Recent research has suggested some possibilities as to what the substance of such worldviews would be like. For example, participants who have been induced to fantasize about alternate realities (Cohen et al. 2011) or who are characterized by high dispositional mindfulness (Niemic et al. 2010) do not show typical worldview defense after MS. It is unclear whether these two effects occur through a similar mechanism. Mindfulness typically involves a heightened awareness of present experience divorced from distraction, while in Cohen et al.'s (2011) work the effect of flight fantasizing on reduced concerns with death was mediated by a sense of freedom from one's bodily limitations. There may be similarities but also differences between these processes: mindfulness entails a fresh mode of processing that heightens our engagement with and awareness of the everyday meaning in which we are embedded, while fantasies of flight transcend the everyday into the realms of ultimate meaning. Yet both involve a full and

attentive immersion in one's current experiential state, whether it is physical or more "cerebral." Future research should investigate whether different worldviews that promote these forms of liberation from a more mundane experience of meaning are more or equally effective at mitigating death concerns while also promoting tolerance.

The potential contrast but also compatibility of mindfulness and fantasy as routes to peaceful death transcendence is a key one in the modern world. With the rise of capitalism, residential mobility, and globalization alongside continuing intergroup violence and environmental uncertainty, traditional meaning systems are increasingly drawn into question, and our ability to experience awe at the more wondrous aspects of existence potentially fades. In the tumult of modernity, both the ability to calmly and non-defensively "just be" in the moment and the capacity to sustain a sense of fantastic awe seem increasingly rare. Yet both may be seeds for resilient but flexible trees of meaning, which can stand immortal atop the bones that continue to accumulate beneath our feet.

## References

- Antonovsky A (1979) *Heath, stress, and coping*. Jossey-Bass, San Francisco
- Balcetis E, Dunning D (2006) See what you want to see: motivational influences on visual perception. *J Pers Soc Psychol* 91:612–625
- Baumeister R (1991) *Meanings of life*. Guilford Press, New York
- Becker E (1964) *The revolution in psychiatry*. Free Press, New York
- Becker E (1971) *The birth and death of meaning*. Free Press, New York
- Becker E (1973) *The denial of death*. Free Press, New York
- Becker E (1975) *Escape from evil*. Free Press, New York
- Berger P, Luckmann T (1967) *The social construction of reality*. Penguin, London
- Bloom H (1997) *The Lucifer principle*. Atlantic Monthly Press, New York
- Bruner JS, Minturn AL (1955) Perceptual identification and perceptual organization. *J Gen Psychol* 53:21–28
- Cantril H (1941) *The psychology of social movements*. Wiley, New York
- Cohen F, Sullivan D, Solomon S, Greenberg J, Ogilvie D (2011) Finding everland: flight fantasies and the desire to transcend mortality. *J Exp Soc Psychol* 47:88–102
- Deacon TW (1997) *The symbolic species: the co-evolution of language and the brain*. Norton, New York
- Emmons RA (1986) Personal striving: an approach to personality and subjective well-being. *J Pers Soc Psychol* 51:1058–1068
- Frankl V (1986) *The doctor and the soul: from psychotherapy to logotherapy*. Random House, New York
- Gould SJ (1982) Darwinism and the expansion of evolutionary theory. *Science* 216:380–387
- Greenberg J (2008) Understanding the vital human quest for self-esteem. *Perspect Psychol Sci* 12:48–55
- Greenberg J, Pyszczynski T, Solomon S, Rosenblatt A, Veeder M, Kirkland S et al (1990) Evidence for terror management theory II: the effects of mortality salience on reactions to those who threaten or bolster the cultural worldview. *J Pers Soc Psychol* 58:308–318
- Greenberg J, Martens A, Jonas E, Eisenstadt D, Pyszczynski T, Solomon S (2003) Psychological defense in anticipation of anxiety: eliminating the potential for anxiety eliminates the effect of mortality salience on worldview defense. *Psychol Sci* 14:516–519

- Heidegger M (1927/1982) *Being and time* (trans: Macquarrie J, Robinson E). Harper & Row, New York
- Kaschak MP, Maner JK (2009) Embodiment, and evolution, and social cognition: an integrative framework. *Eur J Soc Psychol* 39:1235–1244
- Kenrick DT, Griskevicius V, Neuberg SL, Schaller M (2010) Renovating the pyramid of needs: contemporary extensions built upon ancient foundations. *Perspect Psychol Sci* 5:292–314
- Klinger E (1977) *Meaning and void: inner experiences and incentives in people's lives*. University of Minnesota Press, Minneapolis
- Koole SL, Van den Berg AE (2005) Lost in the wilderness: terror management, action orientation, and nature evaluation. *J Pers Soc Psychol* 88:1014–1028
- Kosloff S, Cesario J, Martens A (2011) Resistance is futile: mortality salience increases efforts to assimilate differing others into one's own worldview. Unpublished manuscript. East Lansing
- Kunda Z, Spencer SL (2003) When do stereotypes come to mind and when do they color judgment? A goal-based theoretical framework for stereotype activation and application. *Psychol Bull* 129:522–544
- Landau MJ, Johns M, Greenberg J, Pyszczynski T, Martens A, Goldenberg JL, Solomon S (2004) A function of form: terror management and structuring the social world. *J Pers Soc Psychol* 87:190–210
- Landau MJ, Greenberg J, Sullivan D (2009a) Defending a coherent autobiography: when the past appears incoherent, mortality salience prompts compensatory bolstering of the past's significance and the future's orderliness. *Pers Soc Psychol Bull* 35:1012–1020
- Landau MJ, Greenberg J, Sullivan D (2009b) Managing terror when self-worth and worldviews collide: evidence that mortality salience increases reluctance to self-enhance beyond authorities. *J Exp Soc Psychol* 45:68–79
- Landau MJ, Greenberg J, Sullivan D, Routledge C, Arndt J (2009c) The protective identity: evidence that mortality salience heightens the clarity and coherence of the self-concept. *J Exp Soc Psychol* 45:796–807
- Landau MJ, Kosloff S, Schmeichel BJ (2011) Imbuing everyday actions with meaning in response to existential threat. *Self Identit* 10:64–76
- Martens A, Schmeichel BJ (2011) Evidence that thinking about death relates to time estimation behavior. *Death Stud* 35(6):504–524
- Maslow A (1954) *Motivation and personality*. Harper, New York
- Niemiec CP, Brown KW, Kashdan TB, Cozzolino PJ, Breen WE, Levesque-Bristol C, Ryan RM (2010) Being present in the face of existential threat: the role of trait mindfulness in reducing defensive responses to mortality salience. *J Pers Soc Psychol* 99:344–365
- Nietzsche F (1874/1997) *Untimely meditations* (trans: Hollingdale RJ). Cambridge University Press, Cambridge
- Nietzsche F (1886/1989) *Beyond good and evil: prelude to a philosophy of the future* (trans: Kaufmann W). Random House, New York
- Park CL (2010) Making sense of the meaning literature: an integrative review of meaning making and its effects on adjustment to stressful life events. *Psychol Bull* 136:257–301
- Proulx T, Heine SJ (2010) The frog in Kierkegaard's beer: finding meaning in the threat-compensation literature. *Soc Pers Psychol Compass* 4:889–905
- Pyszczynski T, Kesebir P (2011) Anxiety buffer disruption theory: a terror management account of posttraumatic stress disorder. *Anxiety Stress Coping* 24:3–26
- Pyszczynski T, Greenberg J, Solomon S (1999) A dual-process model of defense against conscious and unconscious death-related thoughts: an extension of terror management theory. *Psychol Rev* 106:835–845
- Pyszczynski T, Abdolhossein A, Solomon S, Greenberg J, Cohen F, Weise D (2006) Mortality salience, martyrdom, and military might: the great Satan versus the axis of evil. *Pers Soc Psychol Bull* 32:525–537
- Reeve HK, Sherman PW (1993) Adaptation and the goals of evolutionary research. *Q Rev Biol* 68:1–32
- Ridley M (1993) *The Red Queen: sex and the evolution of human nature*. Viking, London

- Routledge C, Ostafin B, Juhl J, Sedikides C, Cathey C, Liao J (2010) Adjusting to death: the effects of mortality salience and self-esteem on psychological well-being, growth motivation, and maladaptive behavior. *J Pers Soc Psychol* 99:897–916
- Sani F, Herrera M, Bowe M (2009) Perceived collective continuity and ingroup identification as defence against death awareness. *J Exp Soc Psychol* 45:242–245
- Schimmel J, Simon L, Greenberg J, Pyszczynski T, Solomon S, Waxmonsky J, Arndt J (1999) Stereotypes and terror management: evidence that mortality salience enhances stereotypic thinking and preferences. *J Pers Soc Psychol* 77:905–926
- Sosis R (2009) The adaptationist-byproduct debate on the evolution of religion: five misunderstandings of the adaptationist program. *J Cognit Cult* 9:315–332
- Thompson MM, Naccarato ME, Parker KCH, Moskowitz GB (2001) The personal need for structure and personal fear of invalidity measures: historical perspectives, current applications, and future directions. In: Moskowitz GB (ed) *Cognitive social psychology: Princeton symposium on the legacy and future of social cognition*. Lawrence Erlbaum Associates Publishers, Mahwah, pp 19–39
- Vess M, Routledge C, Landau MJ, Arndt J (2010) The dynamics of death and meaning: the effects of death-relevant cognitions and personal need for structure on perceptions of meaning in life. *J Pers Soc Psychol* 97:728–744
- Wakimoto R (2011) Reconstruction of the subjective temporal distance of past interpersonal experiences after mortality salience. *Pers Soc Psychol Bull* 37:687–700
- Wong PTP (1998) Meaning-centered counseling. In: Wong PTP, Fry PS (eds) *The human quest for meaning: a handbook of psychological research and clinical applications*. Lawrence Erlbaum, Mahwah, pp 395–435